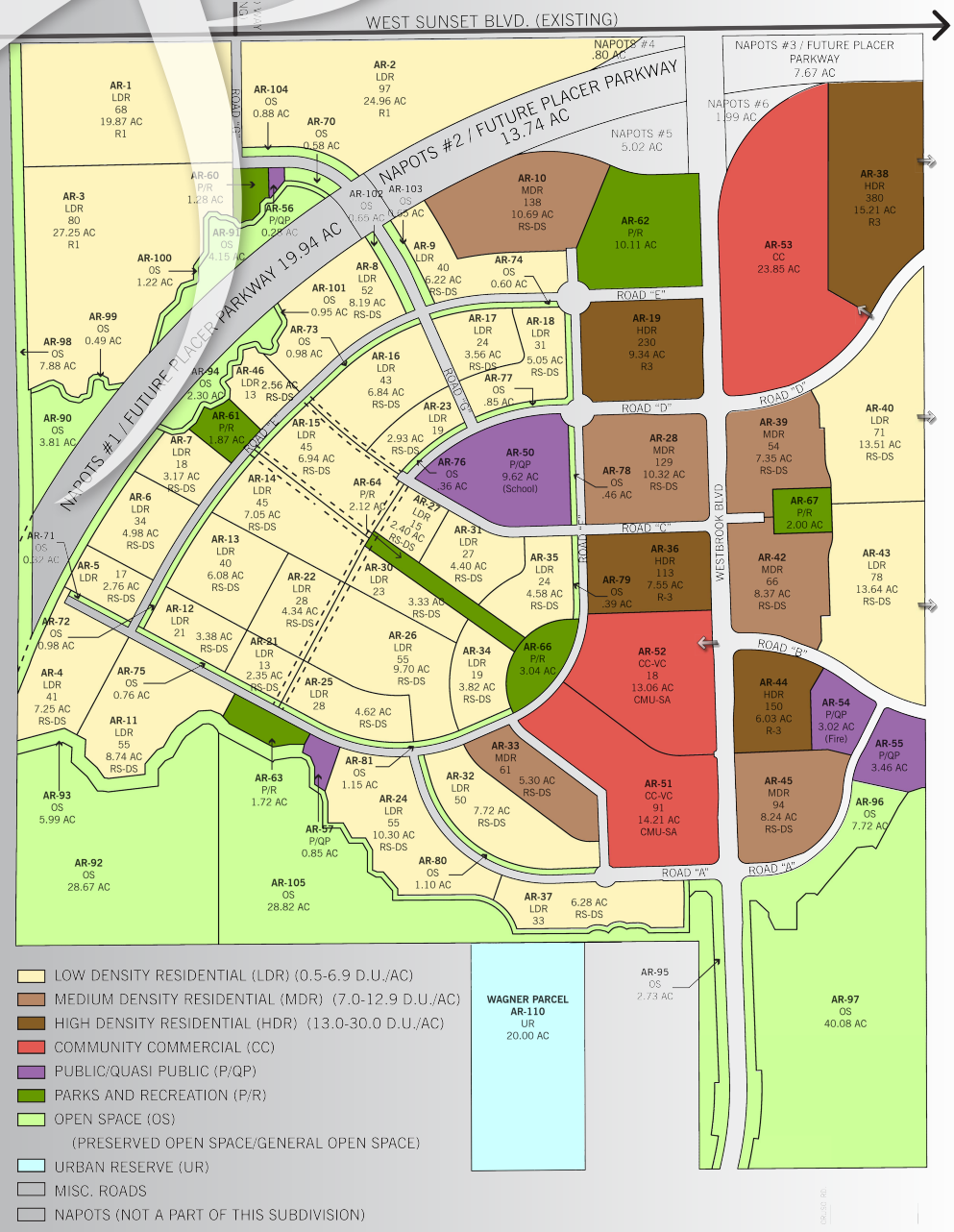
APPENDIX M

ARSP TRAFFIC STUDY

Final Traffic Study for the Amoruso Ranch Specific Plan

Prepared for

CITY OF ROSEVILLE CALIFORNIA



February 16, 2016

FEHR PEERS

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EXECUTIVE SUMMARY

PROJECT DESCRIPTION

This study analyzed the proposed Amoruso Ranch Specific Plan project assuming it would consist of 2,936 dwelling units and 476,000 square feet of office/retail uses, plus an elementary school, parks, and open space areas. The latest site plan (developed in September 2015) shows 110 fewer units. Accordingly, the analysis and conclusions of this study are considered somewhat conservative. The project would be located west of Fiddyment Road and south of Sunset Boulevard West in what is currently unincorporated Placer County. The project would be annexed into the City of Roseville. Vehicular access to the project would be provided to/from the south via the construction of Westbrook Boulevard to Blue Oaks Boulevard. Access to the north would also be provided by two project street connections to Sunset Boulevard West, which connects to Fiddyment Road.

PROPOSED CHANGES IN TRAFFIC STUDY METHODOLOGIES

The first chapter of this report describes the effects of three distinct changes in the approach the City of Roseville utilizes to analyze its existing and planned roadway system. These three changes and their associated effects are described below (all results in this section exclude the Amoruso project):

1. *Replace the "Circular 212" signalized intersection analysis methodology with the more state-of-the-practice "Highway Capacity Manual (HCM)" methodology.*

   Effect: The HCM methodology produces more accurate LOS results. Under existing AM peak hour conditions, the "Circular 212" and "HCM" methods result in similar overall results with 98 to 100 percent of intersections operating at LOS C or better. Under existing PM peak hour conditions, 96 percent of intersections operate at LOS C using Circular 212, whereas 81 percent of intersections operate at LOS C using HCM methods.

2. *Update the 2025 CIP travel demand model to reflect a new 2035 CIP condition to represent a typical planning horizon of 20 years into the future.*

   Effect: The 2025 CIP model (analyzed using Circular 212 method) resulted in LOS C or better operations at 88 percent of intersections during the AM peak hour and 78 percent of intersections during the PM peak hour. The 2035 CIP model (analyzed using HCM method) resulted in LOS C or better operations at 90 percent of intersections during the AM peak hour and 79 percent of intersections during the PM peak hour. However, the use of one methodology and horizon period versus the other resulted in many instances where an individual intersection LOS change occurs.

3. *Expand the General Plan level of service (LOS) policies to include weekday AM peak hour conditions, in addition to PM peak hour to provide a more robust approach for identifying potential significant impacts and recommending mitigation measures.*

   Effect: Inclusion of AM peak hour into the City's LOS policy would maintain consistency with the City's goal of at least 70 percent of signalized intersections operating at LOS C or better. However,

the City Council would need to exempt certain intersections from the LOS C requirement, similar to what already occurs for PM peak hour conditions.

Below is a list of the 46 intersections that would operate at LOS D or worse during the weekday PM peak hour under the 2035 CIP conditions (using HCM intersection analysis methods):

- Baseline Road/Fiddyment Road (LOS D)
- Blue Oaks Boulevard/Fiddyment Road (LOS D)
- Blue Oaks Boulevard/Diamond Creek Blvd. (LOS E)
- Blue Oaks Boulevard/Foothills Boulevard (LOS F)
- Blue Oaks Boulevard/Woodcreek Oaks Blvd. (LOS D)
- Blue Oaks Boulevard/Fidelity Way (LOS D)
- Blue Oaks Boulevard/Collector C (LOS D)
- Cirby Way/Sunrise Avenue (LOS E)
- Cirby Way/Foothills Boulevard (LOS E)
- Cirby Way/Riverside Avenue (LOS F)
- Cirby Way/Vernon Street (LOS E)
- Douglas Boulevard/Eureka Road (LOS E)
- Douglas Boulevard/Rocky Ridge Drive (LOS D)
- Douglas Boulevard/Sunrise Avenue (LOS E)
- Douglas Boulevard/Roseville Parkway (LOS E)
- Douglas Boulevard/Harding Boulevard (LOS E)
- Douglas Boulevard/Sierra College Boulevard (LOS D)
- Eureka Road/North Sunrise Avenue (LOS D)
- Foothills Boulevard/Baseline Road (LOS D)
- Foothills Boulevard/Roseville Parkway/HP Dr. (LOS D)
- Foothills Boulevard/Junction Boulevard (LOS D)
- Foothills Boulevard/Pleasant Grove Boulevard (LOS E)
- Galleria Boulevard/Antelope Creek Drive (LOS E)
- Galleria Boulevard/Roseville Parkway (LOS E)
- Pleasant Grove Boulevard/Fairway Drive (LOS F)
- Pleasant Grove Boulevard/Fiddyment Road (LOS D)
- Pleasant Grove Boulevard/Roseville Parkway (LOS F)
- Pleasant Grove Blvd./Highland Pointe Dr. (LOS F)
- Pleasant Grove Blvd./Washington Boulevard (LOS D)
- Pleasant Grove Blvd./Woodcreek Oaks Blvd. (LOS D)
- Roseville Parkway/Gibson Drive (LOS D)
- Roseville Parkway/North Sunrise (LOS E)
- Roseville Parkway/Reserve Drive (LOS E)
- Roseville Parkway/Secret Ravine Parkway (LOS D)
- Roseville Parkway/Taylor (LOS E)
- Roseville Parkway/Sierra College Boulevard (LOS D)
- Stanford Ranch Road/Five Star Blvd. (LOS D)
- Baseline Road/Woodcreek Oaks Blvd. (LOS D)
- Blue Oaks Boulevard/Washington Blvd. (LOS E)
- Douglas Blvd./I-80 WB Ramps (LOS E)
- Riverside Avenue/I-80 WB Ramps (LOS F)
- Galleria Boulevard/SR 65 SB Ramps (LOS D)
- Taylor Road/Eureka Rd/I-80 EB Off-Ramp (LOS D)
- Riverside Avenue/Orlando/I-80 EB Off-Ramp (LOS E)
- Fiddyment Road/Westhills Drive (LOS D)
- Roseville Parkway/Gibson Drive West (LOS E)

Below is a list of the 23 intersections that would operate at LOS D or worse during the weekday AM peak hour under the 2035 CIP conditions (using HCM intersection analysis methods):

- Baseline Road/Fiddyment Road (LOS D)
- Blue Oaks Boulevard/Fiddyment Road (LOS D)
- Blue Oaks Boulevard/Woodcreek Oaks Blvd. (LOS E)
- Cirby Way/Sunrise Avenue (LOS D)
- Cirby Way/Foothills Boulevard (LOS F)
- Cirby Way/Riverside Avenue (LOS D)
- Cirby Way/Vernon Street (LOS D)
- Douglas Boulevard/Roseville Parkway (LOS D)
- Douglas Boulevard/Harding Boulevard (LOS D)
- Galleria Boulevard/Roseville Parkway (LOS D)
- Pleasant Grove Boulevard/Fairway Drive (LOS D)
- Pleasant Grove Boulevard/Fiddyment Road (LOS E)
- Pleasant Grove Boulevard/Roseville Parkway (LOS F)
- Roseville Parkway/Taylor (LOS D)
- Baseline Road/Woodcreek Oaks Blvd. (LOS E)
- Blue Oaks Boulevard/Washington Blvd. (LOS D)
- Galleria Boulevard/SR 65 SB Ramps (LOS E)
- Gibson Drive/Convention Center (LOS E)

- Douglas Boulevard/Sierra College Boulevard (LOS D)
- Foothills Boulevard/Baseline Road (LOS E)
- Foothills Boulevard/Pleasant Grove Boulevard (LOS D)
- Fiddyment Road/Westhills Drive (LOS D)
- Roseville Parkway/Gibson Drive West (LOS D)

The City Council, following a public hearing, may determine, on a case-by-case basis that "extraordinary" improvements are not feasible or desirable and relax the LOS C standard for these intersections. The City's General Plan would presumably be amended to list these intersections as being exempted from the LOS C policy for AM peak hour conditions. The City could elect to apply the same City-wide LOS policy as for PM peak hour conditions (i.e., 70 percent operating at LOS C or better), or choose a different standard.

EXISTING PLUS PROJECT CONDITIONS

Table ES-1 illustrates how the project would affect the overall percentage of signalized intersections operating at LOS C or better in the City. As shown, at least 70 percent of all signalized intersections in the City would continue to operate at LOS C or better during the PM peak hour.

Table ES-1:
City of Roseville Signalized Intersection Operations – Existing Plus Project Condition (HCM Methodology)

Level of Service	Existing Conditions		Existing Plus Project Conditions	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
LOS A-C	98.1%	81.1%	96.3%	79.2%
LOS D	1.9%	15.1%	3.7%	15.8%
LOS E	0%	3.8%	0%	5%
LOS F	0%	0%	0%	0%

The proposed project would cause significant impacts at several City of Roseville intersections during the AM and PM peak hours. Table ES-2 lists each impacted intersection, the recommended mitigation, and the resulting significance after mitigation.

The proposed project would also cause significant impacts at facilities outside of Roseville including impacts at seven intersections, two roadway segments, and seven freeway segments. Mitigation measures for these impacts consist of project applicant fair share payments as described below:

Table ES-2:
City of Roseville Intersection Impacts and Mitigations – Existing Plus Project Conditions (HCM Methodology)

Intersection	Peak Hour	Impact	Recommended Mitigation	Residual Significance
Baseline Road/ Fiddyment Road	AM & PM	LOS C to D & LOS D to E	Add a second eastbound left-turn lane (See MM TR-1a)	LTS
Cirby Way/ Riverside Avenue	AM	LOS C to D	Add a third eastbound through lane (See MM TR-1b)	LTS
Baseline Road/ Foothills Boulevard	AM	LOS C to D	Add a third northbound through lane (See MM TR-1c)	LTS
Baseline Road/ Woodcreek Oaks Blvd.	AM	LOS C to D	Add a second eastbound through lane (See MM TR-1d)	LTS
Blue Oaks Boulevard/ Foothills Boulevard	PM	LOS C to D	Add a third northbound left-turn lane and a third southbound through lane (See MM TR-1e)	LTS
Cirby Way/Vernon Street	PM	LOS C to D	Add a second southbound left-turn lane (See MM TR-1f)	LTS
Junction Boulevard/ Foothills Boulevard	PM	LOS C to D	Add a second eastbound left-turn lane (See MM TR-1g)	LTS
Antelope Creek Blvd./ Galleria Boulevard	PM	LOS C to D	No feasible mitigation measures are available or necessary (See MM TR-1h)	LTS
Roseville Parkway/ Galleria Boulevard	PM	LOS D to E	Add a fourth westbound through lane (See MM TR-1i)	LTS

Notes:
1. LTS – Less Than Significant.
2. Each of the above improvements is included in the City's CIP and is considered feasible. The project's payment of the applicable Traffic Mitigation Fee (TMF) constitutes a fair share payment toward this improvement.

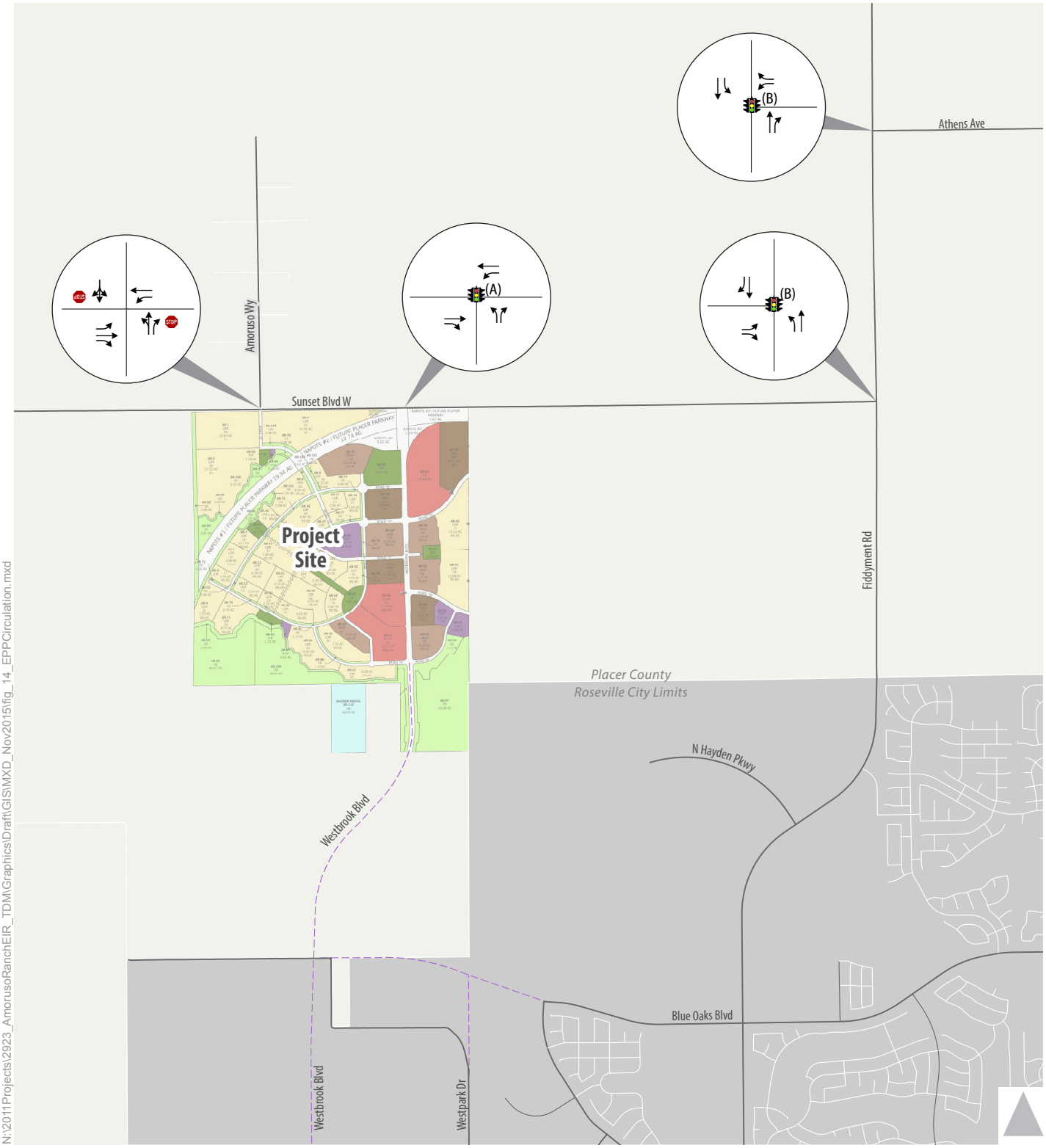
- If and when a regional fee program is established, the project applicant shall pay their fair share cost of installing a traffic signal at the following intersections within and maintained by Placer County:
    - Watt Avenue/PFE Road
    - Fiddyment Road/Athens Avenue
    - Fiddyment Road/Sunset Boulevard West
- The project applicant shall pay their fair share cost of any capacity-enhancing improvements identified by Placer County at the Cook-Riolo Road/PFE Road intersection.
- The project applicant shall pay their fair share cost of widening Riego Road to four lanes through the Pleasant Grove Road N/Riego Road and Pleasant Grove Road S/Riego Road intersections, which are maintained by Sutter County.

- The project applicant shall pay their fair share cost of widening Walerga Road to four lanes through the Walerga Road/PFE Road intersection, which is maintained by Placer County.
- The project applicant shall pay their fair share cost of widening Walerga Road to four lanes between Baseline Road and PFE Road in Placer County.
- The project applicant shall pay their fair share cost of widening Walerga Road to four lanes between PFE Road and Singing Tree Way in Sacramento County.
- The project applicant shall pay the Highway 65 JPA Fee and the South Placer Regional Transportation Agency (SPRTA) fee, which helps fund improvements to the impacted segments of SR 65.

The City of Roseville shall negotiate in good faith to enter into a fair share agreement with Placer County, Sutter County, Sacramento County and Caltrans regarding Amoruso Ranch fair share mitigation. In reaching an accommodation with these agencies and in order to better ensure an effective sub-regional approach to mitigating transportation-related impacts, the City may choose to include within the same agreements or Joint Powers Authority additional public agencies with whom it must work to mitigate transportation-related impacts. As the City strives to achieve agreement(s) with one or more of these other agencies, the City shall insist that "fair share" fee obligations be reciprocal, in the sense that the other local agencies, in accepting fair share contributions from the ARSP developers, must agree to require new development occurring in their own jurisdictions to make fair share contributions towards mitigating the significant effects of such development on the City's transportation network. Any such arrangement(s), with one or more agencies, shall account for existing inter-agency fee programs in order to avoid requiring redundant mitigation or fee payments exceeding fair share mitigation levels.

The City intends that its arrangement(s) with other agencies shall permit the participating agencies flexibility in providing cross-jurisdictional credits and reimbursements consistent with the general "fair share" mitigation standard, and require an updated model run incorporating the best available information in order to obtain the most accurate, up-to-date impact assessment feasible and to generate the most accurate, up-to-date estimates of regional fair share contributions. These arrangements, moreover, should also include provisions that allow for periodic updates to the traffic modeling on which fair share payment calculations depend in order to account for (i) newly approved projects cumulatively contributing to transportation-related impacts and that therefore should contribute to the funding of necessary improvements (e.g., the Curry Creek Community Plan in Placer County), (ii) additional physical improvements necessitated in whole or in part by newly approved projects, (iii) changing cost calculations for the construction of needed improvements based on changes in the costs of materials, labor, and other inputs. These impacts are considered significant and unavoidable because there is no assurance that the remaining funds necessary for construction will be collected, and the City of Roseville cannot assure the improvements will be constructed in a timely manner.

Figure ES-1 illustrates the planned circulation system in the vicinity of the Amoruso Ranch Specific Plan under existing plus project conditions. This figure shows the planned southerly extension of Westbrook Boulevard to Blue Oaks Boulevard and the two street connections to Sunset Boulevard West. It also shows the recommended traffic controls and lane configurations at study intersections along Sunset Boulevard



(A) Applicant Responsible

(B) Fair Share Responsibility

Planned Roadway Extension

Stop Sign

Signal

Recommended Lane

Note: this exhibit depicts the planned circulation system in the project vicinity. Refer to report for mitigations beyond the limits of this exhibit.

Figure ES-1

Existing Plus Project Circulation System

West and Fiddyment Road including a new traffic signal at the Sunset Boulevard West/Westbrook Boulevard intersection, which would be the applicant's responsibility to construct.

CUMULATIVE PLUS PROJECT CONDITIONS

The impacts of the Amoruso Specific Plan were analyzed for two distinct versions of the 2035 model (i.e., 2035 CIP and 2035 Cumulative).

2035 CIP Plus Project Conditions

The proposed project would cause the following significant impacts at City intersections:

AM Peak Hour

Woodcreek Oaks Blvd./McAnally Drive (LOS C to D)

Blue Oaks Blvd./Westbrook Boulevard (LOS C to E)

PM Peak Hour

Roseville Parkway/Gibson Drive (LOS D to E)

Blue Oaks Boulevard/Westbrook Boulevard (LOS C to F)

Baseline Road/Santucci Boulevard (LOS C to D)

Westbrook Boulevard/Vista Grande Ave. (LOS C to D)

Baseline Road/Westbrook Boulevard (LOS C to D)

Mitigation measures (consisting of modifications to planned CIP lane configurations) would improve operations at the Blue Oaks Boulevard/Westbrook Boulevard and Westbrook Boulevard/Vista Grande Avenue intersections to LOS C or better during the AM and PM peak hours. No feasible mitigation measures are available at the other four intersections shown in bold text. Therefore, impacts at those locations are considered significant and unavoidable. Thus, the list of LOS C exceptions for 2035 CIP Plus Amoruso Specific Plan conditions would need to be modified to include the four locations shown above in bold text.

Table ES-3 illustrates how the project would affect the overall percentage of signalized intersections operating at LOS C or better under 2035 CIP conditions. As shown, 78.4 percent of all signalized intersections in the City would continue to operate at LOS C or better during the PM peak hour which is consistent with the City's General Plan level of service policy, which states that a minimum of 70 percent of intersections in Roseville shall operate at LOS C or better.

Table ES-3:
City of Roseville Signalized Intersection Operations – 2035 CIP Plus Project Conditions (HCM Methodology)

Level of Service	2035 CIP No Project Conditions		2035 CIP Plus Project Conditions [1]		2035 CIP Plus Project Conditions with Mitigations	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
LOS A-C	89.5%	79.2%	89.4%	77.8%	89.8%	78.7%
LOS D	6.8%	10.0%	6.6%	11.1%	6.6%	10.6%
LOS E	2.8%	8.1%	3.1%	8.4%	2.7%	8.4%
LOS F	0.9%	2.7%	0.9%	2.7%	0.9%	2.2%

Notes: [1] Project adds five new signalized intersections that operate at LOS C or better.

The proposed project would cause the following significant impacts at intersections within and maintained by Placer County:

AM Peak Hour
-Cook-Riolo Road/PFE Road (LOS F operations exacerbated)
-N. Foothills Boulevard/Athens Avenue (LOS F operations exacerbated)

PM Peak Hour
-Cook-Riolo Road/PFE Road (LOS F operations exacerbated)
-N. Foothills Boulevard/Athens Avenue (LOS F operations exacerbated)
-Sunset Boulevard West/Fiddyment Road (LOS A to E)
-Fiddyment Road/Athens Avenue (LOS E to F)

The proposed project would cause the following significant impacts at roadways within and maintained by Placer County:

- Sunset Boulevard West between Fiddyment Road and Westbrook Boulevard (operations degrade from LOS A to E)
- Fiddyment Road between Athens Avenue and Sunset Boulevard West (LOS E to F operations and conditions exacerbated by a 0.13 v/c ratio increase).

Mitigation measures for the above impacts consist of project applicant fair share payments for roadway widenings, installing new traffic signals, and/or adding additional turn lanes as described on pages 144-147. Although improvements are available to restore operations to an acceptable level at each impacted location, the impacts are nonetheless considered significant and unavoidable because there is no assurance that the remaining funds necessary for construction will be collected, and the City of Roseville cannot assure the improvements will be constructed in a timely manner.

2035 Cumulative Plus Project Conditions

The 2035 Cumulative scenario builds on the 2035 CIP scenario by assuming partial build-out of Placer Ranch, the proposed Campus Oaks project, and the extension of Placer Parkway as a four-lane roadway westerly from Foothills Boulevard to Santucci Boulevard.

The proposed project would cause a cumulatively significant impact during the PM peak hour at the Blue Oaks Boulevard/Collector C (LOS C to D), Eureka Road/Taylor Road/I-80 EB Ramps (LOS D to E) and Blue Oaks Boulevard/Washington Boulevard/SR 65 SB Ramps (LOS D to E) intersections. No feasible mitigations are available at these intersections. Accordingly, these impacts are considered significant and unavoidable.

Table ES-4 shows how the project would affect the overall percentage of signalized intersections operating at LOS C or better in the City under 2035 Cumulative conditions. The proposed project would cause the overall percentage of intersections operating at LOS C or better during the AM peak hour to increase from 89.5 to 90.3 percent. The proposed project would cause the overall percentage of intersections operating at LOS C or better during the PM peak hour to increase from 79.2 to 79.6 percent.

Table ES-4:
City of Roseville Signalized Intersection Operations – 2035 Cumulative Plus Project Conditions

Level of Service	2035 Cumulative No Project Conditions		2035 Cumulative Plus Project Conditions [1]	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
LOS A-C	89.5%	79.2%	90.3%	79.6%
LOS D	8.1%	10.4%	7.5%	9.3%
LOS E	1.4%	7.2%	1.3%	8.0%
LOS F	1.0%	3.2%	0.9%	3.1%

Notes:
1. Project would add five new signalized intersections that operate at LOS C or better.

The proposed project would also cause a significant impact at two intersections outside of Roseville.

- The project applicant shall pay their fair share cost of installing a traffic signal at the N. Foothills Boulevard/Athens Avenue intersection.
- The project applicant shall pay their fair share cost of any capacity-enhancing improvements identified by Placer County at the Cook-Riolo Road/PFE Road intersection.

The project would cause significant freeway facility degradations (LOS E to F during the AM peak hour) on southbound SR 65 from Ferrari Ranch Road to Lincoln Boulevard and from Twelve Bridges Drive to Placer Parkway. Mitigation for this impact consists of a project applicant fair share payment as described below:

- The project applicant shall pay the Highway 65 JPA Fee and the South Placer Regional Transportation Agency (SPRTA) fee, which helps fund improvements to the impacted segments of SR 65.

The 2035 Cumulative scenario generally results in fewer impacts than the 2035 CIP scenario for two reasons. First, the 2035 Cumulative scenario includes the extension of Placer Parkway westerly to Santucci Boulevard, which provides additional roadway capacity adjacent to the project. Second, this scenario assumes partial build-out of Placer Ranch, which provides opportunities for shorter distance trips to/from the project.

1. UPDATE TO CITY OF ROSEVILLE TRAFFIC ANALYSIS PROCEDURES

This chapter describes the effects of three distinct changes in the approach the City of Roseville utilizes to analyze its existing and planned roadway system. These three changes consist of:

1. Replacing the *Interim Materials on Highway Capacity – Circular 212* (Transportation Research Board, 1980) methodology to analyze signalized intersections with the more state-of-the-practice *Highway Capacity Manual* (Transportation Research Board, 2000)[1] methodology.
2. Updating the 2025 CIP travel demand model to reflect a new 2035 CIP condition.
3. Expanding the General Plan level of service (LOS) policies to include weekday AM peak hour conditions, in addition to PM peak hour.

Each of these changes is described below.

SIGNALIZED INTERSECTION ANALYSIS METHODOLOGY

The City of Roseville has traditionally relied upon the *Interim Materials on Highway Capacity – Circular 212* (Transportation Research Board, 1980) methodology to analyze signalized intersections. The "Circular 212" methodology is a planning-level analysis tool that calculates an overall intersection LOS based on the volume-to-capacity ratio of critical turning movements. The City of Roseville has chosen to evaluate this and all future projects using the more state-of-the-practice *Highway Capacity Manual* (HCM) procedures for reasons described below.

There are several meaningful differences between the Circular 212 and HCM procedures. Whereas Circular 212 provides a LOS result that represents conditions for the entire peak hour, HCM procedures apply a peak hour factor to represent conditions during the busiest 15-minutes of the peak hour. The use of HCM-compliant micro-simulation models (such as SimTraffic being used in this study) account for the effects of vehicle spillbacks that can affect upstream intersections. These factors, among many others, help explain why intersection analysis results presented in this study may differ considerably from previous analysis results, which are based on Circular 212.

[1] The most recent version of the HCM was released in 2010. However, this study uses the older 2000 HCM because the Synchro software has several limitations that make it difficult to apply on a City-wide basis. Additionally, the application of the 2000 and 2010 HCM methodology is the same when the SimTraffic software is used.

Signalized intersections are analyzed using HCM procedures based on the Synchro software program. This program considers traffic volumes, lane configurations, signal timings, and other parameters, but does not directly consider the effects of adjacent intersections and queue spillbacks. The Synchro software program also allows analysts to evaluate intersections using the SimTraffic micro-simulation module. SimTraffic considers interactions between adjacent intersections, turn lane spillbacks, coordinated signal timing, and upstream/downstram bottlenecks. SimTraffic is preferable to use when operating conditions are near capacity, turn lane storage exceedance is common, and/or intersections are spaced closely together. Outside of these conditions, Synchro is generally appropriate for use. Given the above guidance, the following describes which analysis tools were used for which corridors during the AM and PM peak hours:

- For the AM peak hour, all intersections are analyzed using the Synchro model. As is reported later, nearly all signalized intersections within the City of Roseville experience greater delay during the PM peak hour versus the AM peak hour.
- For the PM peak hour, 33 percent of existing intersections (52 of 160 total) are analyzed using the SimTraffic micro-simulation component of the Synchro software program. The following specific corridors were analyzed using SimTraffic:
    - Roseville Parkway from Pleasant Grove Boulevard to Douglas Boulevard
    - Galleria Boulevard from Roseville Pkwy to Fairway Drive
    - Eureka Road from I-80 WB Ramps to Rocky Ridge Drive
    - Cirby Way from Foothills Boulevard to Riverside Avenue
    - Pleasant Grove Boulevard from Foothills Boulevard to Fairway Drive
    - Douglas Boulevard from Harding Boulevard to Eureka Road
    - Riverside Avenue from Cirby Way to Orlando Avenue
    - Blue Oaks Boulevard from Diamond Creek Boulevard to Washington Boulevard

The remaining 67 percent of intersections are analyzed using Synchro. Fehr & Peers used the existing signal timings to analyze all Roseville intersections.

Field observations indicate that ramp metering at the I-80/Eureka Road and I-80/Douglas Boulevard interchanges can affect adjacent surface street intersections during peak hours. Due to the challenges of modeling ramp meters (e.g., SimTraffic cannot model HOV bypass lanes and ramp metering rates change in response to traffic flows), their effects are not considered in this study.

Table 1 specifies the average delay range for each LOS category based on HCM procedures, and the volume-to-capacity (v/c) ratio range for each LOS category based on the Circular 212 methodology. The reported average delay values are rounded to the nearest second. The associated LOS is based on the second decimal point of the delay values. For instance, a signalized intersection with average delay of 34.85 would have a reported LOS of C, whereas a signalized intersection with average delay of 35.05 would have a reported LOS of D. However, the reported delay for both instances would be '35 seconds'.

Table 1:
Signalized Intersection Level of Service Thresholds

Level of Service	Signalized Intersections	
	Circular 212[1] (V/C Ratio)	**HCM[2] (Avg. Delay in Seconds per Vehicle)**
A	≤ 0.60	≤ 10.0
B	0.61 - 0.70	> 10.0 to 20.0
C	0.71 - 0.81	> 20.0 to 35.0
D	0.82 - 0.90	> 35.0 to 55.0
E	0.91 - 1.00	> 55.0 to 80.0
F	> 1.00	> 80.0

Notes:
1. Source: *Interim Materials on Highway Capacity – Circular 212*, Transportation Research Board, 1980.
2. Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Table 2 compares existing (2014) AM and PM peak hour LOS results at all signalized intersections in Roseville for the HCM versus Circular 212 analysis methodologies. Refer to separately bound Appendix A for technical calculations.

It should be noted that the City of Roseville requested that all signalized intersections in the City be renumbered to provide better overall organization. The numbering system sequentially numbers all existing and future signalized intersections starting from west to east along arterial streets starting from the north. As is shown in Table 2, this numbering system results in some gaps in numbering under existing conditions. However, the numbering is continuous under the future year scenarios. It should also be noted that several intersections within Downtown Roseville, which have a Pedestrian Overlay District designation are labeled as "P1", "P2", etc. These intersections are shown at the end of Table 2.

Table 2:
Circular 212 versus HCM Results comparison for Roseville Signalized Intersections – Existing Conditions

Intersection		AM Peak Hour		PM Peak Hour	
		Circular 212	HCM	Circular 212	HCM
6	Blue Oaks Blvd/Fiddyment Rd	A	B	A	B
7	Blue Oaks Blvd/Orchard View Rd	A	A	A	A
8	Blue Oaks Blvd/Del Webb Blvd	A	A	A	A
9	Blue Oaks Blvd/Crocker Ranch Rd	A	A	A	A
10	Blue Oaks Blvd/Diamond Creek Blvd	A	C	A	B
11	Blue Oaks Blvd/Woodcreek Oaks Blvd	A	C	A	D
12	Blue Oaks Blvd/Woodmeadow Dr	A	A	A	B
13	Blue Oaks Blvd/New Meadow Dr	A	A	A	B
15	Blue Oaks Blvd/Foothills Blvd	B	D	A	C
17	Blue Oaks Blvd/Washington Blvd	A	C	B	D
20	Pleasant Grove Blvd/Westbrook Blvd.	A	B	A	A
22	Market St/Pleasant Grove Blvd	A	B	A	B
23	Monument Dr/Pleasant Grove Blvd	A	B	A	B
25	Pleasant Grove Blvd/Fiddyment Rd	A	C	A	C
26	Pleasant Grove Blvd/Sun City Blvd	A	A	C	A
27	Pleasant Grove Blvd/Rose Creek Rd	A	A	C	A
28	Pleasant Grove Blvd/Michener Dr	A	A	A	A
29	Pleasant Grove Blvd/Woodcreek Oaks Blvd	A	C	A	C
30	Pleasant Grove Blvd/Country Club Dr	A	B	A	A
31	Pleasant Grove Blvd/Foothills Blvd	A	C	A	D
32	Pleasant Grove Blvd/Washington Blvd	A	C	A	D
33	Pleasant Grove Blvd/Hallissy Dr	A	B	A	C
34	Pleasant Grove Blvd/Roseville Pkwy	B	C	A	E
35	Highland Pointe Dr/Pleasant Grove Blvd	A	C	B	D
36	Pleasant Grove Blvd/Hwy-65 SB Ramps	A	B	B	B
37	Pleasant Grove Blvd/Hwy-65 NB Ramps	A	B	A	B
38	Fairway Dr/Pleasant Grove Blvd	A	C	A	D
39	Highland Park Dr/Pleasant Grove Blvd	A	B	A	C
49	Baseline Rd/Watt Ave	A	B	A	C
56	Baseline Rd/Fiddyment Rd	A	C	C	D
57	Baseline Rd/Junction Blvd	A	B	A	B
58	Baseline Rd/Woodcreek Oaks Blvd	A	C	A	C

Table 2:
Circular 212 versus HCM Results comparison for Roseville Signalized Intersections – Existing Conditions

Intersection		AM Peak Hour		PM Peak Hour	
		Circular 212	HCM	Circular 212	HCM
59	Baseline Rd/Foothills Blvd	B	C	B	D
60	HP-Central Dwy/Foothills Blvd	A	A	A	A
61	Roseville Pkwy/Washington Blvd	A	B	B	B
62	Trestle Rd/Roseville Pkwy	A	B	A	A
64	Roseville Pkwy/Chase Dr	A	A	B	B
65	Roseville Pkwy/Gibson Dr	A	B	B	B
66	West Mall/Roseville Pkwy	A	A	A	C
67	Roseville Pkwy/Reserve Dr	A	B	A	D
68	Roseville Pkwy/Galleria Blvd	A	C	A	D
69	Roseville Pkwy/Creekside Ridge Dr	A	A	A	D
70	E. Roseville Pkwy/Taylor Rd	B	C	A	E
71	E. Roseville Pkwy/N. Sunrise Ave	A	C	A	D
72	E. Roseville Pkwy/Secret Ravine Pkwy	A	B	B	C
73	Alexandra Dr/E. Roseville Pkwy	A	B	B	B
74	Rocky Ridge Dr/E. Roseville Pkwy	A	A	A	B
75	Orvietto Dr/Roseville Pkwy	A	B	A	C
76	Olympus Dr/Roseville Pkwy	A	B	A	C
77	Douglas Blvd/Roseville Pkwy	B	C	C	D
78	Village Dr/E. Roseville Pkwy	A	B	B	B
79	Eureka Rd/E. Roseville Pkwy	A	C	A	C
80	E. Roseville Pkwy/N. Cirby Way	A	A	A	A
81	E. Roseville Pkwy/Sierra College Blvd	A	C	A	C
82	Atlantic St/Yosemite St	A	B	A	B
83	Atlantic St/Tiger Way	A	B	A	B
84	Atlantic St/Wills Rd	A	B	A	B
85	Atlantic St/I-80 WB Ramps	A	A	A	B
86	Eureka Rd/Taylor Rd	C	C	B	D
87	Eureka Rd/N. Sunrise Ave	A	C	A	D
88	Eureka Rd/Rocky Ridge Dr	A	C	C	C
89	Lead Hill Blvd/Eureka Rd	A	B	A	C
90	Douglas Blvd/Eureka Road	A	C	B	D
91	Eureka Rd/Deer Valley Apts Dwy	C	B	A	A
92	Eureka Rd/Ashland Dr	A	B	A	A

Table 2:
Circular 212 versus HCM Results comparison for Roseville Signalized Intersections – Existing Conditions

Intersection		AM Peak Hour		PM Peak Hour	
		Circular 212	HCM	Circular 212	HCM
93	Eureka Rd/Sierra College Blvd	A	C	A	C
94	Douglas Blvd/Judah St	A	B	A	B
95	Douglas Blvd/Park Dr	A	A	A	A
96	Douglas Blvd/Keehner Ave	A	A	A	A
97	Douglas Blvd/Folsom Rd	A	C	A	B
98	Douglas Blvd/Harding Blvd	A	C	C	D
99	Douglas Blvd/I-80 WB Ramps	B	C	A	D
100	Douglas Blvd/I-80 EB Ramps	A	A	D	B
101	Douglas Blvd/North Sunrise Ave	A	C	D	E
102	Douglas Blvd/Santa Clara Dr	A	A	B	C
103	Douglas Blvd/Sierra Gardens Dr	A	B	A	D
104	Douglas Blvd/Target Dwy	A	A	B	C
105	Douglas Blvd/Rocky Ridge Drive	A	C	C	E
106	Douglas Blvd/Sierra College Blvd	B	D	C	D
107	Cirby Way/Roseville Rd	B	C	B	D
108	Cirby Way/Vernon St	B	C	C	C
109	Cirby Way/Lindsay Dr	B	A	B	A
110	Cirby Way/Melody Ln	A	B	B	A
111	Cirby Way/Riverside Ave	C	C	D	E
112	Cirby Way/Orlando Ave	A	B	B	B
113	Cirby Way/San Simeon Dr	A	A	A	A
114	Cirby Way/Sunrise Ave	C	D	D	E
115	Cirby Way/Oakridge Dr	A	B	A	B
116	Cirby Way/Parkview Dr	A	A	A	A
117	Cirby Way/Rocky Ridge Dr	A	C	C	C
118	Cirby Way/Champion Oaks Dr	A	A	B	A
119	Old Auburn Rd/Cirby Way	B	B	A	B
125	Lead Hill Blvd/Wal*Mart	A	A	A	A
131	Fiddyment Rd/Hayden Pkwy (North)	A	A	A	A
133	Hayden Pkwy (South)/Fiddyment Rd	A	A	A	A
134	Village Green Dr/Fiddyment Rd	A	B	A	B
141	Horncastle Ave/Woodcreek Oaks Blvd	A	B	A	B
142	Camino Capistrano/Woodcreek Oaks Blvd	A	B	A	B

Table 2:
Circular 212 versus HCM Results comparison for Roseville Signalized Intersections – Existing Conditions

Intersection		AM Peak Hour		PM Peak Hour	
		Circular 212	HCM	Circular 212	HCM
143	Canevari Dr/Woodcreek Oaks Blvd	A	B	A	B
144	McAnally Dr/Woodcreek Oaks Blvd	A	C	A	B
145	Trailee Ln/Woodcreek Oaks Blvd	A	B	B	B
146	Albertsons Dr/Foothills Blvd	A	B	A	A
147	HP-South Dwy/Foothills Blvd	A	C	B	C
149	Mistywood Dr/Foothills Blvd	A	A	A	A
150	McAnally Dr/Foothills Blvd	A	B	C	B
151	Junction Blvd/Foothills Blvd	A	C	A	C
152	Pilgrim Dr/Foothills Blvd	A	A	A	A
153	Vineyard Rd/Foothills Blvd	A	B	A	B
154	Denio Loop/Foothills Blvd	C	B	C	B
156	Hallissy Dr/Washington Blvd	A	A	A	A
158	Diamond Oaks Rd/Washington Blvd	A	B	A	B
159	Sawtell Rd/Washington Blvd	A	B	A	B
160	Junction Blvd/Washington Blvd	A	B	A	B
162	Cortina Cir/Fairway Dr	A	B	A	B
164	Fairway Dr/Target Dwy	A	A	A	B
165	Fairway Dr/Central Park Dr	A	B	A	B
166	Fairway Dr/Home Depot Dwy	A	A	A	C
167	Fairway Dr/Five Star Blvd	A	B	A	B
168	Highland Park/Stanford Ranch Rd	A	B	B	A
169	Fairway Dr/Stanford Ranch Rd	A	C	B	C
170	5 Star Blvd/Stanford Ranch Rd	A	B	A	D
171	Hwy-65 NB Ramps/Stanford Ranch	A	A	A	D
172	Hwy-65 SB Ramps/Galleria Blvd	A	A	E	C
173	JC Penny/Galleria Circle	A	B	A	B
174	Antelope Creek Dr/Galleria Blvd	A	A	A	C
175	Berry St/Galleria Blvd	A	B	C	B
176	Wills Rd/Harding Blvd	A	B	A	B
177	Lead Hill Blvd/Harding Blvd	A	B	A	C
178	Estates Dr/Harding Blvd	A	B	C	B
179	Roseville Square/Harding Blvd	A	B	A	C
180	Stone Point Dr/N. Sunrise Ave	A	A	A	A

Table 2:
Circular 212 versus HCM Results comparison for Roseville Signalized Intersections – Existing Conditions

Intersection		AM Peak Hour		PM Peak Hour	
		Circular 212	HCM	Circular 212	HCM
181	N. Sunrise Ave/Automall Dr	A	B	A	C
182	Lead Hill Blvd/N. Sunrise Ave	A	C	A	D
183	Sierra Gardens Dr/N. Sunrise Ave	A	B	A	C
184	Oak Ridge Dr/Sunrise Ave	A	A	A	A
185	Frances Dr/Sunrise Ave	A	A	A	A
186	Coloma Way/Sunrise Ave	A	B	A	B
187	Sun Tree Dr/Sunrise Ave	A	B	A	B
188	Kensington Dr/Sunrise Ave	A	A	A	A
189	Rocky Ridge Dr/Stone Point Dr	A	A	A	A
190	Lead Hill Blvd/Rocky Ridge Dr	A	B	A	C
191	Professional Dr/Rocky Ridge Dr	A	A	A	B
192	Meadowlark Way/Rocky Ridge Dr	A	A	A	A
193	McLaren Dr/Rocky Ridge Dr	A	A	A	A
194	Secret Ravine Pkwy/Sierra College	A	B	B	B
195	Miners Ravine Pkwy/Sierra College Blvd	A	A	A	A
196	Olympus Dr/Sierra College Blvd	A	C	A	B
197	Indigo Creek Apts Dwy/Sierra College Blvd	A	B	C	C
198	Old Auburn Rd/Sierra College Blvd	B	C	A	C
199	Olympus Dr/Europa St	A	B	A	A
200	Secret Ravine Pkwy/Scarborough Dr	A	B	A	B
203	I-80 WB Ramps/Riverside Ave	A	B	C	C
204	Orlando Ave/Riverside Ave	A	C	C	C
205	Junction Blvd/Stonecrest Dr	A	B	A	B
207	Junction Blvd/Woodcreek Oaks Blvd	A	B	C	B
208	Junction Blvd/Country Club Dr	A	C	A	B
209	Junction Blvd/Revere Dr	A	A	A	A
210	Junction Blvd/Americana Dr	A	B	A	A
211	Junction Blvd/Sawtell Rd	A	A	A	A
212	PFE Rd/Hilltop Cir	A	B	B	A
P1	Darling/Riverside (Located in POD)	A	B	A	B
P2	Vernon/Douglas (Located in POD)	A	C	A	C
P3	Vernon/Grant (Located in POD)	A	A	A	A
P4	Vernon/Judah (Located in POD)	A	A	A	A

Table 2:
Circular 212 versus HCM Results comparison for Roseville Signalized Intersections – Existing Conditions

Intersection		AM Peak Hour		PM Peak Hour	
		Circular 212	HCM	Circular 212	HCM
P5	Vernon/Lincoln (Located in POD)	A	B	A	B
P6	Main/Washington (Located in POD)	A	C	B	C
P7	Oak/Grant (Located in POD)	A	B	A	B
P8	Oak/Lincoln (Located in POD)	A	A	D	A

Notes:

1. Intersections located in Pedestrian Overlay District (POD) are exempt from City's LOS policies.
2. Traffic count data not available at the signalized HP South Dwy./Foothills Blvd. intersection. Results shown as LOS C or better based on field observations.
3. Refer to previous text of Circular 212 and HCM analysis methods.
4. The Oas Street/Washington Boulevard intersection was not analyzed as a signalized intersection. In April 2014, this signal was removed and replaced with a roundabout.

Source: Fehr & Peers, 2015

Table 3 displays the percentage of intersections during the AM and PM peak hours that operate at LOS C or better, LOS D, LOS E, and LOS F under the Circular 212 and HCM methodologies. During the AM peak hour, the Circular 212 and HCM methods result in similar overall results with 98 to 100 percent of intersections operating at LOS C or better. During the PM peak hour, 96 percent of intersections operate at LOS C using Circular 212, whereas 81 percent of intersections operate at LOS C using HCM methods. These percentages exclude intersections within the City's pedestrian overlay district, for which the City's LOS policies do not apply.

Table 3:
City of Roseville Signalized Intersection Operations Summary – Existing Conditions Using Circular 212 and HCM Methodologies

Level of Service	AM Peak Hour		PM Peak Hour	
	Circular 212 Methodology	HCM Methodology	Circular 212 Methodology	HCM Methodology
Total Intersections [1]	160	160	160	160
LOS A-C	160 (100%)	157 (98.1%)	154 (96%)	130 (81.1%)
LOS D	0 (0%)	3 (1.9%)	5 (3%)	24 (15%)
LOS E	0 (0%)	0 (0%)	1 (1%)	6 (3.9%)
LOS F	0 (0%)	0 (0%)	0 (0%)	0
Percent Operating at LOS D, E, or F	0%	1.9%	4%	18.9%

Notes:
1. Excludes the eight signalized intersections located in the City's Pedestrian Overlay District (POD).
Source: Fehr & Peers, 2015.

UPDATE FROM 2025 CIP TO 2035 CIP TRAVEL DEMAND MODEL

The LOS results included in the City's current General Plan Circulation Element are based on the use of the Circular 212 methodology to analyze intersections for a 2025 horizon year. This section describes how the transition to the HCM methodology and a 2035 horizon year would affect City-wide intersection LOS results. This comparison does not assume any development of the Amoruso Specific Plan.

Table 4 compares the 2025 CIP (using Circular 212 intersection analysis) and 2035 CIP (using HCM intersection analysis) scenarios for AM and PM peak hour conditions. Refer to separately bound Appendix C for technical calculations. This table shows that 18 intersections have been added by the City to the 2035 CIP list, which were not included in the 2025 CIP list.

Table 4:
Comparison of 2025 CIP and 2035 CIP Level of Services at Roseville Signalized Intersections

Intersection		2025 CIP (Circular 212 Method)				2035 CIP Conditions (HCM Method)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		V/C Ratio	LOS	V/C Ratio	LOS	Delay	LOS	Delay	LOS
1	Blue Oaks Blvd/Grasscreek Drive	Did Not Exist				15	B	15	B
2	Blue Oaks Blvd/Westbrook Blvd	0.82	D	0.8	C	28	C	25	C
3	Blue Oaks Blvd/Creekview Plaza	Did Not Exist				13	B	19	B
4	Blue Oaks Blvd/West Park Drive	Did Not Exist				13	B	12	B
5	Blue Oaks Blvd/Hayden Pkwy	0.62	B	0.57	A	31	C	25	C
6	Blue Oaks Blvd/Fiddyment Rd	0.75	C	0.76	C	41	D	40	D
7	Blue Oaks Blvd/Orchard View Rd	0.7	B	0.65	B	9	A	9	A
8	Blue Oaks Blvd/Del Webb Blvd	0.65	B	0.66	B	13	B	10	B
9	Blue Oaks Blvd/Crocker Ranch Rd	0.93	E	0.79	C	18	B	24	C
10	Blue Oaks Blvd/Diamond Creek Blvd	0.93	E	1.03	F	21	C	59	E
11	Blue Oaks Blvd/Woodcreek Oaks Blvd	1.17	F	0.71	C	59	E	36	D
12	Blue Oaks Blvd/Wood Meadow Dr	0.72	C	0.73	C	14	B	20	B
13	Blue Oaks Blvd/New Meadow Dr	0.98	E	0.72	C	12	B	12	B
14	Blue Oaks Blvd/Collector C	Did Not Exist				14	B	48	D
15	Blue Oaks Blvd/Foothills Blvd	1.28	F	1.35	F	34	C	112	F
16	Blue Oaks Blvd/Fidelity Way	Did Not Exist				4.8	A	41	D
17	Blue Oaks Blvd/Washington Blvd	0.58	A	0.66	B	36	D	64	E
18	Pleasant Grove Blvd/Santucci Blvd	0.48	A	0.73	C	19	B	21	C
19	Pleasant Grove Blvd/Silver Spruce Dr	0.32	A	0.33	A	9	A	9	A
20	Pleasant Grove Blvd/Westbrook Blvd	0.73	C	0.85	D	24	C	24	C
21	Pleasant Grove Blvd/Sierra Trail Dr	Did Not Exist				18	B	12	B
22	Pleasant Grove Blvd/Market St	0.6	A	0.62	B	21	C	22	C
23	Pleasant Grove Blvd/Monument Dr	0.53	A	0.5	A	15	B	14	B
24	Pleasant Grove Blvd/Upland Dr	0.65	B	0.65	B	11	B	12	B
25	Pleasant Grove Blvd/Fiddyment Rd	0.81	C	1.05	F	60	E	48	D
26	Pleasant Grove Blvd/Sun City Blvd	0.75	C	0.7	B	8	A	7	A
27	Pleasant Grove Blvd/Rose Creek Rd	0.7	B	0.81	C	5	A	6	A
28	Pleasant Grove Blvd/Michener Dr	0.74	C	0.81	C	6	A	9	A
29	Pleasant Grove Blvd/Woodcreek Oaks	0.75	C	0.87	D	25	C	39	D
30	Pleasant Grove Blvd/Country Club Dr	0.79	C	0.62	B	20	C	10	B
31	Pleasant Grove Blvd/Foothills Blvd	0.94	E	1	E	49	D	68	E
32	Pleasant Grove Blvd/Washington Blvd	0.87	D	0.92	E	35	C	39	D
33	Pleasant Grove Blvd/Hallissy Dr	0.75	C	0.82	D	11	B	29	C
34	Pleasant Grove Blvd/Roseville Pkwy	0.94	E	1.22	F	81	F	124	F

Table 4:
Comparison of 2025 CIP and 2035 CIP Level of Services at Roseville Signalized Intersections

Intersection		2025 CIP (Circular 212 Method)				2035 CIP Conditions (HCM Method)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		V/C Ratio	LOS	V/C Ratio	LOS	Delay	LOS	Delay	LOS
35	Highland Pointe Dr/Pleasant Grove	0.42	A	0.84	D	21	C	130	F
36	Pleasant Grove Blvd/Hwy-65 SB	0.42	A	0.71	C	10	A	14	B
37	Pleasant Grove Blvd/Hwy-65 NB	0.52	A	0.76	C	12	B	22	C
38	Fairway Dr/Pleasant Grove Blvd	0.51	A	0.95	E	36	D	91	F
39	Highland Park Dr/Pleasant Grove Blvd	0.43	A	0.56	A	19	B	25	C
40	Vista Grande Blvd/Santucci Blvd	0.43	A	0.4	A	12	B	18	B
41	Vista Grande Blvd/Silver Spruce Dr	0.45	A	0.42	A	13	B	14	B
42	Vista Grande Blvd/Westbrook Blvd	0.42	A	0.39	A	22	C	35	C
43	Vista Grande Blvd/Vista Park Dr	0.42	A	0.51	A	14	B	26	C
44	Vista Grande Blvd/Market St	0.76	C	0.8	C	15	B	18	B
45	Vista Grande Blvd/Monarch Grove St	0.19	A	0.22	A	22	C	17	B
46	Vista Grande Blvd/Upland Dr	0.57	A	0.58	A	16	B	19	B
47	Westhills Dr/Fiddyment Rd	0.76	C	0.86	D	46	D	39	D
48	Baseline Rd/Regional Park Access	0.52	A	0.59	A	14	B	17	B
49	Baseline Rd/Santucci Blvd	0.34	A	0.4	A	29	C	35	C
50	Baseline Rd/West Shopping Center	0.31	A	0.34	A	12	B	15	B
51	Baseline Rd/Westbrook Blvd	0.43	A	0.7	B	30	C	35	C
52	Baseline Rd/Central Shopping Center	0.46	A	0.64	B	6	A	6	A
53	Baseline Rd/Market St	0.31	A	0.33	A	18	B	17	B
54	Baseline Rd/East Shopping Center	0.49	A	0.58	A	10	B	15	B
55	Baseline Rd/Upland Dr	0.32	A	0.38	A	8	A	10	A
56	Baseline Rd/Fiddyment Rd	0.81	C	0.97	E	41	D	47	D
57	Baseline Rd/Junction Blvd	0.62	B	0.87	D	23	C	16	B
58	Baseline Rd/Woodcreek Oaks Blvd	0.94	E	0.89	D	58	E	38	D
59	Baseline Rd/Foothills Blvd	1.23	F	0.85	D	71	E	38	D
60	HP-Main Dwy/Foothills Blvd	0.83	D	0.87	D	29	C	45	D
61	Roseville Pkwy/Washington Blvd	0.66	B	0.77	C	27	C	28	C
62	Trestle Rd/Roseville Pkwy	0.52	A	0.65	B	9	A	11	B
63	Roseville Pkwy/Gibson Drive (w)	1.04	F	0.86	D	38	D	57	E
64	Roseville Pkwy/Chase Dr	0.61	B	0.83	D	6	A	23	C
65	Roseville Pkwy/Gibson Dr	0.58	A	0.84	D	16	B	54	D
66	West Mall/Roseville Pkwy	0.47	A	0.6	A	6	A	19	B
67	Roseville Pkwy/Reserve Dr	0.53	A	0.82	D	25	C	59	E
68	Roseville Pkwy/Galleria Blvd	0.68	B	1.03	F	38	D	71	E

Table 4:
Comparison of 2025 CIP and 2035 CIP Level of Services at Roseville Signalized Intersections

Intersection		2025 CIP (Circular 212 Method)				2035 CIP Conditions (HCM Method)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		V/C Ratio	LOS	V/C Ratio	LOS	Delay	LOS	Delay	LOS
69	Roseville Pkwy/Creekside Ridge Dr	0.52	A	0.81	C	11	B	25	C
70	E. Roseville Pkwy/Taylor Rd	0.89	D	0.82	D	46	D	63	E
71	E. Roseville Pkwy/N. Sunrise Ave	0.91	E	0.93	E	21	C	58	E
72	E. Roseville Pkwy/Secret Ravine Pkwy	0.75	C	0.74	C	20	B	45	D
73	Alexandra Dr/E. Roseville Pkwy	0.62	B	0.6	A	9	A	8	A
74	Rocky Ridge Dr/E. Roseville Pkwy	0.38	A	0.59	A	8	A	10	B
75	Orvietto Dr/Roseville Pkwy	0.48	A	0.65	B	20	B	20	B
76	Olympus Dr/Roseville Pkwy	0.61	B	0.61	B	12	B	21	C
77	Douglas Blvd/Roseville Pkwy	0.69	B	0.74	C	48	D	62	E
78	Village Dr/E. Roseville Pkwy	0.49	A	0.51	A	19	B	20	C
79	Eureka Rd/E. Roseville Pkwy	0.63	B	0.7	B	27	C	35	C
80	E. Roseville Pkwy/N. Cirby Way	0.53	A	0.5	A	6	A	8	A
81	E. Roseville Pkwy/Sierra College Blvd	0.59	A	0.79	C	25	C	36	D
82	Atlantic St/Yosemite St	0.62	B	0.69	B	18	B	15	B
83	Atlantic St/Tiger Way	0.46	A	0.48	A	17	B	28	C
84	Atlantic St/Wills Rd	0.81	C	0.77	C	14	B	13	B
85	Atlantic St/I-80 WB Ramps	0.25	A	0.56	A	5	A	34	C
86	Eureka Rd/Taylor Rd	0.87	D	0.96	E	28	C	54	D
87	Eureka Rd/N. Sunrise Ave	0.55	A	0.77	C	20	B	51	D
88	Rocky Ridge Dr/Eureka Rd	0.38	A	0.74	C	22	C	28	C
89	Lead Hill Blvd/Eureka Rd	0.4	A	0.54	A	23	C	23	C
90	Douglas Blvd/Eureka Road	0.58	A	0.67	B	34	C	62	E
91	Deer Valley Apts Dwy/Eureka Rd	0.5	A	0.41	A	13	B	9	A
92	Eureka Rd/Ashland Dr	0.41	A	0.44	A	12	B	11	B
93	Eureka Rd/Sierra College Blvd	0.66	B	0.57	A	32	C	28	C
94	Douglas Blvd/Judah St	0.29	A	0.5	A	9	A	21	C
95	Douglas Blvd/Park Dr	0.39	A	0.41	A	9	A	9	A
96	Douglas Blvd/Keehner Ave	0.57	A	0.49	A	9	A	10	A
97	Douglas Blvd/Folsom Rd	0.57	A	0.63	B	18	B	21	C
98	Douglas Blvd/Harding Blvd	0.7	B	0.97	E	53	D	56	E
99	Douglas Blvd/I-80 WB Ramps	0.64	B	0.8	C	35	C	72	E
100	Douglas Blvd/I-80 EB Ramps	0.44	A	0.67	B	11	B	9	A
101	Douglas Blvd/North Sunrise Ave	0.71	C	0.9	D	28	C	60	E
102	Douglas Blvd/Santa Clara Dr	0.57	A	0.71	C	17	B	30	C

Table 4:
Comparison of 2025 CIP and 2035 CIP Level of Services at Roseville Signalized Intersections

Intersection		2025 CIP (Circular 212 Method)				2035 CIP Conditions (HCM Method)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		V/C Ratio	LOS	V/C Ratio	LOS	Delay	LOS	Delay	LOS
103	Douglas Blvd/Sierra Gardens Dr	0.53	A	0.68	B	9	A	32	C
104	Douglas Blvd/Target Dwy	0.44	A	0.69	B	9	A	33	C
105	Douglas Blvd/Rocky Ridge Drive	0.69	B	0.83	D	30	C	49	D
106	Douglas Blvd/Sierra College Blvd	1.02	F	0.87	D	37	D	41	D
107	Cirby Way/Foothills Blvd	0.93	E	1.11	F	85	F	69	E
108	Cirby Way/Vernon St	0.93	E	1.3	F	43	D	73	E
109	Cirby Way/Lindsay Dr	0.86	D	0.94	E	19	B	7	A
110	Cirby Way/Melody Ln	0.58	A	0.62	B	15	B	13	B
111	Cirby Way/Riverside Ave	0.53	A	1.16	F	49	D	145	F
112	Cirby Way/Orlando Ave	0.66	B	0.89	D	15	B	24	C
113	Cirby Way/San Simeon Dr	0.62	B	0.65	B	11	B	10	B
114	Cirby Way/Sunrise Ave	0.76	C	1.09	F	42	D	65	E
115	Cirby Way/Oakridge Dr	0.59	A	0.71	C	17	B	24	C
116	Cirby Way/Parkview Dr	0.52	A	0.53	A	7	A	5	A
117	Cirby Way/Rocky Ridge Dr	0.44	A	0.64	B	18	B	32	C
118	Cirby Way/Champion Oaks Dr	0.53	A	0.52	A	12	B	10	A
119	Old Auburn Rd/Cirby Way	0.75	C	0.74	C	20	B	15	B
120	Parkway One/Westbrook Blvd	0.42	A	0.4	A	21	C	18	B
121	Nobo Dr/Westbrook Blvd	0.54	A	0.52	A	11	B	10	A
122	N Brookstone Drive/Westbrook Blvd	Did Not Exist				9	A	7	A
123	S Brookstone Dr/Westbrook Blvd	Did Not Exist				6	A	8	A
124	Octave Avenue/Westbrook Blvd	Did Not Exist				15	B	11	B
125	Lead Hill Blvd/Wal*Mart	0.17	A	0.4	A	4	A	9	A
126	Solaire Dr/Westbrook Blvd	0.32	A	0.41	A	14	B	12	B
127	Federico Dr/Westbrook Blvd	0.67	B	0.78	C	17	B	17	B
128	Sierra Glen Dr/Westbrook Blvd	0.08	A	0.06	A	6	A	4	A
129	Sierra Village Dr/Westbrook Blvd	0.45	A	0.58	A	16	B	17	B
130	Angus Road/Fiddyment Road	Did Not Exist				27	C	33	C
131	Hayden Pkwy (North)/Fiddyment Rd	0.38	A	0.44	A	18	B	23	C
132	Fiddyment Rd/Fiddyment Ranch EW	0.57	A	0.61	B	11	B	17	B
133	Hayden Pkwy (South)/Fiddyment Rd	0.51	A	0.55	A	10	B	12	B
134	Village Green Dr/Fiddyment Rd	0.64	B	0.67	B	20	B	18	B
135	Westlake Dr/Fiddyment Rd	0.42	A	0.39	A	9	A	6	A
136	San Fernando Drive/Fiddyment Road	Did Not Exist				13	B	19	B

Table 4:
Comparison of 2025 CIP and 2035 CIP Level of Services at Roseville Signalized Intersections

Intersection		2025 CIP (Circular 212 Method)				2035 CIP Conditions (HCM Method)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		V/C Ratio	LOS	V/C Ratio	LOS	Delay	LOS	Delay	LOS
137	Northpark Dr/Woodcreek Oaks Blvd	0.33	A	0.36	A	20	B	19	B
138	Parkside Way/Woodcreek Oaks Blvd	0.5	A	0.49	A	25	C	14	B
139	Painted Desert Dr/Woodcreek Oaks	Did Not Exist				18	B	23	C
140	Crimson Drige Dr/Woodcreek Oaks	Did Not Exist				30	C	19	B
141	Horncastle Ave/Woodcreek Oaks Blvd	0.62	B	0.57	A	13	B	12	B
142	Camino Capistrano/Woodcreek Oaks	Did Not Exist				18	B	14	B
143	Canevari Dr/Woodcreek Oaks Blvd	0.55	A	0.69	B	14	B	20	B
144	McAnally Dr/Woodcreek Oaks Blvd	0.92	E	0.73	C	34	C	28	C
145	Trailee Ln/Woodcreek Oaks Blvd	0.65	B	0.49	A	16	B	15	B
146	Albertsons Dr/Foothills Blvd	0.53	A	0.66	B	17	B	21	C
147	HP-South Dwy/Foothills Blvd	0.8	C	0.55	A	9	A	15	B
148	NEC/Foothills Blvd	0.93	E	0.72	C	29	C	24	C
149	Mistywood Dr/Foothills Blvd	0.74	C	0.57	A	11	B	13	B
150	McAnally Dr/Foothills Blvd	0.81	C	0.9	D	16	B	31	C
151	Junction Blvd/Foothills Blvd	0.81	C	0.83	D	35	C	38	D
152	Pilgrim Dr/Foothills Blvd	0.5	A	0.59	A	8	A	7	A
153	Vineyard Rd/Foothills Blvd	0.77	C	0.84	D	25	C	28	C
154	Denio Loop/Foothills Blvd	0.62	B	0.57	A	12	B	13	B
155	Freedom Way/Washington Blvd	Did Not Exist				23	C	34	C
156	Hallissy Dr/Washington Blvd	0.61	B	0.47	A	6	A	6	A
157	Industrial Blvd/Washington Blvd	0.57	A	0.68	B	11	B	27	C
158	Diamond Oaks Rd/Washington Blvd	0.68	B	0.77	C	12	B	19	B
159	Sawtell Rd/Washington Blvd	0.55	A	0.82	D	10	B	14	B
160	Junction Blvd/Washington Blvd	0.49	A	1.01	F	19	B	26	C
161	All American City Blvd/Washington	0.51	A	0.57	A	15	B	18	B
162	Cortina Cir/Fairway Dr	0.26	A	0.46	A	17	B	18	B
163	High School Road/Westpark Dr.	Did Not Exist				19	B	7	A
164	Fairway Dr/Target Dwy	0.57	A	0.44	A	10	A	12	B
165	Fairway Dr/Central Park Dr	0.39	A	0.53	A	11	B	19	B
166	Fairway Dr/Home Depot Dwy	0.48	A	0.52	A	10	A	27	C
167	Fairway Dr/Five Star Blvd	0.42	A	0.44	A	11	B	21	C
168	Highland Park/Stanford Ranch Rd	0.38	A	0.54	A	13	B	12	B
169	Fairway Dr/Stanford Ranch Rd	0.69	B	0.66	B	28	C	32	C
170	5 Star Blvd/Stanford Ranch Rd	0.5	A	0.62	B	19	B	48	D

Table 4:
Comparison of 2025 CIP and 2035 CIP Level of Services at Roseville Signalized Intersections

Intersection		2025 CIP (Circular 212 Method)				2035 CIP Conditions (HCM Method)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		V/C Ratio	LOS	V/C Ratio	LOS	Delay	LOS	Delay	LOS
171	Hwy-65 NB Ramps/Stanford Ranch	0.58	A	0.86	D	4	A	24	C
172	Hwy-65 SB Ramps/Galleria Blvd	0.3	A	0.83	D	62	E	37	D
173	JC Penny/Galleria Circle	Did Not Exist				13	B	15	B
174	Antelope Creek Dr/Galleria Blvd	0.49	A	0.66	B	13	B	59	E
175	Berry St/Galleria Blvd	0.58	A	0.85	D	16	B	25	C
176	Wills Rd/Harding Blvd	0.71	C	0.79	C	18	B	19	B
177	Lead Hill Blvd/Harding Blvd	0.57	A	0.79	C	17	B	30	C
178	Estates Dr/Harding Blvd	0.47	A	0.72	C	19	B	23	C
179	Roseville Square/Harding Blvd	0.34	A	0.62	B	12	B	22	C
180	Stone Point Dr/N. Sunrise Ave	0.34	A	0.59	A	10	A	13	B
181	N. Sunrise Ave/Automall Dr	0.31	A	0.53	A	18	B	28	C
182	Lead Hill Blvd/N. Sunrise Ave	0.42	A	0.74	C	23	C	33	C
183	Sierra Gardens Dr/N. Sunrise Ave	0.39	A	0.62	B	15	B	22	C
184	Oak Ridge Dr/Sunrise Ave	0.38	A	0.46	A	6	A	8	A
185	Frances Dr/Sunrise Ave	0.61	B	0.61	B	5	A	6	A
186	Coloma Way/Sunrise Ave	0.63	B	0.74	C	18	B	18	B
187	Sun Tree Dr/Sunrise Ave	0.63	B	0.7	B	10	B	19	B
188	Kensington Dr/Sunrise Ave	0.6	A	0.92	E	8	A	28	C
189	Rocky Ridge Dr/Stone Point Dr	0.08	A	0.26	A	4	A	8	A
190	Lead Hill Blvd/Rocky Ridge Dr	0.37	A	0.66	B	17	B	25	C
191	Professional Dr/Rocky Ridge Dr	0.77	C	0.67	B	9	A	13	B
192	Meadowlark Way/Rocky Ridge Dr	0.69	B	0.6	A	3	A	7	A
193	McLaren Dr/Rocky Ridge Dr	0.66	B	0.5	A	8	A	7	A
194	Secret Ravine Pkwy/Sierra College	0.62	B	0.59	A	14	B	25	C
195	Miners Ravine Pkwy/Sierra College	0.58	A	0.45	A	12	B	14	B
196	Olympus Dr/Sierra College Blvd	0.74	C	0.55	A	22	C	26	C
197	Indigo Creek Apts Dwy/Sierra College	0.43	A	0.79	C	21	C	27	C
198	Old Auburn Rd/Sierra College Blvd	0.66	B	0.79	C	30	C	28	C
199	Olympus Dr/Europa St	0.27	A	0.2	A	8	A	6	A
200	Secret Ravine Pkwy/Scarborough Dr	0.44	A	0.33	A	14	B	13	B
201	Secret Ravine Pkwy/Alexandra Dr	0.14	A	0.21	A	9	A	9	A
202	Convention Center Dr/Gibson Dr	0.47	A	0.71	C	61	E	19	B
203	I-80 WB Ramps/Riverside Ave	0.55	A	0.63	B	18	B	81	F
204	Orlando Ave/Riverside Ave	0.62	B	0.85	D	33	C	74	E

Table 4:
Comparison of 2025 CIP and 2035 CIP Level of Services at Roseville Signalized Intersections

Intersection		2025 CIP (Circular 212 Method)				2035 CIP Conditions (HCM Method)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		V/C Ratio	LOS	V/C Ratio	LOS	Delay	LOS	Delay	LOS
205	Junction Blvd/Stonecrest Dr	0.77	C	0.57	A	27	C	14	B
206	Junction Blvd/Park Regency Dr	0.77	C	0.64	B	27	C	19	B
207	Junction Blvd/Woodcreek Oaks Blvd	0.59	A	0.68	B	20	C	25	C
208	Junction Blvd/Country Club Dr	0.9	D	0.76	C	33	C	31	C
209	Junction Blvd/Revere Dr	0.65	B	0.66	B	4	A	7	A
210	Junction Blvd/Americana Dr	0.71	C	0.61	B	12	B	8	A
211	Junction Blvd/Sawtell Rd	0.71	C	0.7	B	10	A	11	B
212	PFE Rd/Hilltop Cir	0.3	A	0.45	A	12	B	14	B
213	Solaire Dr/Santucci Blvd	0.48	A	0.74	C	19	B	18	B
214	Federico Dr/Santucci Rd	0.53	A	0.58	A	19	B	19	B
215	Sierra Village Dr/Santucci Blvd	0.3	A	0.33	A	18	B	23	C
216	Hayden Pkwy./Holt Pkwy.	Does Not Exist				15	B	15	B
217	Alantown Dr/Industrial Ave	0.92	E	0.82	D	27	C	18	B
218	Freedom Way/Industrial Avenue	Did Not Exist				4	A	5	A
219	Pleasant Grove Blvd/La Sierra Drive	Did Not Exist				8	A	9	A
225	Secret Ravine Pkwy/Medical Plaza	Did Not Exist				30	C	23	C
226	High School Road/Hayden Pkwy	Did Not Exist				22	C	25	C
P1	Darling/Riverside (located in POD)	0.67	B	0.64	B	22	C	20	B
P2	Vernon/Douglas (located in POD)	0.39	A	0.66	B	25	C	47	D
P3	Vernon/Grant (located in POD)	0.43	A	0.57	A	6	A	7	A
P4	Vernon/Judah (located in POD)	0.36	A	0.6	A	5	A	9	A
P5	Vernon/Lincoln (located in POD)	0.49	A	0.98	E	13	B	32	C
P6	Main/Washington (located in POD)	0.55	A	0.83	D	24	C	38	D
P7	Oak/S Grant (located in POD)	Did Not Exist				7	A	11	B
P8	Oak /Lincoln (located in POD)	Did Not Exist				17	B	20	C

Notes:
1. 2025 CIP analyzed using Circular 212 methodology. 2035 CIP analyzed using HCM procedures.
2. Both scenarios assume the Amoruso Specific Plan is not developed.
3. 2025 CIP results are obtained from the *Final Transportation Impact Study for the City of Roseville Hotel/Conference Center* (Fehr & Peers, March 18, 2014), which is the most recent 2025 CIP analysis to be included in an EIR that was certified by the City.
4. Intersections located in Pedestrian Overlay District (POD) are exempt from the City's LOS policies.

Source: Fehr & Peers, 2015.

Table 5 displays the percentage of intersections during the AM and PM peak hours that operate at LOS C or better, LOS D, LOS E, and LOS F under 2025 CIP conditions with the Circular 212 methodology and under 2035 CIP conditions with the HCM methodology. During the AM peak hour, the Circular 212 and HCM methods result in similar overall results with about 88 to 90 percent of intersections operating at LOS C or better. Similarly, overall operations during the PM peak hour are comparable with about 78 to 79 percent of intersections operating at LOS C or better. However, as noted in Table 4, the use of one methodology versus the other results in many instances where an individual intersection LOS change occurs.

Table 5:
City of Roseville Signalized Intersection Operations Summary – 2025 CIP and 2035 CIP Conditions

Level of Service	2025 CIP Conditions (Circular 212 Method)		2035 CIP Conditions (HCM Method)	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Total Intersections	203	203	221	221
LOS A-C	179 (88%)	158 (77.8%)	198 (89.5%)	175 (79.2%)
LOS D	7 (3%)	26 (13%)	15 (7%)	22 (10%)
LOS E	12 (6%)	10 (5%)	6 (3%)	18 (8%)
LOS F	5 (3%)	9 (4%)	2 (1%)	6 (3%)
Percent Operating at LOS D, E, or F	12%	22%	11.5%	20.8%

Notes:
1. Excludes the eight signalized intersections located in the City's Pedestrian Overlay District (POD).

Source: Fehr & Peers, 2015.

IMPLICATIONS OF CHANGES ON CITY OF ROSEVILLE GENERAL PLAN

Below is a list of the 45 intersections, for which the City Council has acknowledged that PM peak hour operations will be worse than LOS C under 2025 conditions using the Circular 212 intersection analysis method (projected 2025 LOS is shown in parentheses). These results are obtained from the *Final Transportation Impact Study for the City of Roseville Hotel/Conference Center* (Fehr & Peers, March 18, 2014). By virtue of the City Council approving that project and certifying its EIR, the following exceptions to the City's LOS C standard have been granted for PM peak hour conditions.

- Baseline Road/Fiddyment Road (LOS E)
- Blue Oaks Boulevard/Diamond Creek Blvd. (LOS F)
- Junction Boulevard/Washington Boulevard (LOS E)
- Pleasant Grove Boulevard/Fairway Drive (LOS E)

- Blue Oaks Boulevard/Foothills Boulevard (LOS F)
- Cirby Way/Sunrise Avenue (LOS F)
- Cirby Way/Foothills Boulevard (LOS F)
- Cirby Way/Northridge Drive (LOS E)
- Cirby Way/Orlando Avenue (LOS D)
- Cirby Way/Riverside Avenue (LOS F)
- Cirby Way/Vernon Street (LOS F)
- Douglas Boulevard/Rocky Ridge Drive (LOS D)
- Douglas Boulevard/Sunrise Avenue (LOS D)
- Douglas Boulevard/Harding Boulevard (LOS E)
- Douglas Boulevard/Sierra College Boulevard (LOS D)
- Foothills Boulevard/Baseline Road (LOS D)
- Foothills Boulevard/Roseville Parkway/HP Dr. (LOS D)
- Foothills Boulevard/Junction Boulevard (LOS D)
- Foothills Boulevard /McAnally Drive (LOS D)
- Foothills Boulevard/Pleasant Grove Boulevard (LOS E)
- Foothills Boulevard/Vineyard Road (LOS D)
- Galleria Boulevard/Berry Street (LOS D)
- Galleria Boulevard/Roseville Parkway (LOS F)
- Junction Boulevard/Baseline Road (LOS D)
- Pleasant Grove Boulevard/Fiddyment Road (LOS F)
- Pleasant Grove Boulevard/Roseville Parkway (LOS F)
- Pleasant Grove Blvd./Highland Pointe Dr. (LOS D)
- Pleasant Grove Blvd./Washington Boulevard (LOS E)
- Pleasant Grove Blvd./Woodcreek Oaks Blvd. (LOS D)
- Roseville Parkway/Chase Drive (LOS D)
- Roseville Parkway/Gibson Drive (LOS D)
- Roseville Parkway/North Sunrise (LOS E)
- Roseville Parkway/Reserve Drive (LOS D)
- Roseville Parkway/Taylor (LOS D)
- Sunrise Avenue/Sandringham Drive (LOS E)
- Washington Blvd./Sawtell Road (LOS D)
- Baseline Road/Woodcreek Oaks Blvd. (LOS D)
- Stanford Ranch Road/SR 65 NB Ramps (LOS D)
- Galleria Boulevard/SR 65 SB Ramps (LOS D)
- Taylor Road/Eureka Rd/I-80 EB Off-Ramp (LOS E)
- Riverside Avenue/Orlando/I-80 EB Off-Ramp (LOS D)
- Fiddyment Road/Westhills Drive (LOS D)
- Pleasant Grove Blvd./Westbrook Blvd. (LOS D)
- Alantown Drive/Industrial Avenue (LOS D)
- Roseville Parkway/Gibson Drive West (LOS D)

The list of intersections that are exempted from the LOS C requirement would change if the City were to adopt a new 2035 CIP travel demand model and the use of the HCM methodology for intersection analysis for purposes of its General Plan LOS policy.

Below is a list of all 46 intersections that would operate at LOS D or worse during the PM peak hour under the 2035 CIP conditions (using HCM intersection analysis methods). This list does not assume development of the Amoruso Specific Plan.

- Baseline Road/Fiddyment Road (LOS D)
- Blue Oaks Boulevard/Fiddyment Road (LOS D)
- Blue Oaks Boulevard/Diamond Creek Blvd. (LOS E)
- Blue Oaks Boulevard/Foothills Boulevard (LOS F)
- Blue Oaks Boulevard/Woodcreek Oaks Blvd. (LOS D)
- Blue Oaks Boulevard/Fidelity Way (LOS D)
- Blue Oaks Boulevard/Collector C (LOS D)
- Cirby Way/Sunrise Avenue (LOS E)
- Cirby Way/Foothills Boulevard (LOS E)
- Cirby Way/Riverside Avenue (LOS F)
- Galleria Boulevard/Roseville Parkway (LOS E)
- Pleasant Grove Boulevard/Fairway Drive (LOS F)
- Pleasant Grove Boulevard/Fiddyment Road (LOS D)
- Pleasant Grove Boulevard/Roseville Parkway (LOS F)
- Pleasant Grove Blvd./Highland Pointe Dr. (LOS F)
- Pleasant Grove Blvd./Washington Boulevard (LOS D)
- Pleasant Grove Blvd./Woodcreek Oaks Blvd. (LOS D)
- Roseville Parkway/Gibson Drive (LOS D)
- Roseville Parkway/North Sunrise (LOS E)
- Roseville Parkway/Reserve Drive (LOS E)

- Cirby Way/Vernon Street (LOS E)
- Douglas Boulevard/Eureka Road (LOS E)
- Douglas Boulevard/Rocky Ridge Drive (LOS D)
- Douglas Boulevard/Sunrise Avenue (LOS E)
- Douglas Boulevard/Roseville Parkway (LOS E)
- Douglas Boulevard/Harding Boulevard (LOS E)
- Douglas Boulevard/Sierra College Boulevard (LOS D)
- Eureka Road/North Sunrise Avenue (LOS D)
- Foothills Boulevard/Baseline Road (LOS D)
- Foothills Boulevard/Roseville Parkway/HP Dr. (LOS D)
- Foothills Boulevard/Junction Boulevard (LOS D)
- Foothills Boulevard/Pleasant Grove Boulevard (LOS E)
- Galleria Boulevard/Antelope Creek Drive (LOS E)
- Roseville Parkway/Secret Ravine Parkway (LOS D)
- Roseville Parkway/Taylor Road (LOS E)
- Roseville Parkway/Sierra College Boulevard (LOS D)
- Stanford Ranch Road/Five Star Blvd. (LOS D)
- Baseline Road/Woodcreek Oaks Blvd. (LOS D)
- Blue Oaks Boulevard/Washington Blvd. (LOS E)
- Douglas Blvd./I-80 WB Ramps (LOS E)
- Riverside Avenue/I-80 WB Ramps (LOS F)
- Galleria Boulevard/SR 65 SB Ramps (LOS D)
- Taylor Road/Eureka Rd/I-80 EB Off-Ramp (LOS D)
- Riverside Avenue/Orlando/I-80 EB Off-Ramp (LOS E)
- Fiddyment Road/Westhills Drive (LOS D)
- Roseville Parkway/Gibson Drive West (LOS E)

EXPANSION OF GENERAL PLAN LOS POLICY TO INCLUDE AM PEAK HOUR CONDITIONS

The City's General Plan LOS policies are currently only applicable to weekday PM peak hour conditions. If the City chose to expand the LOS policy to also apply to weekday AM peak hour conditions, the following 23 intersections would operate at LOS D or worse during the AM peak hour under the 2035 CIP conditions (using HCM intersection analysis methods).

- Baseline Road/Fiddyment Road (LOS D)
- Blue Oaks Boulevard/Fiddyment Road (LOS D)
- Blue Oaks Boulevard/Woodcreek Oaks Blvd. (LOS E)
- Cirby Way/Sunrise Avenue (LOS D)
- Cirby Way/Foothills Boulevard (LOS F)
- Cirby Way/Riverside Avenue (LOS D)
- Cirby Way/Vernon Street (LOS D)
- Douglas Boulevard/Roseville Parkway (LOS D)
- Douglas Boulevard/Harding Boulevard (LOS D)
- Douglas Boulevard/Sierra College Boulevard (LOS D)
- Foothills Boulevard/Baseline Road (LOS E)
- Foothills Boulevard/Pleasant Grove Boulevard (LOS D)
- Galleria Boulevard/Roseville Parkway (LOS D)
- Pleasant Grove Boulevard/Fairway Drive (LOS D)
- Pleasant Grove Boulevard/Fiddyment Road (LOS E)
- Pleasant Grove Boulevard/Roseville Parkway (LOS F)
- Roseville Parkway/Taylor (LOS D)
- Baseline Road/Woodcreek Oaks Blvd. (LOS E)
- Blue Oaks Boulevard/Washington Blvd. (LOS D)
- Galleria Boulevard/SR 65 SB Ramps (LOS E)
- Gibson Drive/Convention Center (LOS E)
- Fiddyment Road/Westhills Drive (LOS D)
- Roseville Parkway/Gibson Drive West (LOS D)

The City Council, following a public hearing, would determine, on a case-by-case basis that "extraordinary" improvements are not feasible or desirable and may relax the LOS C standard for these intersections. The City's General Plan would presumably be amended to list these intersections as being exempted from the LOS C policy for AM peak hour conditions. The City could elect to apply the same City-wide LOS policy as for PM peak hour conditions (i.e., 70 percent operating at LOS C or better), or choose a different standard.

2. PROJECT INTRODUCTION

This study analyzes the traffic impacts of the Amoruso Ranch Specific Plan (i.e., "Proposed Project") under Existing Conditions, and three Cumulative scenarios, known as "2035 CIP", "2035 Cumulative" and "Super-Cumulative" conditions. Traffic impacts are evaluated at intersections and roadway facilities in a variety of jurisdictions. Where significant impacts are identified, mitigation measures are recommended to lessen their significance.

PROJECT DESCRIPTION

According to the project site plan (*Amoruso Ranch Land Use Plan*, Dahlin Group, March 5, 2014), the project would be situated on approximately 674 acres north of Blue Oaks Boulevard, west of Fiddyment Road, and south of Sunset Boulevard West.

Table 6 displays the proposed project land use assumptions and dwelling unit equivalencies (DUEs) analyzed in this study. It should be noted that the latest site plan, which was developed in September 2015, now shows 1,844 single-family units and 982 multi-family units, which is 110 fewer units than shown in Table 6 and analyzed in this study. Accordingly, the conclusions of this study are considered somewhat conservative because the project being analyzed generates about three percent more traffic than the currently proposed uses.

Project access would be provided to/from the south via the construction of Westbrook Boulevard to Blue Oaks Boulevard. Access would also be provided from the north via two roadway connections to Sunset Boulevard West. The future year scenarios analyze the effects of connecting Westbrook Boulevard to Placer Parkway (to/from the north) and adding two connections from Westbrook Boulevard into the Placer Ranch Specific Plan (to/from the east).

Certain future year scenarios assume an interchange is constructed on Placer Parkway at Westbrook Boulevard. As is noted later, this is a reasonable analysis assumption given the level of development assumed in the area. However, the Amoruso Ranch Specific Plan itself does not propose to construct a new interchange on Placer Parkway at Westbrook Boulevard.

Table 6:
Proposed Project Land Use Assumptions and DUE's

Land Use Type	Amount	DUEs per Unit [3]	DUEs
Single-Family Residential[1]	1,954 du's	1 per du	1,954
Multi-Family Residential	982 du's	0.614 per du	603
Retail[2]	442 ksf	1.419 per ksf	627
Office[2]	34 ksf	2.165 per ksf	74
Elementary School	7 acres	N / A	N / A
Neighborhood Parks	26 acres	0.182 per acre	5
		Total DUEs (excluding Elementary School)	3,263

Notes:

1. Per the project applicant, all medium-density residential uses (ranging from 7 to 13 units per acre) were assumed to be single-family (versus multi-family) so as to provide a conservative analysis and to offer enhanced environmental clearance for greater flexibility of product types.
2. Per the project applicant, the 27.2-acre Village Center is assumed to consist of 15% office and 85% retail (in addition to 109 multi-family units), which yields 34 ksf office and 204 ksf retail. Although the 23.85-acre Community Commercial parcel may permit a mix of retail and office, a worst-case assumption of 100$ retail (238 ksf) was assumed.
3. Source:: http://www.roseville.ca.us/civicax/filebank/blobdload.aspx?BlobID=31449. Multi-family residential assumed to be apartments for calculation purposes.
du's = dwelling units. Ksf = thousand square feet. DUEs = Dwelling Unit Equivalents. N / A = Not applicable because the DUE factor is based on school square footage, which is not known at this time.

Source: *Amoruso Ranch Land Use Plan*, Dahlin Group, March 5, 2014.

STUDY AREA

Potential project impacts are analyzed at study facilities in the Cities of Roseville, Rocklin, and Lincoln, Counties of Placer, Sutter, and Sacramento, and Caltrans facilities. Within Roseville, all existing and planned signalized intersections throughout the City are analyzed for weekday AM and PM peak hour conditions. At non-Roseville facilities, various intersections and/or roadways are selected for analysis based on their location, likely use by the project, susceptibility of being impacted, and the preferred analysis methods of the particular agency.

ANALYSIS SCENARIOS

The following scenarios are analyzed in this report:

- Existing Conditions – represents the existing setting upon which project-specific impacts are judged.
- Existing Plus Project Conditions – represents existing conditions plus full buildout of the Amoruso Ranch Specific Plan.

- 2035 CIP No Project Conditions – assumes buildout of Roseville and development of numerous reasonable and foreseeable land uses in the study area, but no development on the Amoruso Property.
- 2035 CIP Plus Project Conditions – assumes 2035 CIP No Project conditions and the development of the Amoruso Ranch Specific Plan.
- 2035 Cumulative No Project Conditions – builds upon the 2035 CIP scenario by assuming additional land uses and roadway network improvements. This scenario does not assume development on the Amoruso Property.
- 2035 Cumulative Plus Project Conditions – assumes 2035 Cumulative No Project conditions and the development of the Amoruso Ranch Specific Plan.
- SuperCumulative No Project Conditions – builds upon the 2035 Cumulative scenario by assuming additional land uses and roadway network improvements. This scenario does not assume development on the Amoruso Property.
- SuperCumulative Plus Project Conditions – assumes development of the Amoruso Ranch Specific Plan.

ANALYSIS METHODS

Level of service is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions.

Signalized Intersections

All signalized intersections within the City of Roseville are analyzed using procedures from the HCM. Signalized intersections within Lincoln and on Caltrans facilities are analyzed using Synchro, which employs the HCM procedures. Within Placer County and Sacramento County, signalized intersections are analyzed using Circular 212 based on capacities specific to each agency.

Unsignalized Intersections

Unsignalized study intersections within Sutter County, Placer County, and Lincoln are analyzed using Synchro, which employs the HCM 2000 procedures. At all-way stop-controlled intersections, the average delay and LOS is reported for all vehicles passing through the intersection. At side-street stop-controlled intersections, the average delay and LOS is reported for both the entire intersection and for the minor-street movement with the greatest delay. **Table 7** specifies the average delay range for each LOS category based on HCM procedures.

Table 7:
Intersection Level of Service Thresholds

Level of Service	Signalized Intersections		Unsignalized Intersections
	Circular 212[1] (V/C Ratio)	HCM[2] (Avg. Delay in Seconds per Vehicle)	HCM[2] (Avg. Delay in Seconds per Vehicle)
A	≤ 0.60	≤ 10.0	≤ 10.0
B	0.61 - 0.70	> 10.0 to 20.0	> 10.0 to 15.0
C	0.71 - 0.80	> 20.0 to 35.0	> 15.0 to 25.0
D	0.81 - 0.90	> 35.0 to 55.0	> 25.0 to 35.0
E	0.91 - 1.00	> 55.0 to 80.0	> 35.0 to 50.0
F	> 1.00	> 80.0	> 50.0

Notes:
1. Source: *Interim Materials on Highway Capacity – Circular 212*, Transportation Research Board, 1980.
2. Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

This study recommends the installation of traffic signals at certain unsignalized study intersections. Prior to making any such recommendations, the peak hour volume warrant for consideration of a traffic signal, as described in the *California Manual of Uniform Traffic Control Devices* (Caltrans, 2014) was checked. In instances where traffic signals are recommended, this warrant was satisfied.

Roadway Segments

Roadways within Rocklin, Sutter County, Sacramento County, and Placer County are analyzed in accordance with daily volume thresholds established by each jurisdiction. **Table 8** shows the LOS thresholds for various roadway types.

Table 8:
Roadway Segment Level of Service Thresholds

Facility Type	Maximum Average Daily Traffic (ADT) for Given LOS				
	LOS A	LOS B	LOS C	LOS D	LOS E
Placer[1] and Sacramento[2] County Roadways					
Two-Lane Arterial	10,800	12,600	14,400	16,200	18,000
Four-Lane Arterial	21,600	25,200	28,800	32,400	36,000
Six-Lane Arterial	32,400	37,800	43,200	48,600	54,000
City of Rocklin[3] Roadways					
Four-Lane Divided Arterial	20,250	23,625	27,000	30,375	33,750
Sutter County[4] Roadways					
Two-Lane Rural Roadway	Volume Thresholds Not Provided		7,200	12,200	20,800
Four-Lane Urban Arterial			26,340	29,640	32,930
Six-Lane Urban Arterial			39,510	44,460	49,395

Notes:
1. Placer County study roadways analyzed as moderate access control facilities based on thresholds contained in *Riolo Vineyard Specific Plan DEIR* (URS, January 2008).
2. Sacramento County study roadways analyzed as moderate access control facilities based on thresholds contained in *Traffic Impact Study Guidelines* (Sacramento County, 2004).
3. City of Rocklin study roadways analyzed as moderate access control facilities based on thresholds contained in 2001 *Northwest Rocklin Annexation DEIR*.
4. Sutter County study roadways analyzed based on thresholds contained *in Sutter Pointe Specific Plan Draft EIR* (EDAW, 2008).

Freeway Facilities

Per Caltrans standards, existing conditions freeway segment operations are evaluated using methodologies from the Transportation Research Board's 2010 *Highway Capacity Manual*. The LOS for a freeway segment is based on the vehicle density (passenger cars/lane/mile) as shown in **Table 9**.

The performance LOS for merge and diverge sections is computed in one of two ways. If both the ramp and the adjacent freeway mainline segment are under capacity, then LOS is based on the density of the ramp junction. If either the ramp or the adjacent freeway mainline segment have reached (or exceed) capacity, then the merge/diverge segment is considered to operate at LOS F regardless of the computed ramp junction density. The LOS for ramp junctions is based on the vehicle density (passenger cars/lane/mile) as shown in Table 4. Per Caltrans standards, the performance of freeway ramp weaving segments under future conditions was analyzed using the Leisch methodology as defined in the *2010 Highway Design Manual* (Caltrans).

Table 9:
Freeway Level of Service Definitions

Level of Service[1]	Mainline (Density)[1]	Ramp Junctions (Density)[1]
A	≤ 11	≤ 10
B	> 11 to 18	> 10 to 20
C	> 18 to 26	> 20 to 28
D	> 26 to 35	> 28 to 35
E	> 35 to 45	> 35
F	> 45 or Demand exceeds capacity[2]	Demand exceeds capacity[2]

Notes:
1. Density expressed in passenger car equivalents per hour per mile per lane.
2. Occurs when freeway demand exceeds upstream (diverge) or downstream (merge) freeway segment capacity, or if off-ramp demand exceeds off-ramp capacity.

Source: *HCM*, (Transportation Research Board, 2010) Exhibits 11-5 and 13-2.

LAND USE AND ROADWAY NETWORK ASSUMPTIONS

The City of Roseville 2025 CIP travel demand model was updated to represent a 2035 horizon year and includes various land use and roadway modifications, which are summarized below.

Land Use Assumptions

- Build-out of City of Roseville (existing City including approved specific plans)
- Build-out Regional University Specific Plan
- Build-out of Phase 1 of Placer Vineyards
- 2035 levels of residential market absorption in City of Lincoln
- Build-out of residential and 2035 market absorption levels of non-residential in City of Rocklin
- SACOG 2035 market absorption for specific projects outside of South Placer County including the Elverta Specific Plan (Sacramento County), Johnson Ranchos (Wheatland), and Sutter Pointe (Sutter County)

The 2035 CIP scenario does not assume any development of the Placer Ranch Specific Plan since that project did not have a project application at the time this study began. It assumes buildout of the Hewlett Packard Campus based on its current light industrial zoning since the analysis was completed prior to submission of

an application and approval by the City Council of the mixed-use Campus Oaks project in the westerly portion of the property.

Roadway Network Assumptions

The 2035 CIP travel demand model includes the roadway extensions and widenings included in the City of Roseville Capital Improvement Program (CIP). It also includes other improvements funded through various other funding sources. Following is a partial list of improvements assumed in place.

- I-80 improvements including new auxiliary lanes on EB I-80 from SR 65 to Rocklin Road and on WB I-80 from Douglas Boulevard to Riverside Avenue (*included as a Tier 1 project in SACOG's MTP/SCS*).
- Highway 65 is widened to six continuous lanes between I-80 and Blue Oaks Boulevard (*partial funding being collected through SPRTA fee program, full funding expected to be available for construction in 21-year horizon period according to City staff*).
- Baseline/Riego Road is widened to six lanes from Fiddyment Road to SR 99 through Roseville, Placer County, and Sutter County (*funded through fee programs and local developer frontage improvement requirements*).
- SR 99/Riego Road interchange is constructed (*recently completed*).
- Watt Avenue is widened to six lanes between Baseline Road and Sacramento County line, and to four lanes from the County line to Antelope Road (*funded through fee programs and local developer frontage improvement requirements*).
- Walerga Road is four lanes between Baseline and and Sacramento County line (*funded through fee programs and local developer frontage improvement requirements*).
- Santucci Boulevard is constructed as six lanes from Baseline Road to Blue Oaks Boulevard (*funded through City of Roseville CIP and local developer frontage improvement requirements*).
- Blue Oaks Boulevard is widened to eight lanes from SR 65 to Woodcreek Oaks Boulevard, and six lanes from Woodcreek Oaks Boulevard to Santucci Boulevard Boulevard (*funded through City of Roseville CIP and local developer frontage improvement requirements*).
- Placer Parkway Phase 1 is constructed as four lanes from SR 65 to Foothills Boulevard (*included as a Tier 1 project in SACOG's MTP/SCS*).
- Sunset Boulevard is widened to four lanes from west of SR 65 to Cincinnati Avenue (*funded through Placer County CIP).*
- Sunset Boulevard is widened to six lanes east of SR 65 (*based on City of Rocklin General Plan Circulation Element Diagram 4-8, October 2012*).
- Fiddyment Road is widened to four lanes from the Roseville city limits to Athens Avenue (*included as a Tier 1 project in SACOG's MTP/SCS*).

SIGNIFICANCE CRITERIA

The following thresholds of significance have been used to determine whether implementing the proposed project would result in a significant transportation impact. These thresholds of significance are derived from questions posed in Appendix G of the CEQA Guidelines, thresholds of significance from applicable general plans and previous environmental documents, and professional judgment. Significance criteria are described separately for the Cities of Roseville, Rocklin, and Lincoln, and Counties of Placer, Sacramento, and Sutter. This section also describes Caltrans' significance criteria for state facilities.

City of Roseville

The City of Roseville's level of service policy calls for maintaining a LOS C standard at a minimum of 70 percent of all signalized intersections in the City during the PM peak hour. The City Council, following a public hearing, may determine, on a case-by-case basis that "extraordinary" improvements are not feasible or desirable and may relax the LOS C standard for a particular intersection.

The City of Roseville does not currently have a level of service policy for the AM peak hour. However, at the direction of City staff, this study and the associated General Plan update establishes an AM peak hour LOS policy that specifies LOS C or better at a minimum of 70 percent of signalized intersections, with individual intersection exceptions as adopted by the City Council. Refer to previous list of 23 specific intersections that are expected to operate worse than LOS C during the AM peak hour for 2035 CIP conditions using HCM methods.

The project would have a significant impact if it would:

1. Cause a signalized intersection in Roseville to be degraded as follows under existing, 2035 CIP or 2035 cumulative conditions during the AM or PM peak hours:
    - For intersections currently operating at LOS C or better: worsen operations to LOS D or worse.
    - For intersections that currently operate at less than LOS C: cause operations to further worsen by one or more service levels.
2. Cause the overall percentage of signalized intersections throughout the City of Roseville operating at LOS C or better during the AM and PM peak hours to fall below 70 percent;

City of Rocklin

Policy C-10 of the *City of Rocklin General Plan Circulation Element* (October 2012) identifies a minimum traffic LOS of C for all signalized intersections in the City during the weekday PM peak hour.

For project impacts to existing (or projected) unacceptably operating intersections, a 0.05 or greater increase in the v/c ratio is considered significant. This threshold was used in the *City of Rocklin General Plan Update*

Draft EIR (2011). The use of this threshold is supported by substantial evidence indicating that a 5 percent degradation is significant because it would be noticeable to the average driver, whereas an increase below this level would be within normal daily fluctuations in traffic volumes and therefore not noticeable.

The project would have a significant impact if it would:

1. Cause a signalized intersection or roadway in Rocklin to worsen from LOS C or better to LOS D or worse during the AM or PM peak hours (for intersections) or on a daily basis (for roadways).
2. Cause a signalized intersection or roadway in Rocklin that is already (or projected) to be operating at LOS D or worse during the AM or PM peak hours (for intersections) or on a daily basis (for roadways) to experience a 0.05 or greater increase in the v/c ratio.

City of Lincoln

The City of Lincoln General Plan establishes a minimum LOS C goal for the City.

The project would have a significant impact if it would:

1. Cause a signalized intersection in Lincoln to worsen from LOS C or better to LOS D or worse during the AM or PM peak hours.
2. Cause a signalized intersection in Lincoln that is already (or projected to be) operating at LOS D or worse during the AM or PM peak hours to experience a 0.05 or greater increase in the v/c ratio.

Placer County

Placer County General Plan Policy 3.A.7 requires a minimum LOS C at County roadways and intersections, with LOS D being acceptable at locations within one-half mile of a state highway. The Placer County Department of Public Works *Methodology of Assessment – Minimum LOS* (2015) identifies the use of a 5 percent v/c ratio threshold as the significance criteria for determining impacts to facilities that already operate unacceptably.

The project would have a significant impact if it would:

1. Cause an intersection or roadway in Placer County (located beyond one-half mile of a state highway) to worsen from LOS C or better to LOS D or worse during the AM or PM peak hours (for intersections) or on a daily basis (for roadways).
2. Cause an intersection or roadway in Placer County (located within one-half mile of a state highway) to worsen from LOS D or better to LOS E or worse during the AM or PM peak hours (for intersections) or on a daily basis (for roadways).

3. Cause a signalized intersection or roadway in Placer County that is already (or projected to be) operating unacceptably during the AM or PM peak hours (for intersections) or on a daily basis (for roadways) to experience a 0.05 or greater increase in the v/c ratio.
4. Cause an unsignalized intersection in Placer County that is already (or projected to be) operating unacceptably during the AM or PM peak hours to experience a three-second or greater increase in delay.

Sutter County

Sutter County General Plan Policy 3.A.4 establishes a LOS D goal for its roadway system.

The project would have a significant impact if it would:

1. Cause an intersection or roadway in Sutter County to worsen from LOS D or better to LOS E or worse during the AM or PM peak hours (for intersections) or on a daily basis (for roadways).
2. Cause an intersection or roadway in Sutter County that is already (or projected to be) operating unacceptably during the AM or PM peak hours (for intersections) or on a daily basis (for roadways) to experience a 0.05 or greater increase in the v/c ratio or five-second or greater increase in delay.

Sacramento County

The Sacramento County *Traffic Impact Study Guidelines* (Sacramento County, 2004) identify a LOS E goal for operations within urban areas of the County.

The project would have a significant impact if it would:

1. Cause an intersection or roadway in Sacramento County to worsen from LOS E or better to LOS F during the AM or PM peak hours (for intersections) or on a daily basis (for roadways).
2. Cause an intersection or roadway in Sacramento County that is already (or projected to be) operating unacceptably during the AM or PM peak hours (for intersections) or on a daily basis (for roadways) to experience a 0.05 or greater increase in the v/c ratio or five-second or greater increase in delay.

State Highways

The *State Route 65 Corridor System Management Plan* (CSMP) (Caltrans, 2009) identifies a 20-year concept LOS F for SR 65 from I-80 to Blue Oaks Boulevard, and a concept LOS E for SR 65 from north of Blue Oaks Boulevard into and through the City of Lincoln. The document further notes that "no further degradation of service from existing "F" is acceptable, as indicated by delay performance measurement". For freeway facilities, the applicable performance standard is density, which is expressed in passenger cars per hour per mile per lane. Since density values are rounded to the nearest integer value for reporting purposes, a minimum density increase of 0.5 would, by definition, cause an increase in the reported density measurement. Density is not reported for LOS F conditions, but is reported for LOS A through E conditions.

Through an iterative process, it was determined that a 60-vehicle increase to a four-lane freeway operating at LOS E would approximately correspond to a 0.5-increase in density. Accordingly, an increase of 60 or more vehicles during a peak hour to a facility operating at LOS F is the threshold of significance used in this study.

The project would have a significant impact if it would:

1. Cause a facility maintained by Caltrans to worsen from acceptable to unacceptable during the AM or PM peak hours;
2. Worsen unacceptable operations to a significant degree (as indicated by a change in the applicable performance measure) at a facility maintained by Caltrans during the AM or PM peak hours;
3. Cause traffic at an off-ramp maintained by Caltrans to queue back to the mainline, or add traffic to an off-ramp that already queues back to the mainline;

Since this study focuses exclusively on the roadway system, significance thresholds are not provided for other travel modes such as bicycling, walking, and transit.

FEE PROGRAMS

The City of Roseville currently participates in five traffic mitigation fee programs to fund capital projects in Roseville and South Placer. The funding for those improvements is nexus based and is designed to fully fund each of the improvements included within the programs listed below.

- Roseville Traffic Mitigation Fee – structured to fund improvements within the City of Roseville to meet the City's adopted level of service standard based on 2025 market rate development in the region and buildout of existing City. The City's local CIP identifies roadway improvements that are needed to meet the City's level of service standard at year 2025 and includes build out of currently entitled City land, plus some potential redevelopment of properties within the City's Downtown. In conjunction with the proposed project, the City intends to update its CIP to 2035 conditions.
- Highway 65 Joint Powers Authority (JPA) – structured to construct interchanges along Highway 65 at Galleria Boulevard/Stanford Ranch Road, Pleasant Grove Boulevard, and Sunset Boulevard based on 2025 development levels.
- South Placer Regional Transportation Authority (SPRTA) – structured to fund improvements along Sierra College Boulevard from Highway 193 to the Sacramento County line, portions of Auburn/Folsom Road, Douglas/I-80 Interchange, Placer Parkway, and $67 million for the widening of Highway 65.
- City/County Baseline Road Fee Program – structured to fund the City of Roseville's impacts on Placer County's portion of Baseline Road between Brady Lane and the Placer County/Sutter County Line and the Walerga Road bridge.

- Tier II Placer Parkway Fee – is intended to accommodate the roadway capacity needs of growth in Southern Placer County. The fee funds Placer Parkway and environmental review of the I-80/SR 65 interchange. The fee applies to new specific plans in Western Placer County (including both unincorporated areas and cities).

The roadways assumed in place under 2035 CIP conditions are based on the City of Roseville Capital Improvement Program (CIP). Details of this program can be found at: http://www.roseville.ca.us/civicax/filebank/blobdload.aspx?blobid=2879. Based on the identified improvements within the CIP, the City imposes a Traffic Mitigation Fee (TMF) collected at time of building permit issuance. This fee funds the needed roadway improvements that support each new development project. The City's CIP has approximately 500 roadway, intersection and signal projects valued at approximately $398 million. To date, the City has collected approximately $156 million in Traffic Mitigation fees and secured another $50 million in grants and outside funding, such as federal and state programs and developer-constructed roadway projects, for a total of more than $200 million in projects constructed to date. The City's CIP is programmed to collect approximately an additional $198 million from future development and is, therefore, fully funded. In addition to paying fair-share costs of the City's CIP through payment of fees, the project is subject to payment of four other distinct fees listed above. The funding for improvements within those programs are nexus based and are designed to fully fund each of the improvements included within the CIP programs listed above.

3. EXISTING CONDITIONS

This chapter presents the existing roadway system within the study area. It includes intersections, surface streets, and freeway facilities in several jurisdictions. Since this study focuses exclusively on the roadway network, it does not include any descriptions, maps, or evaluations of other travel modes such as transit, walking or bicycling. However, it is anticipated that the project's EIR will include a comprehensive evaluation of these travel modes.

CITY OF ROSEVILLE ROADWAY SYSTEM

Figure 1 shows all existing signalized study intersections in the City of Roseville including several intersections maintained by Caltrans that are within the City limits. As of April 2014, there were 167 signalized study intersections including eight intersections located in downtown Roseville that are part of a pedestrian overlay district. Operations at these eight intersections are analyzed, although General Plan LOS policies do not apply at these intersections. The traffic signal at the Washington Boulevard/Oak Street intersection was recently replaced by a multi-lane roundabout, and therefore was not analyzed as a signalized intersection.

Figure 2 shows the existing AM and PM peak hour turning volumes and lane configurations at these intersections. Traffic counts were collected at all study intersections in January 2014 while schools were in session.

Figure 3 shows the existing number of lanes on Roseville roadways. **Figure 4** shows the ADT on those roadways based on data collected in January 2014.

Table 10 displays existing AM and PM peak hour operations at all signalized intersections in Roseville based on the HCM analysis methods described in Chapter 1. Refer to separately bound Appendix A for technical calculations.

Table 11 summarizes AM and PM peak hour operations at all signalized intersections in Roseville. As shown, 98 percent of signalized intersections in the City of Roseville currently operate at LOS C or better during the AM peak hour. During the PM peak hour, 81 percent of intersections operate at LOS C or better. Of those 30 intersections not operating at LOS C or better, the vast majority are operating at LOS D.

N:\2011Projects\2923_AmorusoRanchEIR_TDM\Graphics\Draft\GIS\MXD_Nov2015\Fig01_StudyIntersection.mxd

1 Existing Study Intersection

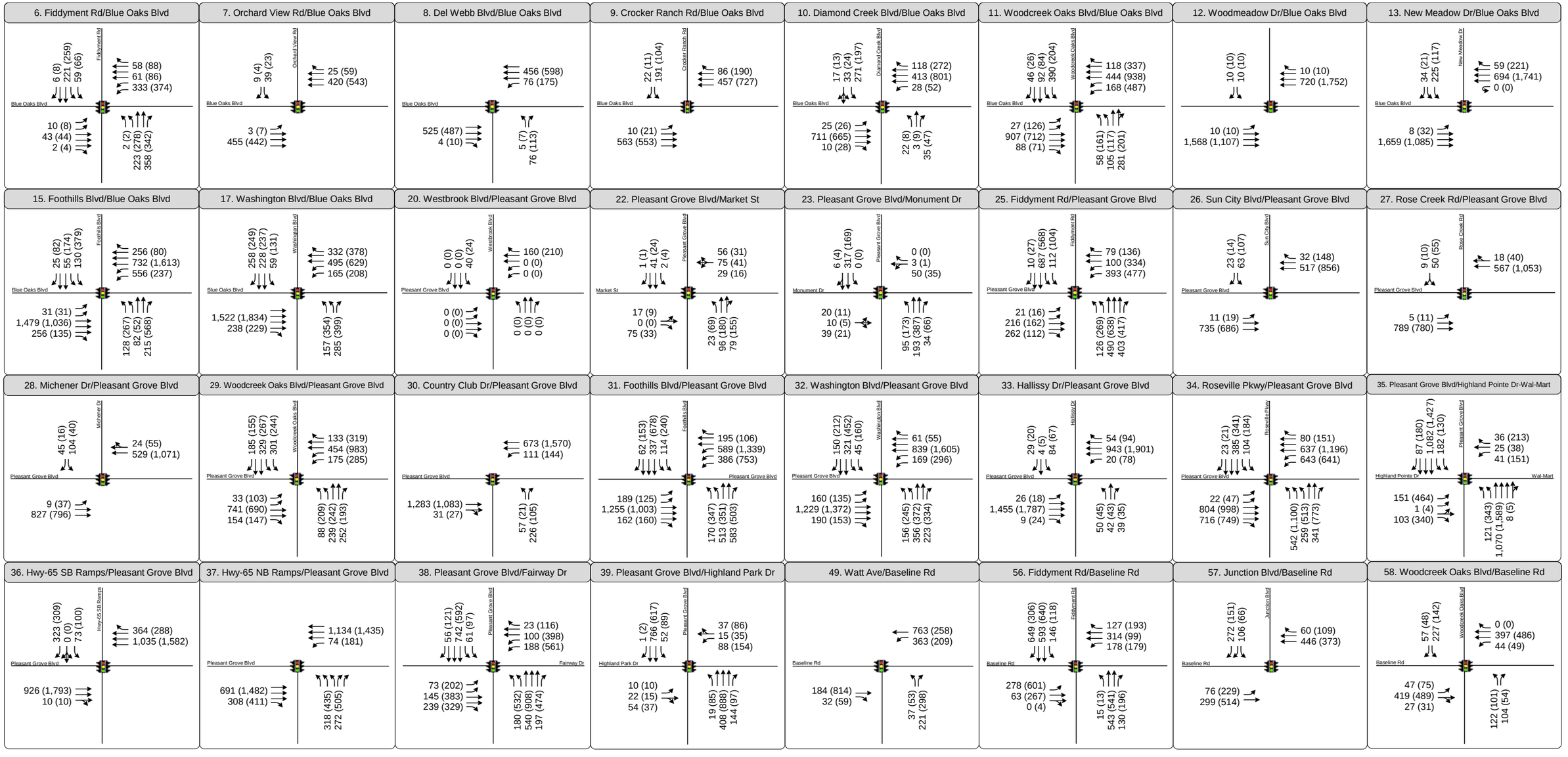
P1 Existing Study Intersection in Pedestrian Overlay Zone

N Not to Scale

Note:
1. Additional intersections outside City of Roseville also being studied.
2. Intersection numbering is sequential under CIP/Cumulative conditions, but not under existing conditions (i.e., intersections 1-5 are future intersections)

Figure 1

Signalized Study Intersections in Roseville - Existing Conditions



Turn Lane

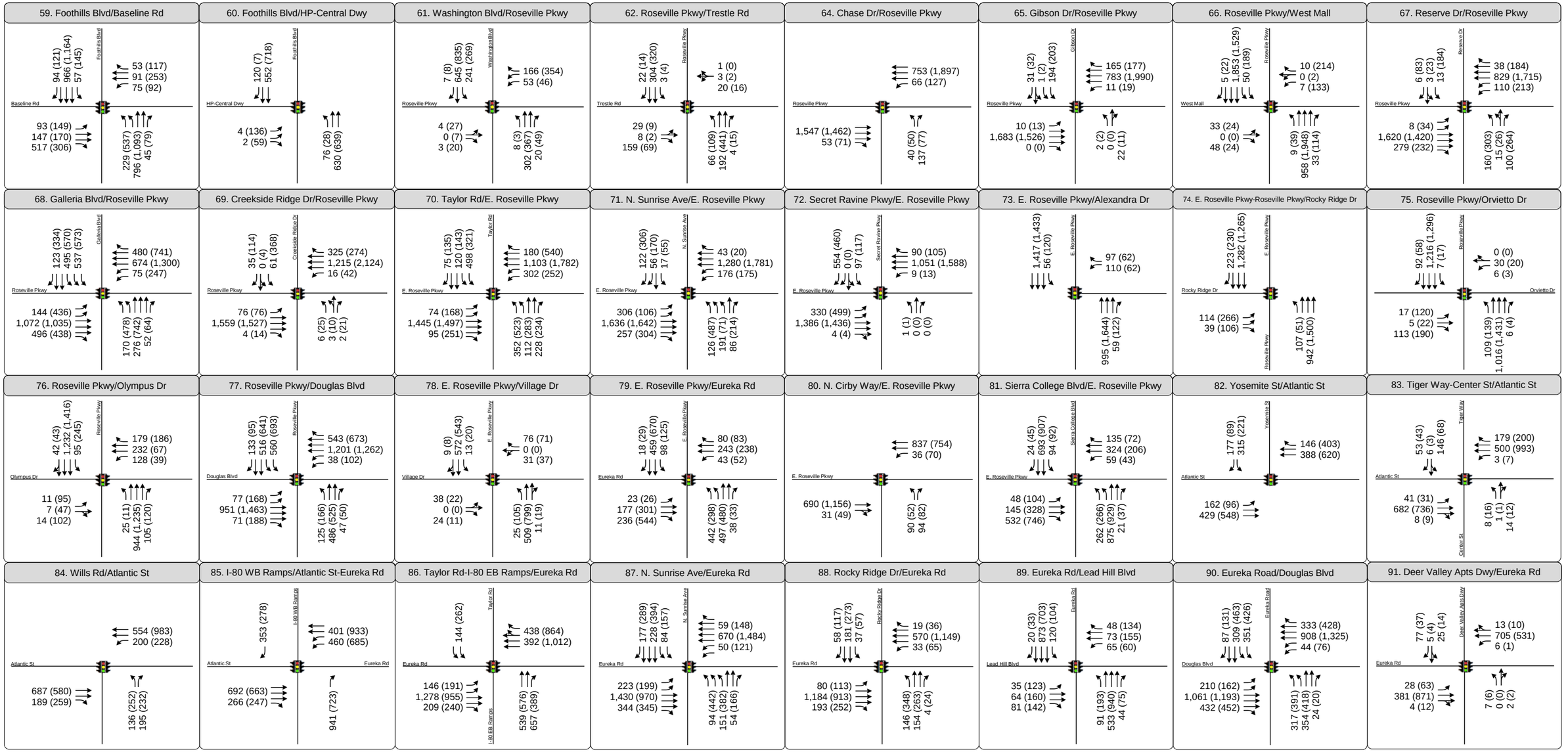
M (PM) Peak Hour Traffic Volume

Traffic Signal

Note: Intersection numbering is sequential under CIP/Cumulative conditions, but not under existing conditions (i.e., intersections 1-5 are future intersections)

Figure 2a

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions



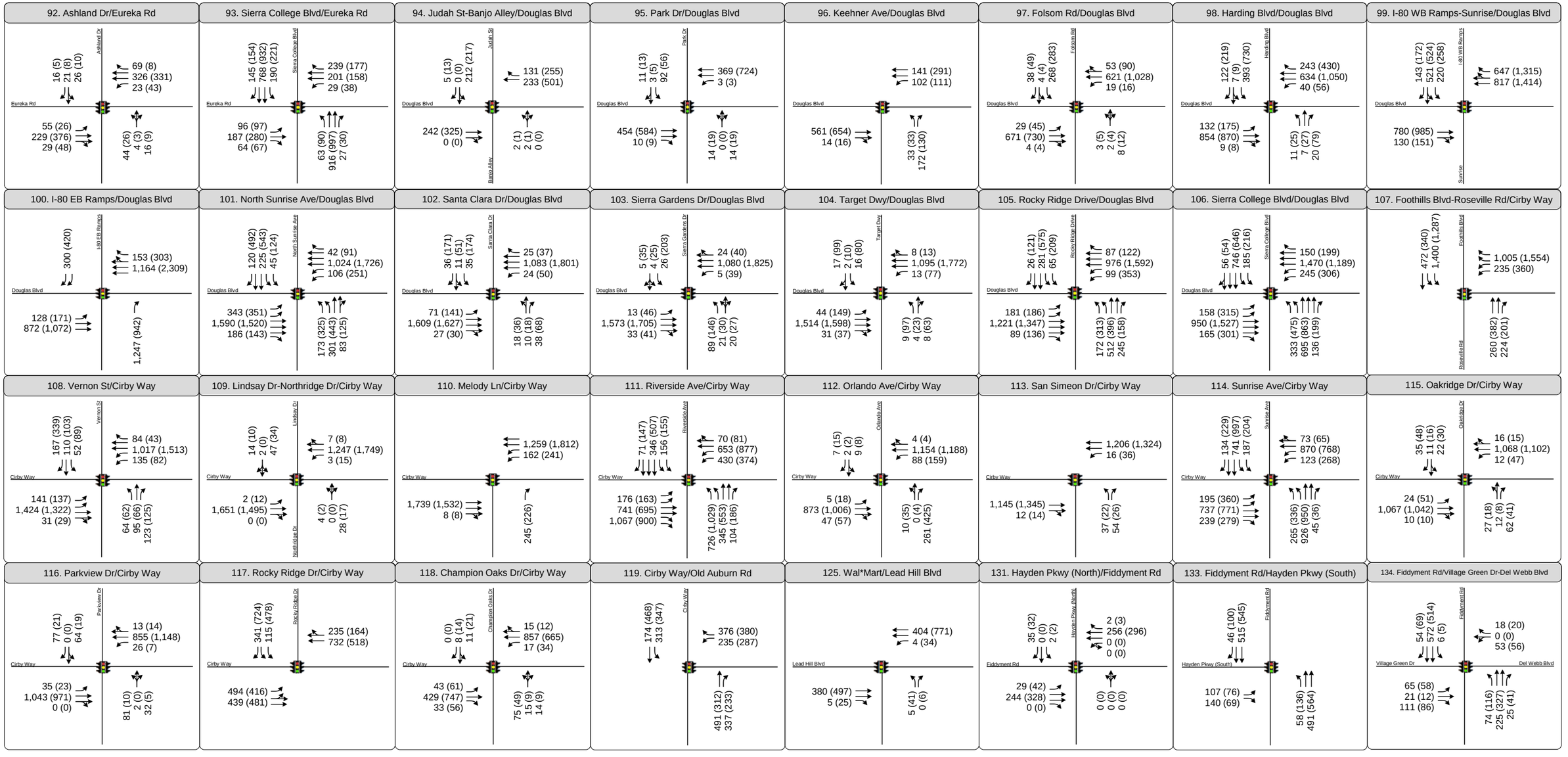
Turn Lane

M (PM) Peak Hour Traffic Volume

Traffic Signal

Figure 2b

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions



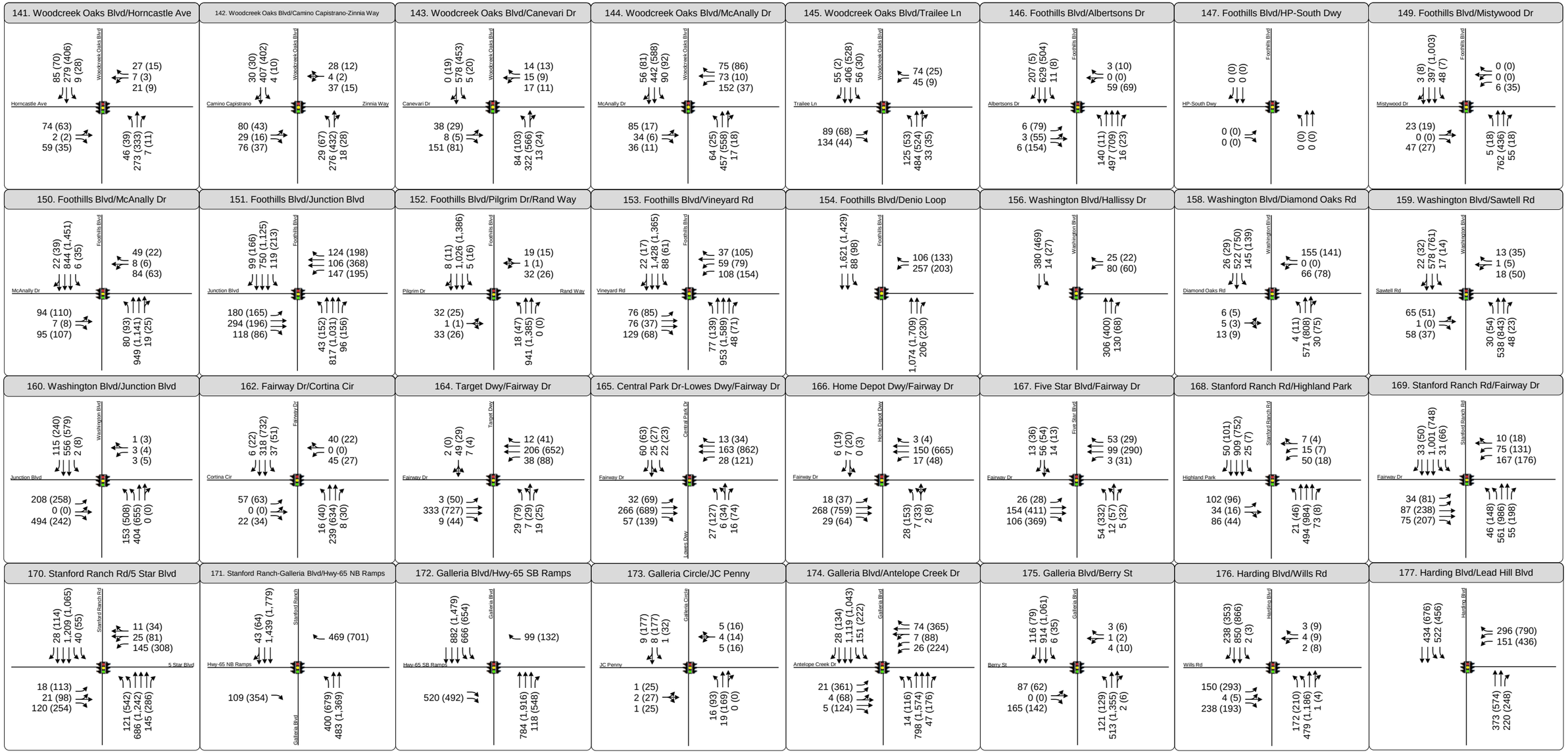
Turn Lane

M (PM) Peak Hour Traffic Volume

Traffic Signal

Figure 2c

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions



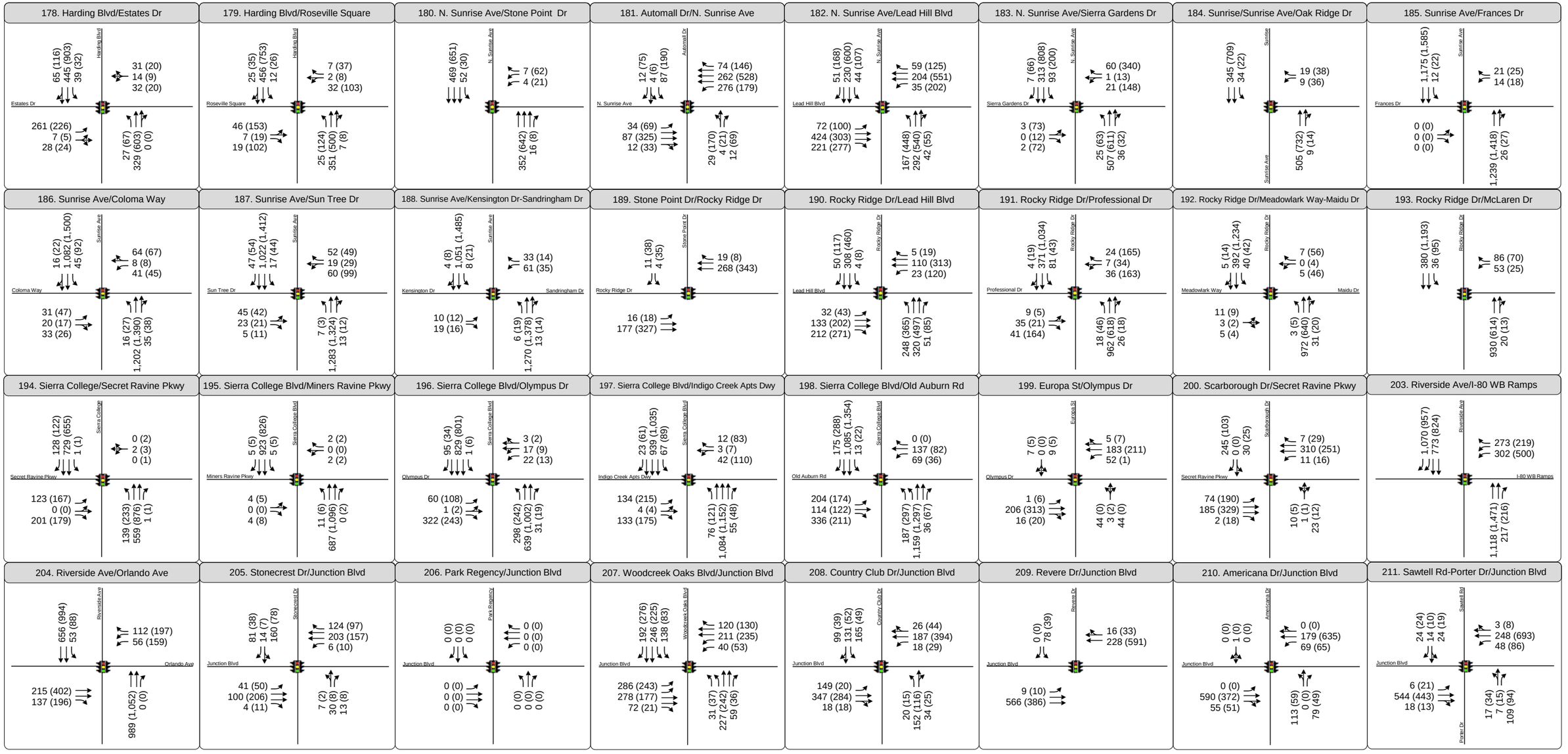
Turn Lane

M (PM) Peak Hour Traffic Volume

Traffic Signal

Figure 2d

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions



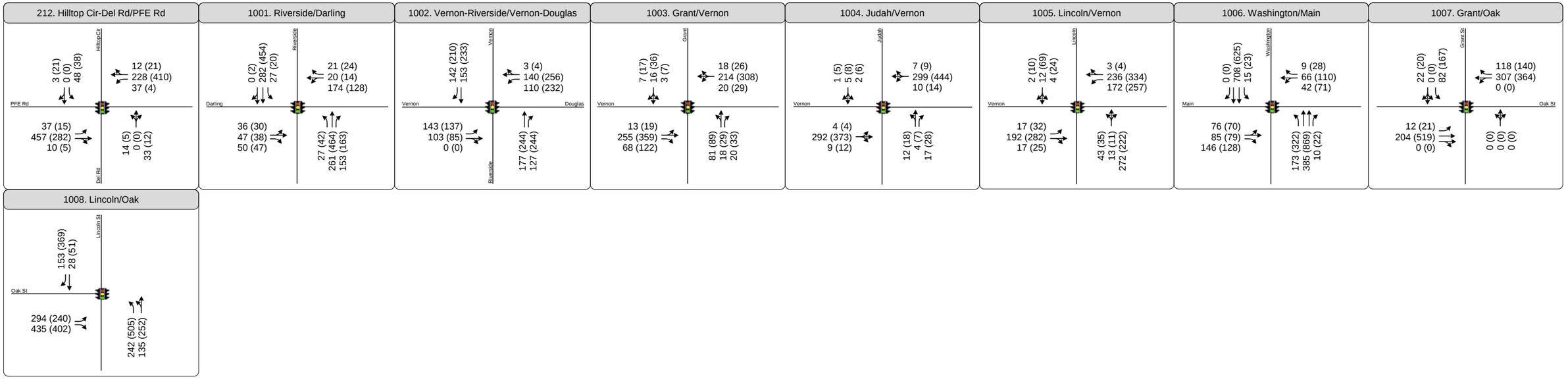
Turn Lane

M (PM) Peak Hour Traffic Volume

Traffic Signal

Figure 2e

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions



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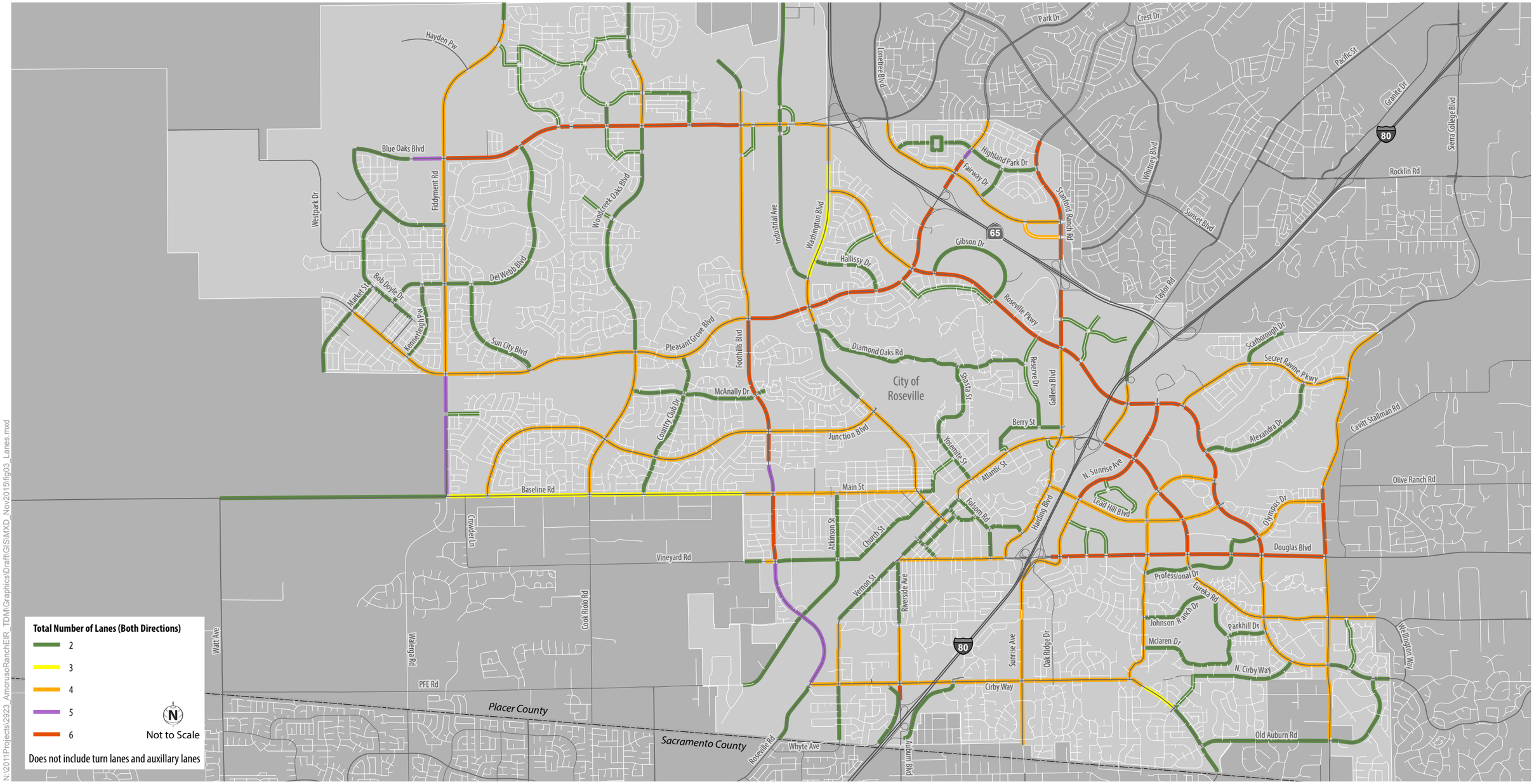
Turn Lane

M (PM) Peak Hour Traffic Volume

Traffic Signal

Figure 2f

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions



Total Number of Lanes (Both Directions)

- 2
- 3
- 4
- 5
- 6

Not to Scale

Does not include turn lanes and auxillary lanes

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Figure 3

Number of Lanes on Roseville Roadways - Existing Conditions

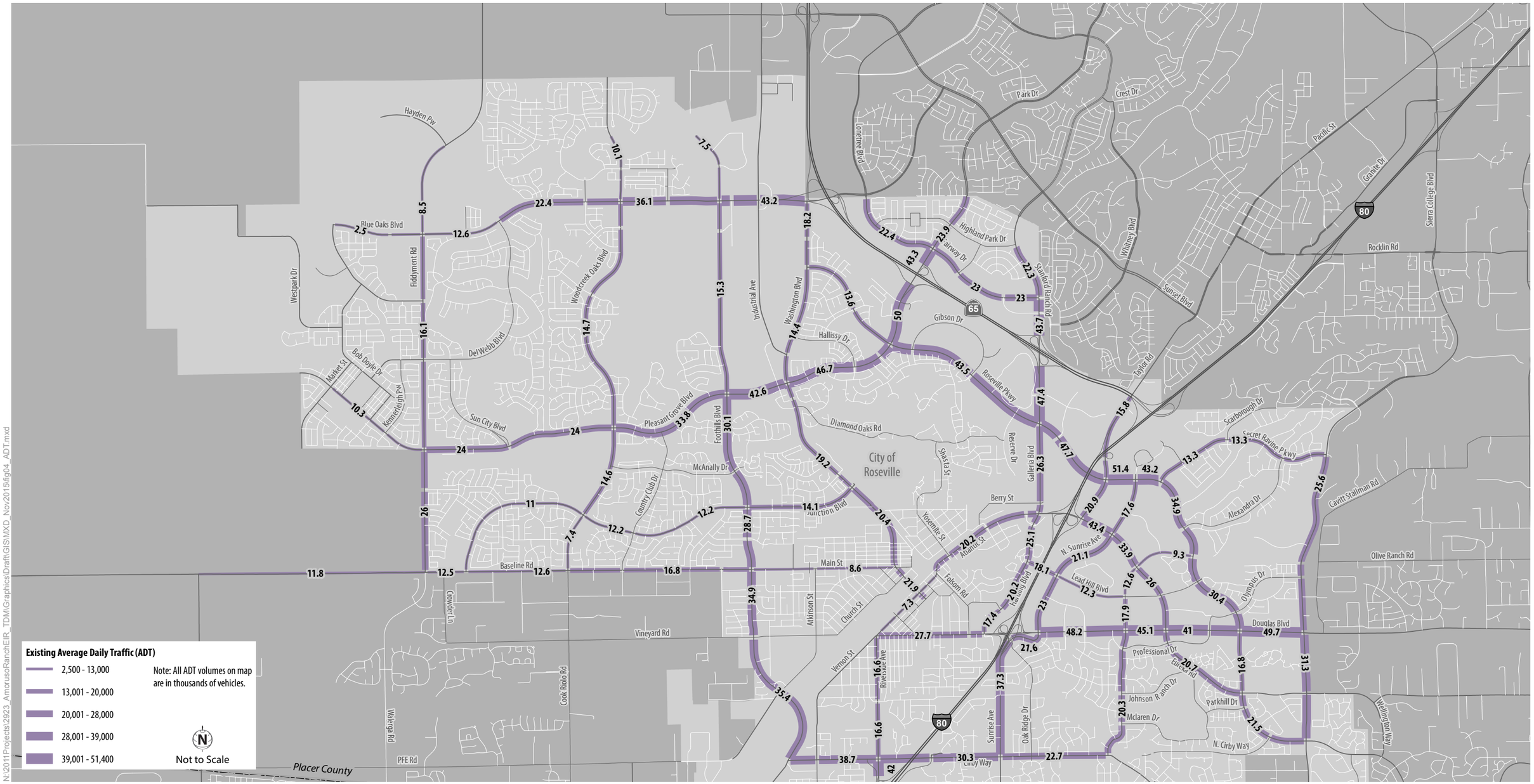

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Figure 4

Average Daily Traffic Volume (ADT) on Roseville Roadways - Existing Conditions

Table 10:
Roseville Signalized Intersection Operations – Existing Conditions (HCM Methodology)

Intersection		AM Peak Hour		PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
6	Blue Oaks Blvd/Fiddyment Rd	18	B	18	B
7	Blue Oaks Blvd/Orchard View Rd	3	A	3	A
8	Blue Oaks Blvd/Del Webb Blvd	7	A	10	A
9	Blue Oaks Blvd/Crocker Ranch Rd	8	A	7	A
10	Blue Oaks Blvd/Diamond Creek Blvd	21	C	20	B
11	Blue Oaks Blvd/Woodcreek Oaks Blvd	30	C	37	D
12	Blue Oaks Blvd/Woodmeadow Dr	6	A	11	B
13	Blue Oaks Blvd/New Meadow Dr	7	A	19	B
15	Blue Oaks Blvd/Foothills Blvd	32	C	33	C
17	Blue Oaks Blvd/Washington Blvd	29	C	42	D
20	Pleasant Grove Blvd./Westbrook Blvd.	10	B	7	A
22	Market St/Pleasant Grove Blvd	17	B	15	B
23	Monument Dr/Pleasant Grove Blvd	14	B	12	B
25	Pleasant Grove Blvd/Fiddyment Rd	26	C	27	C
26	Pleasant Grove Blvd/Sun City Blvd	4	A	5	A
27	Pleasant Grove Blvd/Rose Creek Rd	4	A	4	A
28	Pleasant Grove Blvd/Michener Dr	6	A	6	A
29	Pleasant Grove Blvd/Woodcreek Oaks Blvd	26	C	28	C
30	Pleasant Grove Blvd/Country Club Dr	15	B	10	A
31	Pleasant Grove Blvd/Foothills Blvd	31	C	52	D
32	Pleasant Grove Blvd/Washington Blvd	31	C	41	D
33	Pleasant Grove Blvd/Hallissy Dr	14	B	25	C
34	Pleasant Grove Blvd/Roseville Pkwy	27	C	67	E
35	Highland Pointe Dr/Pleasant Grove Blvd	23	C	47	D
36	Pleasant Grove Blvd/Hwy-65 SB Ramps	12	B	11	B
37	Pleasant Grove Blvd/Hwy-65 NB Ramps	22	B	21	B
38	Fairway Dr/Pleasant Grove Blvd	28	C	41	D
39	Highland Park Dr/Pleasant Grove Blvd	17	B	25	C
49	Baseline Rd/Watt Ave	13	B	31	C
56	Baseline Rd/Fiddyment Rd	28	C	41	D
57	Baseline Rd/Junction Blvd	12	B	11	B
58	Baseline Rd/Woodcreek Oaks Blvd	25	C	23	C
59	Baseline Rd/Foothills Blvd	33	C	36	D
60	HP-Central Dwy/Foothills Blvd	3	A	5	A

Table 10:
Roseville Signalized Intersection Operations – Existing Conditions (HCM Methodology)

Intersection		AM Peak Hour		PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
61	Roseville Pkwy/Washington Blvd	12	B	16	B
62	Trestle Rd/Roseville Pkwy	11	B	9	A
64	Roseville Pkwy/Chase Dr	9	A	12	B
65	Roseville Pkwy/Gibson Dr	13	B	13	B
66	West Mall/Roseville Pkwy	5	A	25	C
67	Roseville Pkwy/Reserve Dr	12	B	37	D
68	Roseville Pkwy/Galleria Blvd	22	C	53	D
69	Roseville Pkwy/Creekside Ridge Dr	10	A	37	D
70	E. Roseville Pkwy/Taylor Rd	29	C	57	E
71	E. Roseville Pkwy/N. Sunrise Ave	21	C	39	D
72	E. Roseville Pkwy/Secret Ravine Pkwy	17	B	32	C
73	Alexandra Dr/E. Roseville Pkwy	12	B	16	B
74	Rocky Ridge Dr/E. Roseville Pkwy	8	A	17	B
75	Orvietto Dr/Roseville Pkwy	15	B	28	C
76	Olympus Dr/Roseville Pkwy	17	B	28	C
77	Douglas Blvd/Roseville Pkwy	33	C	48	D
78	Village Dr/E. Roseville Pkwy	13	B	15	B
79	Eureka Rd/E. Roseville Pkwy	22	C	26	C
80	E. Roseville Pkwy/N. Cirby Way	7	A	8	A
81	E. Roseville Pkwy/Sierra College Blvd	23	C	25	C
82	Atlantic St/Yosemite St	16	B	14	B
83	Atlantic St/Tiger Way	15	B	11	B
84	Atlantic St/Wills Rd	12	B	12	B
85	Atlantic St/I-80 WB Ramps	9	A	10	B
86	Eureka Rd/Taylor Rd	29	C	44	D
87	Eureka Rd/N. Sunrise Ave	21	C	35	D
88	Eureka Rd/Rocky Ridge Dr	22	C	33	C
89	Lead Hill Blvd/Eureka Rd	19	B	25	C
90	Douglas Blvd/Eureka Road	27	C	43	D
91	Eureka Rd/Deer Valley Apts Dwy	11	B	10	A
92	Eureka Rd/Ashland Dr	12	B	9	A
93	Eureka Rd/Sierra College Blvd	26	C	31	C
94	Douglas Blvd/Judah St	10	B	13	B
95	Douglas Blvd/Park Dr	9	A	9	A

Table 10:
Roseville Signalized Intersection Operations – Existing Conditions (HCM Methodology)

Intersection		AM Peak Hour		PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
96	Douglas Blvd/Keehner Ave	9	A	10	A
97	Douglas Blvd/Folsom Rd	21	C	19	B
98	Douglas Blvd/Harding Blvd	28	C	48	D
99	Douglas Blvd/I-80 WB Ramps	32	C	41	D
100	Douglas Blvd/I-80 EB Ramps	6	A	11	B
101	Douglas Blvd/North Sunrise Ave	31	C	61	E
102	Douglas Blvd/Santa Clara Dr	9	A	28	C
103	Douglas Blvd/Sierra Gardens Dr	16	B	43	D
104	Douglas Blvd/Target Dwy	9	A	30	C
105	Douglas Blvd/Rocky Ridge Drive	26	C	59	E
106	Douglas Blvd/Sierra College Blvd	37	D	44	D
107	Cirby Way/Roseville Rd	24	C	40	D
108	Cirby Way/Vernon St	24	C	34	C
109	Cirby Way/Lindsay Dr	6	A	6	A
110	Cirby Way/Melody Ln	11	B	9	A
111	Cirby Way/Riverside Ave	35	C	60	E
112	Cirby Way/Orlando Ave	12	B	18	B
113	Cirby Way/San Simeon Dr	7	A	7	A
114	Cirby Way/Sunrise Ave	49	D	59	E
115	Cirby Way/Oakridge Dr	16	B	14	B
116	Cirby Way/Parkview Dr	10	A	5	A
117	Cirby Way/Rocky Ridge Dr	21	C	28	C
118	Cirby Way/Champion Oaks Dr	9	A	10	A
119	Old Auburn Rd/Cirby Way	19	B	16	B
125	Lead Hill Blvd/Wal*Mart	2	A	4	A
131	Fiddyment Rd/Hayden Pkwy (North)	6	A	7	A
133	Hayden Pkwy (South)/Fiddyment Rd	8	A	8	A
134	Village Green Dr/Fiddyment Rd	16	B	17	B
141	Horncastle Ave/Woodcreek Oaks Blvd	13	B	13	B
142	Camino Capistrano/Woodcreek Oaks Blvd	16	B	15	B
143	Canevari Dr/Woodcreek Oaks Blvd	18	B	15	B
144	McAnally Dr/Woodcreek Oaks Blvd	22	C	14	B
145	Trailee Ln/Woodcreek Oaks Blvd	19	B	13	B
146	Albertsons Dr/Foothills Blvd	11	B	10	A

Table 10:
Roseville Signalized Intersection Operations – Existing Conditions (HCM Methodology)

Intersection		AM Peak Hour		PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
147	HP-South Dwy/Foothills Blvd	-	C	-	C
149	Mistywood Dr/Foothills Blvd	10	A	8	A
150	McAnally Dr/Foothills Blvd	15	B	18	B
151	Junction Blvd/Foothills Blvd	29	C	34	C
152	Pilgrim Dr/Foothills Blvd	7	A	6	A
153	Vineyard Rd/Foothills Blvd	20	B	22	B
154	Denio Loop/Foothills Blvd	17	B	18	B
156	Hallissy Dr/Washington Blvd	6	A	5	A
158	Diamond Oaks Rd/Washington Blvd	12	B	13	B
159	Sawtell Rd/Washington Blvd	12	B	13	B
160	Junction Blvd/Washington Blvd	12	B	19	B
162	Cortina Cir/Fairway Dr	15	B	14	B
164	Fairway Dr/Target Dwy	10	A	12	B
165	Fairway Dr/Central Park Dr	10	B	16	B
166	Fairway Dr/Home Depot Dwy	7	A	28	C
167	Fairway Dr/Five Star Blvd	11	B	19	B
168	Highland Park/Stanford Ranch Rd	14	B	10	A
169	Fairway Dr/Stanford Ranch Rd	21	C	27	C
170	5 Star Blvd/Stanford Ranch Rd	18	B	41	D
171	Hwy-65 NB Ramps/Stanford Ranch	9	A	43	D
172	Hwy-65 SB Ramps/Galleria Blvd	6	A	23	C
173	JC Penny/Galleria Circle	12	B	16	B
174	Antelope Creek Dr/Galleria Blvd	9	A	34	C
175	Berry St/Galleria Blvd	15	B	18	B
176	Wills Rd/Harding Blvd	14	B	18	B
177	Lead Hill Blvd/Harding Blvd	11	B	22	C
178	Estates Dr/Harding Blvd	17	B	20	B
179	Roseville Square/Harding Blvd	10	B	25	C
180	Stone Point Dr/N. Sunrise Ave	3	A	5	A
181	N. Sunrise Ave/Automall Dr	17	B	23	C
182	Lead Hill Blvd/N. Sunrise Ave	20	C	41	D
183	Sierra Gardens Dr/N. Sunrise Ave	13	B	22	C
184	Oak Ridge Dr/Sunrise Ave	4	A	4	A
185	Frances Dr/Sunrise Ave	5	A	7	A

Table 10:
Roseville Signalized Intersection Operations – Existing Conditions (HCM Methodology)

Intersection		AM Peak Hour		PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
186	Coloma Way/Sunrise Ave	13	B	17	B
187	Sun Tree Dr/Sunrise Ave	13	B	14	B
188	Kensington Dr/Sunrise Ave	10	A	9	A
189	Rocky Ridge Dr/Stone Point Dr	4	A	6	A
190	Lead Hill Blvd/Rocky Ridge Dr	15	B	24	C
191	Professional Dr/Rocky Ridge Dr	9	A	14	B
192	Meadowlark Way/Rocky Ridge Dr	7	A	8	A
193	McLaren Dr/Rocky Ridge Dr	8	A	8	A
194	Secret Ravine Pkwy/Sierra College	16	B	17	B
195	Miners Ravine Pkwy/Sierra College Blvd	6	A	6	A
196	Olympus Dr/Sierra College Blvd	21	C	18	B
197	Indigo Creek Apts Dwy/Sierra College Blvd	19	B	26	C
198	Old Auburn Rd/Sierra College Blvd	31	C	34	C
199	Olympus Dr/Europa St	10	B	5	A
200	Secret Ravine Pkwy/Scarborough Dr	14	B	14	B
203	I-80 WB Ramps/Riverside Ave	11	B	26	C
204	Orlando Ave/Riverside Ave	22	C	32	C
205	Junction Blvd/Stonecrest Dr	15	B	11	B
207	Junction Blvd/Woodcreek Oaks Blvd	16	B	16	B
208	Junction Blvd/Country Club Dr	23	C	14	B
209	Junction Blvd/Revere Dr	5	A	4	A
210	Junction Blvd/Americana Dr	13	B	6	A
211	Junction Blvd/Sawtell Rd	9	A	9	A
212	PFE Rd/Hilltop Cir	12	B	8	A
P1	Darling/Riverside (Located in POD)	17	B	18	B
P2	Vernon/Douglas (Located in POD)	24	C	32	C
P3	Vernon/Grant (Located in POD)	5	A	7	A
P4	Vernon/Judah (Located in POD)	3	A	4	A
P5	Vernon/Lincoln (Located in POD)	12	B	16	B
P6	Main/Washington (Located in POD)	26	C	30	C
P7	Oak/Grant (Located in POD)	15	B	15	B
P8	Oak/Lincoln (Located in POD)	8	A	9	A

Notes:
1. Intersections located in Pedestrian Overlay District (POD) are exempt from City's LOS policies.

Table 10:
Roseville Signalized Intersection Operations – Existing Conditions (HCM Methodology)

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay	LOS	Avg. Delay	LOS

2. Traffic count data not available at the signalized HP South Dwy./Foothills Blvd. intersection. Results shown as LOS C or better based on field observations.
3. Refer to Chapter I for description of Circular 212 and HCM analysis methods.
4. The Oak Street/Washington Boulevard intersection was not analyzed as a signalized intersection. In April 2014, this signal was removed and replaced with a roundabout.

Source: Fehr & Peers, 2015

Table 11:
City of Roseville Signalized Intersection Operations – Existing Conditions (HCM methodology)

Level of Service	AM Peak Hour	PM Peak Hour
Total Intersections	160	160
LOS A-C	157 (98%)	130 (81%)
LOS D	3 (2%) ▪ Blue Oaks/Foothills ▪ Cirby/Sunrise ▪ Douglas/Sierra College	24 (15%) ▪ Baseline/Fiddyment ▪ Blue Oaks/Woodcreek Oaks ▪ Cirby/Foothills ▪ Douglas/Eureka ▪ Douglas/Sierra Gardens ▪ Douglas/E. Roseville Pkwy ▪ Douglas/Harding ▪ Douglas/Sierra College ▪ Eureka/N. Sunrise ▪ Baseline/Foothills ▪ Pleasant Grove/Foothills ▪ Roseville Pkwy/Galleria ▪ Lead Hill/N. Sunrise ▪ Fairway/Pleasant Grove ▪ Highland Pointe/Pleasant Grove ▪ Pleasant Grove/ Washington ▪ Roseville Pkwy/Creekside Ridge ▪ E. Roseville Pkwy/N. Sunrise ▪ Roseville Pkwy/Reserve ▪ Five Star/Stanford Ranch ▪ Blue Oaks/Washington ▪ Douglas/I-80 WB Ramps ▪ SR65 NB Ramps/Stanford Ranch ▪ Eureka/Taylor
LOS E	0	6 (4%) ▪ Cirby/Sunrise ▪ Cirby/Riverside ▪ Douglas/Rocky Ridge ▪ Douglas/N. Sunrise ▪ Pleasant Grove/Roseville Pkwy ▪ E. Roseville Pkwy/Taylor
LOS F	0	0
Percent Operating at LOS D, E, or F	2%	19%

Notes:
1. Excludes the eight signalized intersections located in the City's Pedestrian Overlay District (POD).

Source: Fehr & Peers, 2015.

ANALYSIS OF ADJACENT JURISDICTION FACILITIES

Table 12 displays AM and PM peak hour operations at study intersections outside of Roseville. Refer to separately bound Appendix A for technical calculations.

Table 12:
Intersection Operations Outside of Roseville – Existing Conditions

Intersection	Jurisdiction	Control Type	AM Peak Hour		PM Peak Hour	
			Avg. Delay or V/C	LOS	Avg. Delay or V/C	LOS
Locust Rd/Baseline Rd	Placer County	AWSC	30	D	66	F
Watt Ave/PFE Rd	Placer County	AWSC	38	E	13	B
Walerga Rd/PFE Rd	Placer County	Signal	0.86	D	0.77	C
Cook Riolo Rd/PFE Rd	Placer County	AWSC	15	B	11	B
Fiddyment Rd/Sunset Blvd W	Placer County	TWSC	3 (12)	A (B)	6 (19)	A (C)
Fiddyment Rd/Athens Ave	Placer County	AWSC	9	A	11	B
Industrial Ave/Athens Ave	Placer County	Signal	0.22	A	0.36	A
N Foothills Blvd/Athens Ave	Placer County	TWSC	2 (11)	A (B)	3 (14)	A (B)
Cincinnati Ave/W Sunset Blvd	Placer County	Signal	0.27	A	0.45	A
Pleasant Grove Rd N/Riego Rd	Sutter County	AWSC	61	F	33	D
Pleasant Grove Rd S/Riego Rd	Sutter County	AWSC	65	F	43	E
Watt Ave/Elverta Rd	Sacramento County	Signal	0.39	A	0.44	A
Walerga Rd/Elverta Rd	Sacramento County	Signal	0.73	C	0.65	B
Watt Ave/Antelope Rd	Sacramento County	Signal	0.70	C	0.68	B
Walerga Rd/Antelope Rd	Sacramento County	Signal	0.63	B	0.75	C
Watt Ave/Elkhorn Blvd	Sacramento County	Signal	0.61	B	0.58	A
Walerga Rd/Elkhorn Blvd	Sacramento County	Signal	0.54	A	0.72	C
Fiddyment Rd/Moore Rd	Lincoln	AWSC	8	A	8	A
Sorrento Pkwy/Ferrari Ranch Rd	Lincoln	AWSC	9	A	9	A
Ferrari Ranch Rd/Groveland Ln	Lincoln	Signal	17	B	9	A
Ferrari Ranch Rd/Joiner Pkwy	Lincoln	Signal	7	A	7	A
Joiner Pkwy/Twelve Bridges Dr	Lincoln	Signal	31	C	27	C
Sunset Blvd/SR65 NB Ramps	Caltrans	Signal	20	B	19	B
Sunset Blvd/SR65 SB Ramps	Caltrans	Signal	17	B	17	B

Table 12:
Intersection Operations Outside of Roseville – Existing Conditions

Intersection	Jurisdiction	Control Type	AM Peak Hour		PM Peak Hour	
			Avg. Delay or V/C	LOS	Avg. Delay or V/C	LOS
Nelson Ln / SR65	Caltrans	Signal	8	A	7	A

Notes:
1. Refer to Chapter 1 for analysis methods applied for each jurisdiction and signal control type.
2. AWSC = All Way Stop Control. TWSC = Two-Way Stop Control.

At two-way stop control intersections, delay/LOS for worst movement shown in parenthesis with overall delay/LOS not shown in parenthesis.

Source: Fehr & Peers, 2015.

The following intersections currently operate at LOS D or worse during the AM and/or PM peak hours:

AM Peak Hour

- Locust Road / Baseline Road (LOS D)
- Watt Avenue/PFE Road (LOS E)
- Walerga Avenue/PFE Road (LOS D)
- Pleasant Grove Rd N / Riego Rd (LOS F)
- Pleasant Grove Rd S / Riego Rd (LOS F)

PM Peak Hour

- Locust Road / Baseline Road (LOS F)
- Pleasant Grove Rd N / Riego Rd (LOS D)
- Pleasant Grove Rd S / Riego Rd (LOS E)

With the exception of the signalized Walerga Road/PFE Road intersection, each of these intersections is unsignalized and located on major commute corridors.

Table 13 displays the number of lanes, average daily traffic (ADT) volume, volume-to-capacity (v/c) ratio, and LOS at study roadways located in Rocklin, Placer County, Sutter County, and Sacramento County. These volumes were obtained from a variety of sources including counts conducted in 2013-2014 and volumes shown in recent environmental documents. As shown, the majority of study roadways currently operate at LOS C or better. However, the two-lane segment of Walerga Road from Baseline Road southerly into Sacramento County currently operates at LOS E or F.

Table 13:
Roadway Segment Operations Outside of Roseville – Existing Conditions

Segment	Jurisdiction	Number of Lanes	Average Daily Traffic (ADT)	V/C Ratio	LOS
Baseline Road west of Watt Avenue	Placer County	2	10,000	0.56	A
Watt Avenue south of Baseline Road	Placer County	2	5,800	0.32	A
Sunset Boulevard West west of Fiddyment Road	Placer County	2	2,200	0.12	A
Sunset Blvd West east of Pleasant Grove Rd	Placer County	2	2,000	0.11	A
Sunset Blvd west of SR 65	Placer County	4	14,700	0.41	A
Athens Avenue east of Fiddyment Road	Placer County	2	5,300	0.29	A
Fiddyment Road south of Athens Avenue	Placer County	2	7,500	0.42	A
Brewer Road north of Baseline Road	Placer County	2	200	0.01	A
Watt Avenue south of PFE Road	Placer County	2	9,300	0.52	A
Walerga Road south of Baseline Road	Placer County	2	16,800	0.93	E
Watt Avenue south of Elverta Road	Sacramento County	4	23,600	0.66	B
Watt Avenue south of Antelope Road	Sacramento County	4	27,100	0.75	C
Watt Avenue south of Elkhorn Boulevard	Sacramento County	6	32,600	0.60	B
Walerga Road south of PFE Road	Sacramento County	2	18,900	1.05	F
Walerga Road south of Antelope Road	Sacramento County	4	32,000	0.89	D
Walerga Road south of Elkhorn Boulevard	Sacramento County	4	19,900	0.55	A
Pleasant Grove Rd north of Baseline Rd	Sutter County	2	1,200	0.07	A
Riego Road east of SR 70/99	Sutter County	2	8,200	0.46	A
Howsley Road east of SR 70/99	Sutter County	2	2,700	0.15	A
Sunset Boulevard east of SR 65	City of Rocklin	4	23,200	0.64	B
Blue Oaks Blvd east of Lonetree Blvd	City of Rocklin	4	10,800	0.30	A
Wildcat Blvd north of Ranch View Drive	City of Rocklin	4	7,200	0.20	A

Notes:
1. V/C Ratio = Volume-to-Capacity Ratio. LOS = Level of Service. Values rounded to the nearest 100 vehicles.

Source: Fehr & Peers, 2015.

Table 14 displays AM and PM peak hour operations at study freeway facilities. Refer to separately bound Appendix A for technical calculations.

Table 14:
Freeway Level of Service – Existing Conditions

SR 65 Freeway Facility	Type	AM Peak Hour		PM Peak Hour	
		Density	LOS	Density	LOS
Northbound State Route 65					
I-80 to Galleria Blvd	Basic	-	F	-	F
Galleria Blvd Off-Ramp	Diverge	-	F	-	F
Galleria Blvd On-Ramp	Merge	-	F	39	E
Pleasant Grove Blvd Off-Ramp	Diverge	-	F	-	F
Pleasant Grove On to Blue Oaks Off-Ramp	Weave	N/A	C	N/A	D
Blue Oaks Blvd Loop On-Ramp	Merge	27	C	30	D
Blue Oaks Blvd On to Sunset Off-Ramp	Basic	24	C	28	D
Sunset Blvd Off-Ramp	Diverge	17	B	21	C
Sunset Blvd Loop On-Ramp	Merge	14	B	24	C
Sunset Blvd Slip On-Ramp	Merge	13	B	24	C
Sunset Blvd to Twelve Bridges	Basic	14	B	26	D
Twelve Bridges Dr Off-Ramp	Diverge	19	B	31	D
Twelve Bridges Dr On-Ramp to Lincoln Off-Ramp	Weave	N/A	A	N/A	C
Lincoln Blvd Off-Ramp to Ferrari Ranch Rd	Basic	6	A	10	A
Ferrari Ranch Rd Off-Ramp	Basic	6	A	10	A
Ferrari Ranch Rd On-Ramp	Merge	8	A	9	A
Ferrari Ranch Rd to Nelson Ln	Basic	7	A	8	A
Southbound State Route 65					
Nelson Ln to Ferrari Ranch Rd	Basic	8	A	8	A
Ferrari Ranch Rd Off-ramp	Diverge	12	B	11	B
Ferrari Ranch Rd Loop On-Ramp	Basic	9	A	6	A
Ferrari Ranch Rd Direct On-Ramp	Merge	14	B	8	A
Ferrari Ranch Rd to Lincoln Blvd	Basic	18	C	10	A
Lincoln Blvd On-Ramp to Twelve Bridges Off-Ramp	Weave	N/A	C	N/A	A

Table 14:
Freeway Level of Service – Existing Conditions

SR 65 Freeway Facility	Type	AM Peak Hour		PM Peak Hour	
		Density	LOS	Density	LOS
Twelve Bridges Dr Loop On-Ramp	Merge	29	D	20	C
Twelve Bridges Dr to Sunset Blvd	Basic	27	D	18	B
Sunset Blvd Off-Ramp	Diverge	20	C	10	B
Sunset Blvd Loop On-Ramp	Merge	28	D	23	C
Sunset Blvd Direct On-Ramp	Merge	24	C	22	C
Sunset Blvd On-Ramp to Blue Oaks Blvd Off-Ramp	Basic	29	D	26	C
Blue Oaks Blvd Off-Ramp	Diverge	33	D	31	D
Blue Oaks Blvd Loop On-Ramp	Merge	29	D	27	C
Blue Oaks Blvd On to Pleasant Grove Off	Weave[1]	-	F	N/A	F
Pleasant Grove Blvd Loop On-Ramp	Merge	32	D	30	D
Pleasant Grove Blvd Direct On-Ramp	Merge	37	E	34	D
Galleria Blvd Off-Ramp	Diverge	-	F	39	E
Galleria Blvd On-Ramp	Merge	25	C	26	C
Galleria Blvd to I-80	Basic	23	C	24	C

Notes:
1. Field observations reveal that reoccurring congestion at the SR 65/Pleasant Grove Blvd. SB loop on-ramp causes traffic on SB SR 65 to queue back to Blue Oaks Boulevard and beyond. Therefore, results shown as LOS F.
2. 'N/A' = Not applicable because density not calculated for weave segments based on Leisch method.
3. '-' = Density not reported for facilities operating at LOS F.

Source: Fehr & Peers, 2015.

The following facilities currently operate at LOS E or F during the AM and/or PM peak hours:

AM Peak Hour

- NB SR 65 from I-80 to Galleria Boulevard (LOS F)
- NB SR 65 off-ramp at Galleria Boulevard (LOS F)
- NB SR 65 on-ramp at Galleria Boulevard (LOS F)
- NB SR 65 off-ramp at Pleasant Grove Boulevard (LOS F)

- SB SR 65 weave from Blue Oaks Boulevard to Pleasant Grove Boulevard (LOS F)
- SB SR 65 diagonal on-ramp at Pleasant Grove Boulevard (LOS E)
- SB SR 65 off-ramp at Galleria Boulevard (LOS F)

PM Peak Hour

- NB SR 65 from I-80 to Galleria Boulevard (LOS F)
- NB SR 65 off-ramp at Galleria Boulevard (LOS F)
- NB SR 65 on-ramp at Galleria Boulevard (LOS E)
- NB SR 65 off-ramp at Pleasant Grove Boulevard (LOS F)
- SB SR 65 weave from Blue Oaks Boulevard to Pleasant Grove Boulevard (LOS F)
- SB SR 65 off-ramp at Galleria Boulevard (LOS E)

4. EXISTING PLUS PROJECT CONDITIONS

This chapter analyzes the impacts of the proposed project under existing conditions. **Figure 5** shows the project site plan including the locations of the five planned traffic signals within the plan.

TRIP GENERATION

The project's vehicular trip generation was estimated based on trip rates published in *Trip Generation, 9th Edition* (Institute of Transportation Engineers, 2012). As shown in **Table 15,** the project would generate approximately 45,500 gross daily trips, 2,800 gross AM peak hour trips, and 4,375 gross PM peak hour trips.

As noted earlier, the land uses analyzed in this study include 110 more units than is currently proposed. Accordingly, the conclusions of this study are considered somewhat conservative because the project being analyzed generates about three percent more traffic than the currently proposed uses.

The internalization of trips within the project site was estimated using a Mixed-Use Trip Generation Model (MXD), which was developed for the US Environmental Protection Agency (EPA) to estimate internal trip-making and external trips by non-auto travel modes. This model was developed by consultants and academic researchers to more accurately estimate the external vehicular trip generation of mixed-use land development projects than prior methods (e.g., ITE internalization spreadsheet). The model was developed based on empirical evidence at 240 mixed-use projects located across the U.S. The model considers various built environment variables such as land use density, regional location, proximity to transit, and various design variables when calculating the project's internal trips, and external trips made by auto, transit, and non-motorized modes. The MXD model has been applied in numerous EIRs throughout California.

According to the MXD output (refer to separately bound Appendix B), 19 to 20 percent of daily and AM peak hour trips, and 25 percent of PM peak hour trips would remain internal to the project site. Given the lack of transit service in the area and dearth of nearby land uses within walking/biking distance of the project, all external trips are expected to be made by auto. It is recognized that "pass-by" trips typically constitute a portion of the trips generated by retail uses. However, in this instance, the project would be not situated in proximity to any existing traffic streams from which pass-by traffic can be drawn. Accordingly, all retail trips are necessarily categorized as new. As shown in Table 15, the proposed project would generate approximately 36,600 new daily trips, 2,180 new AM peak hour trips, and 3,260 new PM peak hour trips.

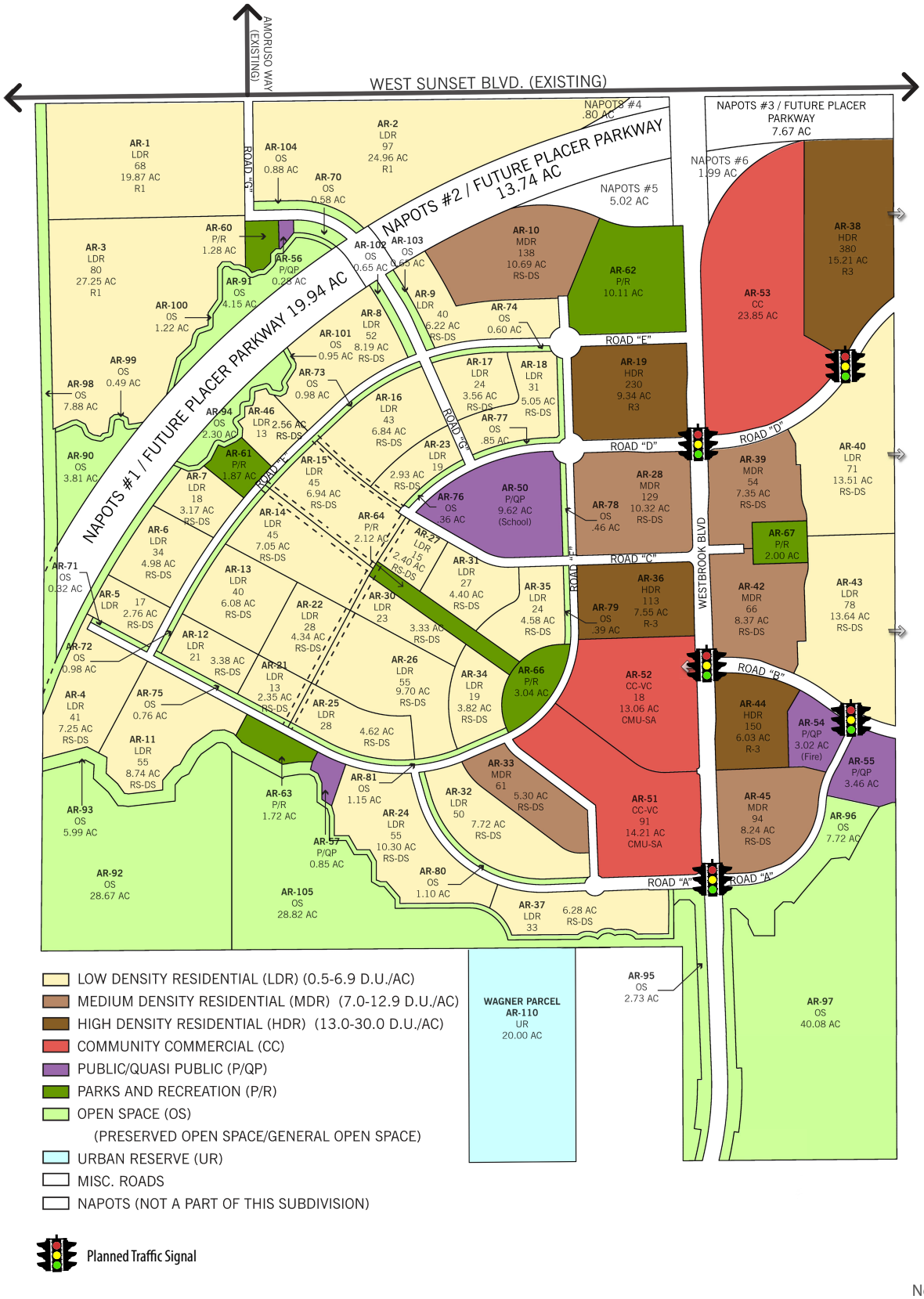

Figure 5

Project Site Plan

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Table 15:
Proposed Project Trip Generation

Land Use	Amount	Trip Rate			Trips[1]		
		Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
Single-Family Residential[2]	1,954 du's	9.52	0.75	1.00	18,602	1,466	1,954
Multi-Family Residential	982 du's	6.65	0.51	0.62	6,530	501	609
Retail[3]	442 ksf	42.7	0.96	3.71	18,873	424	1,640
Office[3]	34 ksf	11.03	1.56	1.49	377	53	51
Elementary School[4]	800 students	1.29	0.45	0.15	1,032	360	120
				Gross Trips	45,5141	2,804	4,374
				Internal Trips[5]	-8,823	-622	-1,118
				New Trips	36,591	2,182	3,256

Notes:
1. Trip rates based on Trip Generation, 9th Edition (Institute of Transportation Engineers, 2012).
2. Per the project applicant, all medium-density residential uses (ranging from 7 to 13 units per acre) were assumed to be single-family so as to provide a conservative analysis.
3. Per the project applicant, the 27.2-acre Village Center is assumed to consist of 15% office and 85% retail, which yields 34 ksf office and 204 ksf retail. Although the 23.85-acre Community Commercial parcel may permit a mix of retail and office, a worst-case assumption of 100% retail 238 KSF was assumed.
4. Typical elementary school size and attendance assumed.
5. Internalization of trips based on output from the mixed-use trip generation model (see previous page).

Source: Fehr & Peers, 2015.

TRAFFIC FORECASTS

The proposed project's land uses were added to the base year version of the City of Roseville travel demand model. The model was run, and the results were checked to confirm that the external vehicle trips generated from the project's traffic analysis zones (TAZs) matched the trip generation totals in Table 15.

The model's predicted difference in trips at study intersections, roadways, and freeway facilities was added to the existing volumes to yield the 'existing plus project" traffic forecasts. This process is not a simple layering of project trips on top of existing volumes; rather, it considers the effects that the project could have on sub-regional travel patterns. For instance, the introduction of new retail/office within the project could cause some residents of West Roseville to shop or work at the project site, versus travel to comparable destinations (e.g., along the SR 65 corridor). In addition, external vehicle trips added by the project to certain roadways (e.g., Blue Oaks Boulevard) could cause a redistribution of background traffic to less busy roadways. The forecasts also consider the potential for background traffic to become redistributed in response to the new public street connection of Westbrook Boulevard from Sunset Boulevard West to Blue Oaks Boulevard.

CITY OF ROSEVILLE ROADWAY SYSTEM

Figure 6 shows the existing plus project ADT forecasts. **Figure 7** shows the change in ADT on roadways within Roseville between existing and existing plus project conditions. This figure is analogous to a trip distribution figure. It shows the project adding the greatest amount of trips to nearby segments of Blue Oaks Boulevard and Fiddyment Road, with volumes gradually diminishing on segments further from the project site. Project-related changes in traffic volumes on Placer County roadways are discussed later in this chapter.

Figure 8 shows the existing plus project peak hour volumes at all signalized intersections in the City of Roseville.

Table 16 displays existing plus project AM and PM peak hour operations at all signalized intersections in Roseville based on the HCM analysis methods described in Chapter 1. Refer to separately bound Appendix B for technical calculations.

Table 17 summarizes existing plus project AM and PM peak hour operations at all signalized intersections in Roseville. As shown, the proposed project would cause the percentage of signalized intersections in the City of Roseville operating at LOS C or better during the AM peak hour to decrease from 98 to 96 percent. The proposed project would cause the percentage of signalized intersections in the City of Roseville operating at LOS C or better during the PM peak hour to decrease from 81 to 79 percent.

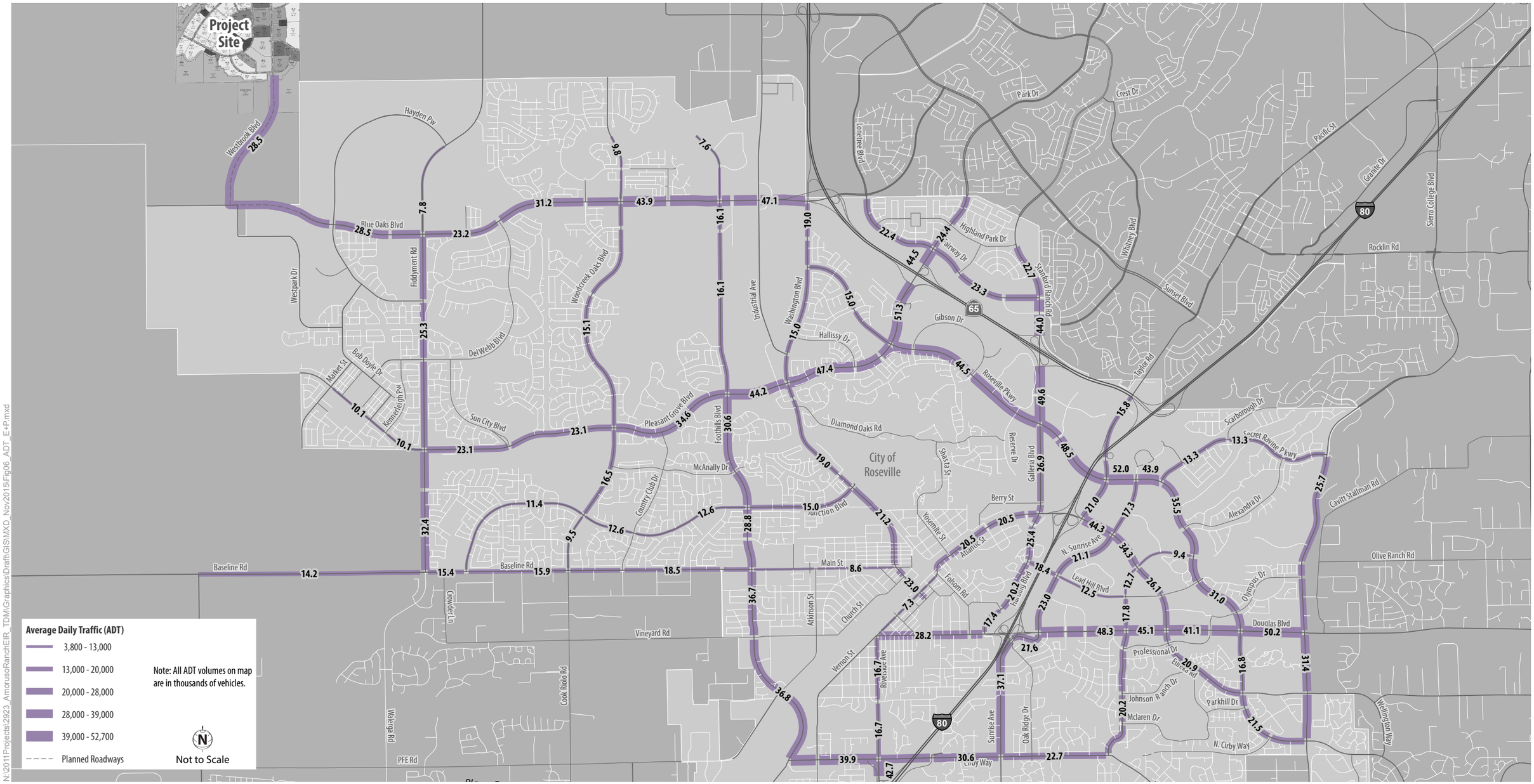

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Figure 6

Average Daily Traffic Volume (ADT) on Roseville Roadways - Existing Plus Project Conditions

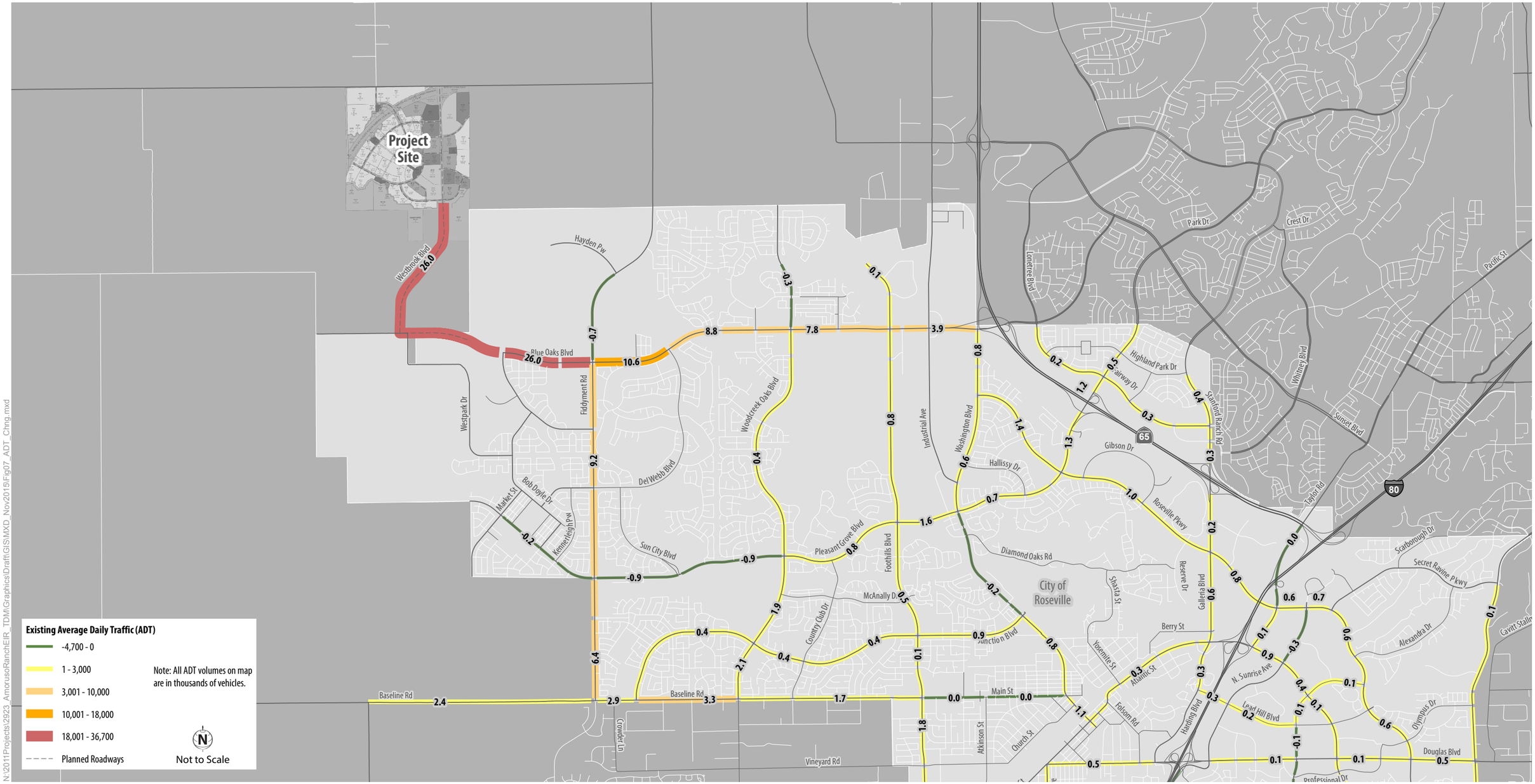

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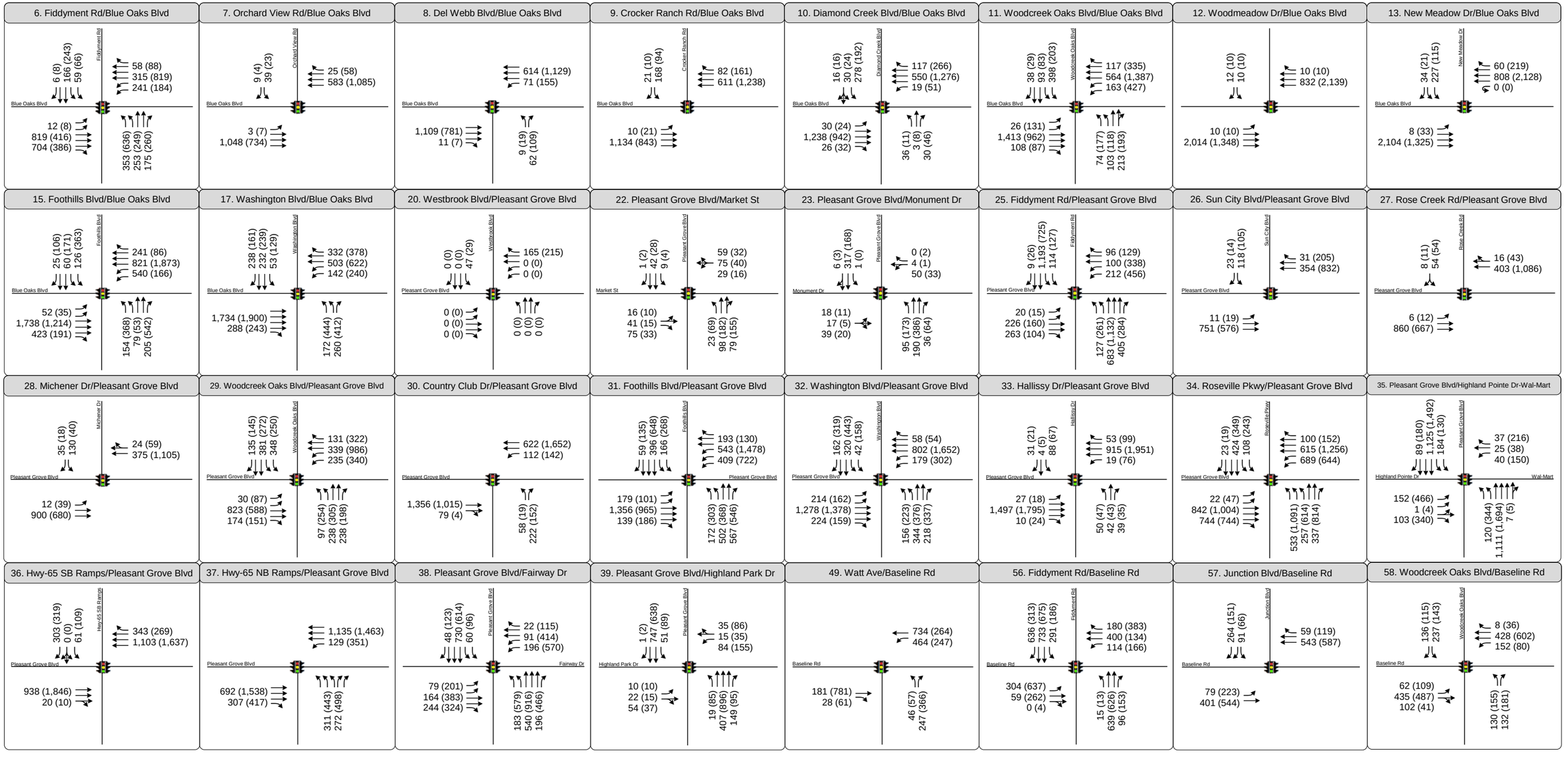
Figure 7

Net Change in Average Daily Traffic (ADT) on Roseville Roadways - Existing Plus Project Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Note: Intersection numbering is sequential under CIP/Cumulative conditions, but not under existing conditions (i.e., intersections 1-5 are future intersections)

Figure 8a

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

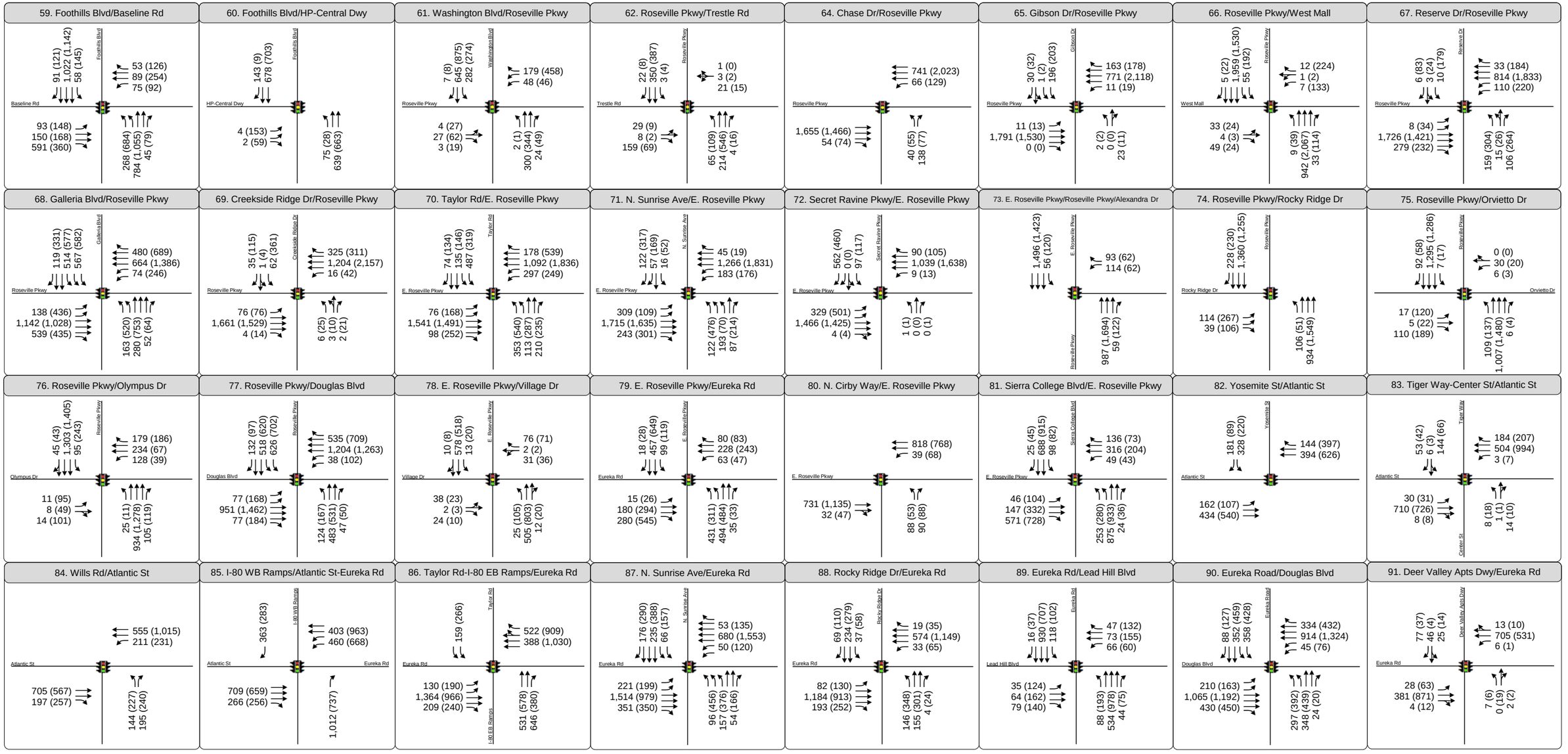
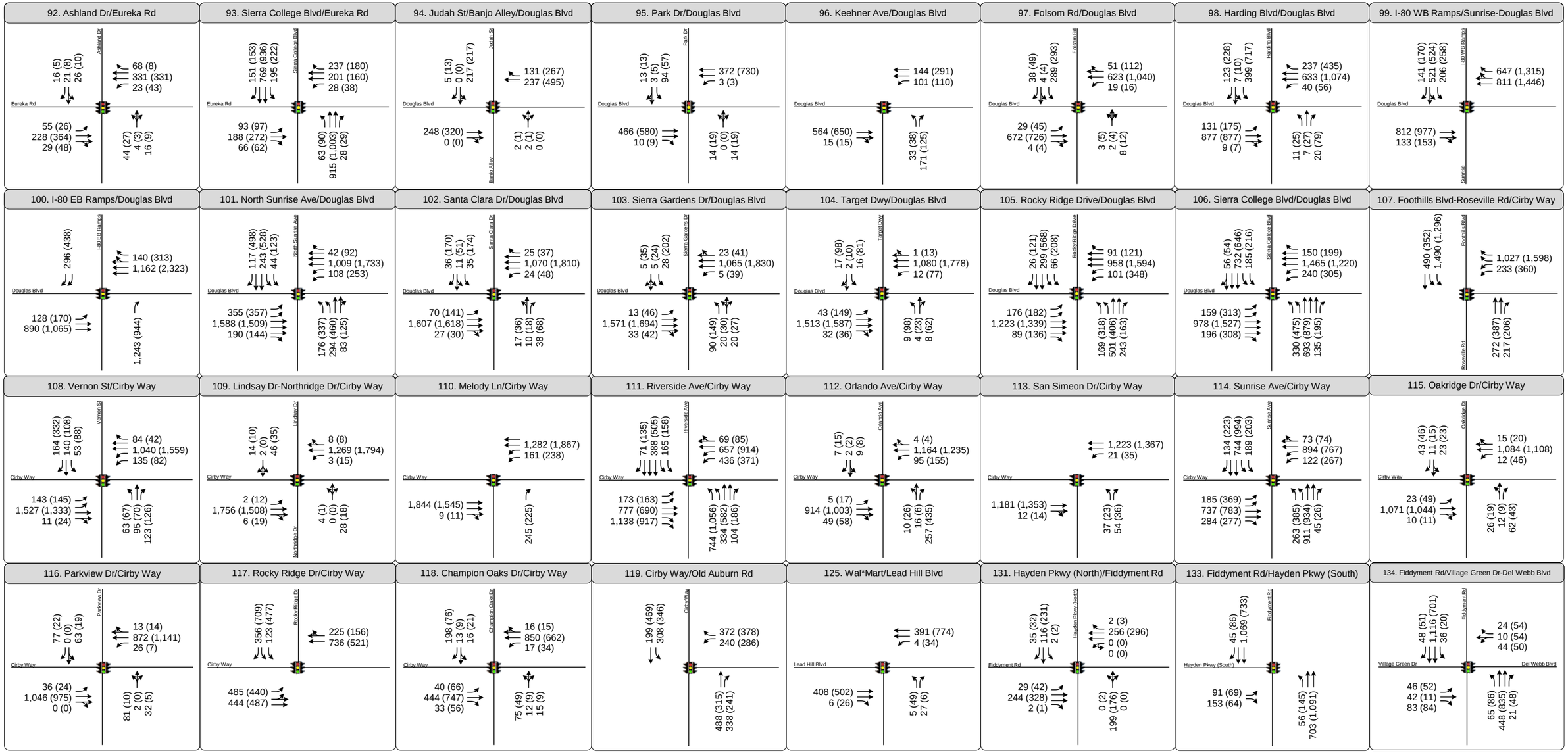


Figure 8b

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure 8c

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

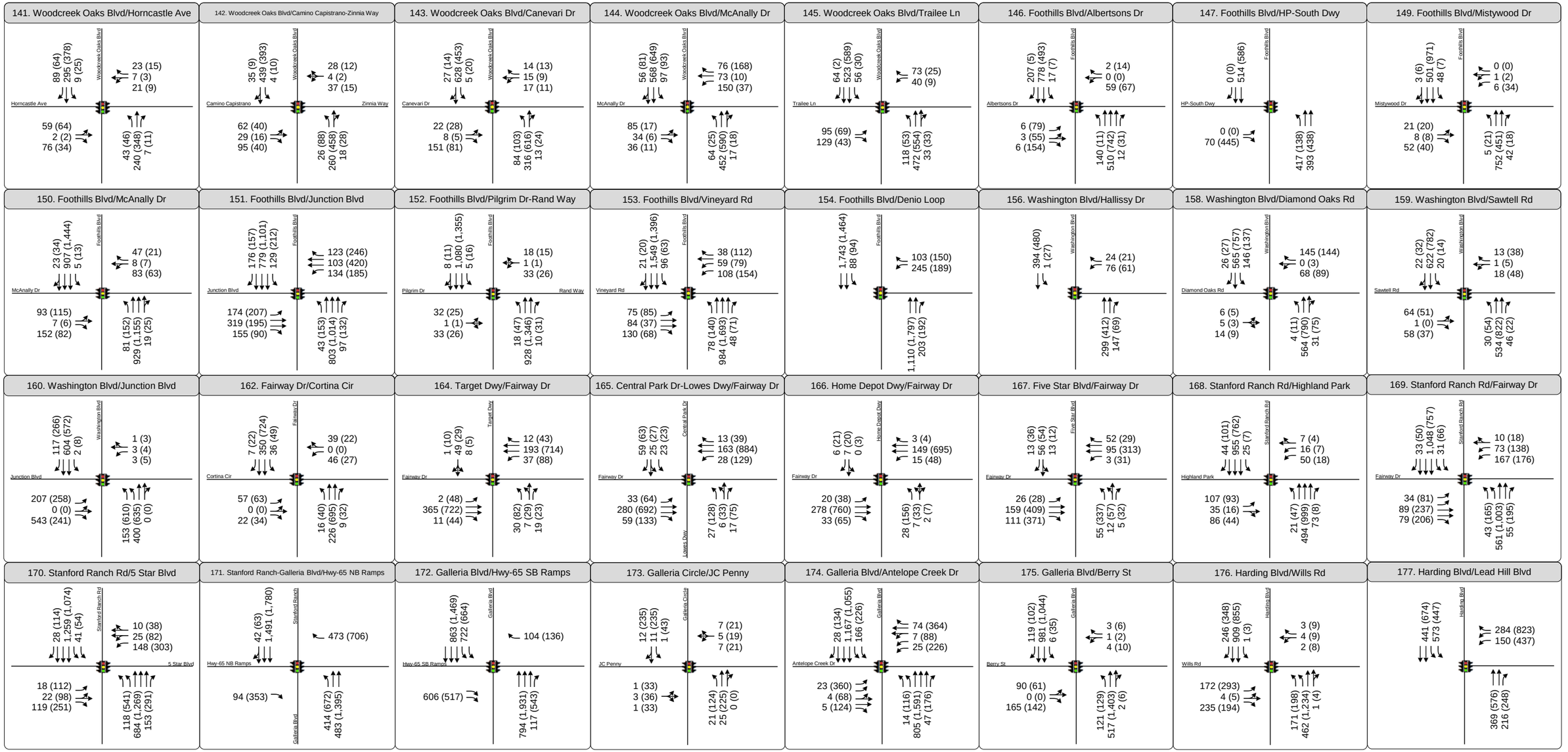
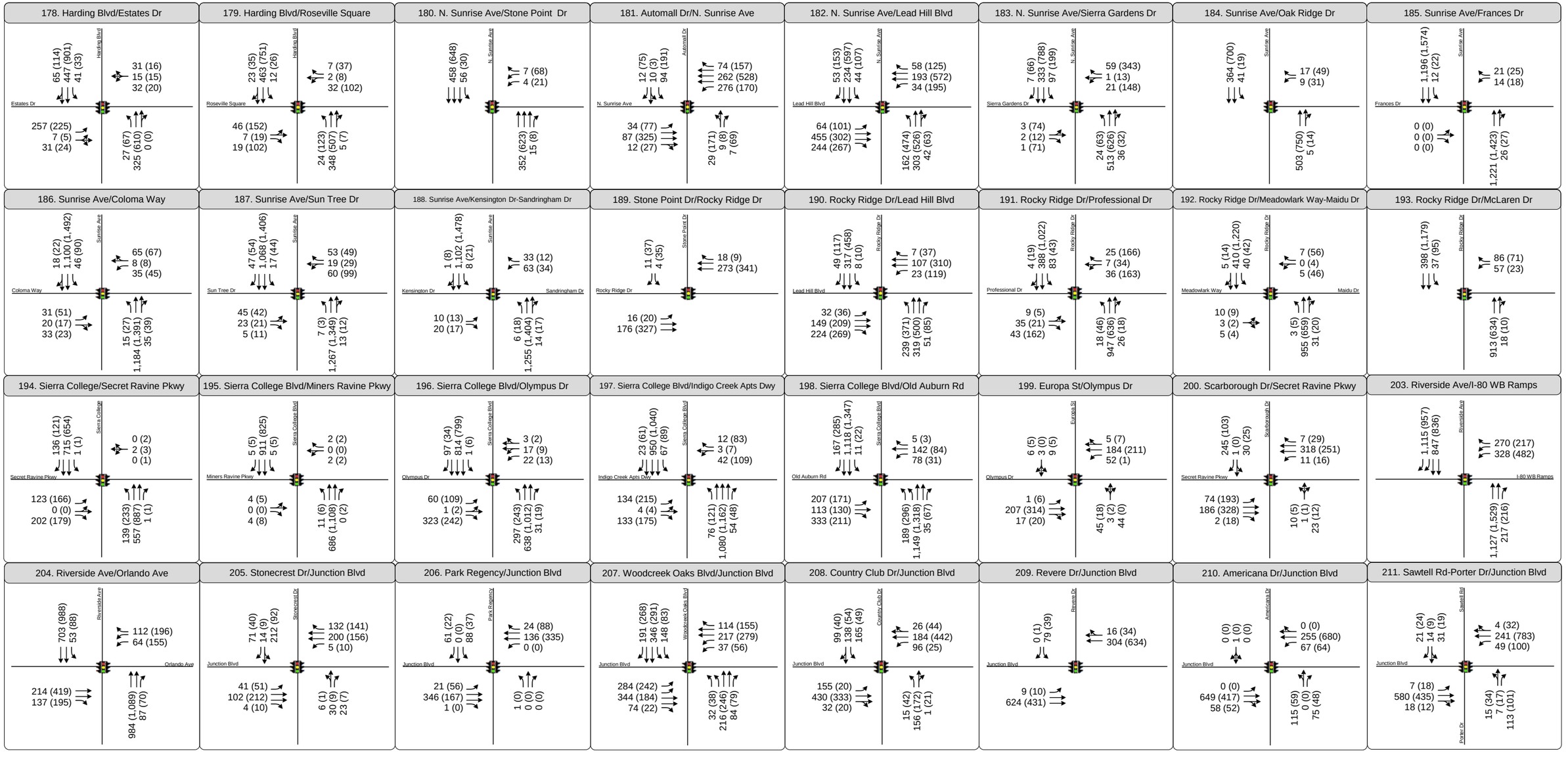


Figure 8d

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions



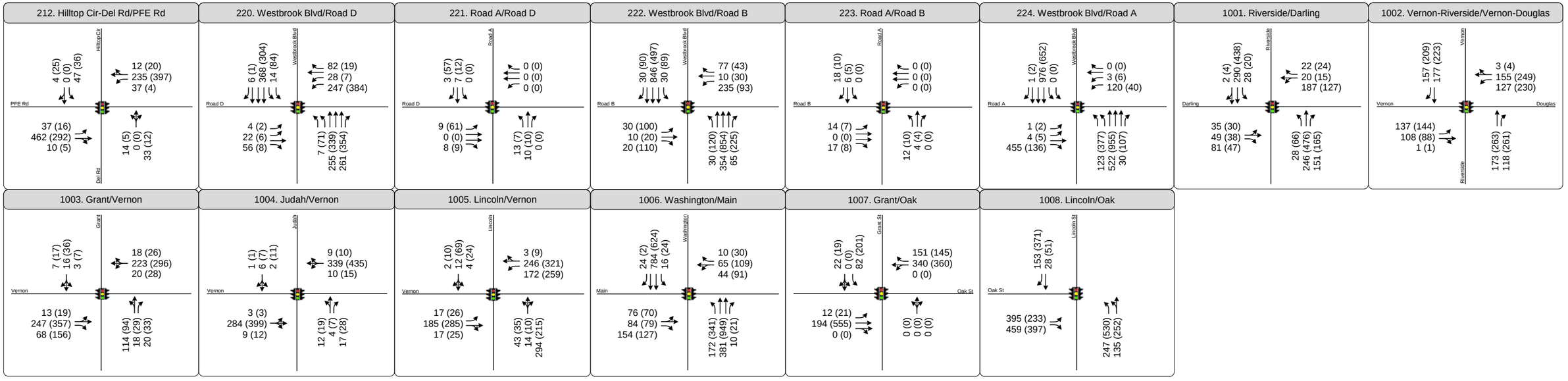
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure 8e

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions



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Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure 8f

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

Table 16:
Roseville Signalized Intersection Operations – Existing Plus Project Conditions (HCM Methodology)

Intersection		Existing Conditions				Existing Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
6	Blue Oaks Blvd/Fiddyment Rd	18	B	18	B	31	C	27	C
7	Blue Oaks Blvd/Orchard View Rd	3	A	3	A	4	A	3	A
8	Blue Oaks Blvd/Del Webb Blvd	7	A	10	A	8	A	9	A
9	Blue Oaks Blvd/Crocker Ranch Rd	8	A	7	A	8	A	6	A
10	Blue Oaks Blvd/Diamond Creek Blvd	21	C	20	B	19	B	22	C
11	Blue Oaks Blvd/Woodcreek Oaks Blvd	31	C	37	D	27	C	40	D
12	Blue Oaks Blvd/Woodmeadow Dr	6	A	11	B	6	A	13	B
13	Blue Oaks Blvd/New Meadow Dr	8	A	19	B	6	A	17	B
15	Blue Oaks Blvd/Foothills Blvd	38	D	33	C	27	C	44	D
17	Blue Oaks Blvd/Washington Blvd	24	C	42	D	24	C	52	D
20	Pleasant Grove Blvd./Westbrook Blvd.	10	B	7	A	14	B	8	A
22	Market St/Pleasant Grove Blvd	17	B	15	B	18	B	16	B
23	Monument Dr/Pleasant Grove Blvd	14	B	12	B	15	B	12	B
25	Pleasant Grove Blvd/Fiddyment Rd	26	C	27	C	30	C	29	C
26	Pleasant Grove Blvd/Sun City Blvd	4	A	5	A	8	A	5	A
27	Pleasant Grove Blvd/Rose Creek Rd	4	A	4	A	4	A	5	A
28	Pleasant Grove Blvd/Michener Dr	6	A	6	A	6	A	6	A
29	Pleasant Grove Blvd/Woodcreek Oaks	26	C	28	C	29	C	29	C
30	Pleasant Grove Blvd/Country Club Dr	15	B	10	A	16	B	10	B
31	Pleasant Grove Blvd/Foothills Blvd	31	C	52	D	33	C	54	D
32	Pleasant Grove Blvd/Washington Blvd	31	C	41	D	31	C	43	D
33	Pleasant Grove Blvd/Hallissy Dr	14	B	25	C	15	B	19	B
34	Pleasant Grove Blvd/Roseville Pkwy	27	C	67	E	29	C	58	E
35	Highland Pointe Dr/Pleasant Grove	23	C	47	D	22	C	47	D
36	Pleasant Grove Blvd/Hwy-65 SB Ramps	12	B	11	B	11	B	12	B
37	Pleasant Grove Blvd/Hwy-65 NB	22	C	21	B	26	C	28	C
38	Fairway Dr/Pleasant Grove Blvd	28	C	41	D	29	C	47	D
39	Highland Park Dr/Pleasant Grove Blvd	17	B	25	C	16	B	25	C
49	Baseline Rd/Watt Ave	13	B	31	C	15	B	35	C
56	Baseline Rd/Fiddyment Rd	28	C	41	D	40	D	63	E
57	Baseline Rd/Junction Blvd	12	B	11	B	12	B	13	B
58	Baseline Rd/Woodcreek Oaks Blvd	25	C	23	C	36	D	29	C
59	Baseline Rd/Foothills Blvd	33	C	36	D	38	D	38	D
60	HP-Central Dwy/Foothills Blvd	3	A	5	A	3	A	6	A
61	Roseville Pkwy/Washington Blvd	12	B	16	B	13	B	21	C

Table 16:
Roseville Signalized Intersection Operations – Existing Plus Project Conditions (HCM Methodology)

Intersection		Existing Conditions				Existing Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
62	Trestle Rd/Roseville Pkwy	11	B	9	A	11	B	9	A
64	Roseville Pkwy/Chase Dr	9	A	12	B	9	A	14	B
65	Roseville Pkwy/Gibson Dr	13	B	13	B	13	B	14	B
66	West Mall/Roseville Pkwy	5	A	25	C	6	A	27	C
67	Roseville Pkwy/Reserve Dr	12	B	37	D	12	B	41	D
68	Roseville Pkwy/Galleria Blvd	22	C	53	D	22	C	65	E
69	Roseville Pkwy/Creekside Ridge Dr	10	A	37	D	11	B	39	D
70	E. Roseville Pkwy/Taylor Rd	29	C	57	E	29	C	58	E
71	E. Roseville Pkwy/N. Sunrise Ave	21	C	39	D	21	C	40	D
72	E. Roseville Pkwy/Secret Ravine Pkwy	17	B	32	C	17	B	35	C
73	Alexandra Dr/E. Roseville Pkwy	12	B	16	B	12	B	19	B
74	Rocky Ridge Dr/E. Roseville Pkwy	8	A	17	B	8	A	16	B
75	Orvietto Dr/Roseville Pkwy	15	B	28	C	15	B	27	C
76	Olympus Dr/Roseville Pkwy	17	B	28	C	17	B	31	C
77	Douglas Blvd/Roseville Pkwy	33	C	48	D	34	C	47	D
78	Village Dr/E. Roseville Pkwy	13	B	15	B	13	B	15	B
79	Eureka Rd/E. Roseville Pkwy	22	C	26	C	23	C	26	C
80	E. Roseville Pkwy/N. Cirby Way	7	A	8	A	7	A	8	A
81	E. Roseville Pkwy/Sierra College Blvd	23	C	25	C	23	C	25	C
82	Atlantic St/Yosemite St	16	B	14	B	16	B	14	B
83	Atlantic St/Tiger Way	15	B	11	B	15	B	11	B
84	Atlantic St/Wills Rd	12	B	12	B	12	B	12	B
85	Atlantic St/I-80 WB Ramps	9	A	10	B	9	A	10	A
86	Eureka Rd/Taylor Rd	29	C	44	D	30	C	45	D
87	Eureka Rd/N. Sunrise Ave	21	C	35	D	21	C	42	D
88	Eureka Rd/Rocky Ridge Dr	22	C	33	C	23	C	33	C
89	Lead Hill Blvd/Eureka Rd	19	B	25	C	19	B	25	C
90	Douglas Blvd/Eureka Road	27	C	43	D	28	C	45	D
91	Eureka Rd/Deer Valley Apts Dwy	11	B	10	A	11	B	10	B
92	Eureka Rd/Ashland Dr	12	B	9	A	12	B	9	A
93	Eureka Rd/Sierra College Blvd	26	C	31	C	26	C	31	C
94	Douglas Blvd/Judah St	10	B	13	B	10	B	13	B
95	Douglas Blvd/Park Dr	9	A	9	A	9	A	9	A
96	Douglas Blvd/Keehner Ave	9	A	10	B	9	A	11	B
97	Douglas Blvd/Folsom Rd	21	C	19	B	21	C	19	B

Table 16:
Roseville Signalized Intersection Operations – Existing Plus Project Conditions (HCM Methodology)

Intersection		Existing Conditions				Existing Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
98	Douglas Blvd/Harding Blvd	28	C	48	D	28	C	53	D
99	Douglas Blvd/I-80 WB Ramps	32	C	41	D	32	C	43	D
100	Douglas Blvd/I-80 EB Ramps	6	A	11	B	6	A	11	B
101	Douglas Blvd/North Sunrise Ave	31	C	61	E	31	C	58	E
102	Douglas Blvd/Santa Clara Dr	9	A	28	C	9	A	28	C
103	Douglas Blvd/Sierra Gardens Dr	16	B	43	D	17	B	42	D
104	Douglas Blvd/Target Dwy	9	A	30	C	9	A	35	C
105	Douglas Blvd/Rocky Ridge Drive	26	C	59	E	26	C	58	E
106	Douglas Blvd/Sierra College Blvd	37	D	44	D	36	D	44	D
107	Cirby Way/Roseville Rd	24	C	40	D	25	C	45	D
108	Cirby Way/Vernon St	24	C	34	C	25	C	35	D
109	Cirby Way/Lindsay Dr	6	A	6	A	7	A	7	A
110	Cirby Way/Melody Ln	11	B	9	A	12	B	9	A
111	Cirby Way/Riverside Ave	35	C	60	E	36	D	63	E
112	Cirby Way/Orlando Ave	12	B	18	B	13	B	18	B
113	Cirby Way/San Simeon Dr	7	A	7	A	7	A	7	A
114	Cirby Way/Sunrise Ave	49	D	59	E	49	D	60	E
115	Cirby Way/Oakridge Dr	16	B	14	B	17	B	13	B
116	Cirby Way/Parkview Dr	10	A	5	A	10	B	5	A
117	Cirby Way/Rocky Ridge Dr	21	C	28	C	21	C	28	C
118	Cirby Way/Champion Oaks Dr	9	A	10	A	11	B	11	B
119	Old Auburn Rd/Cirby Way	19	B	16	B	19	B	16	B
125	Lead Hill Blvd/Wal*Mart	2	A	4	A	3	A	4	A
131	Fiddyment Rd/Hayden Pkwy (North)	6	A	7	A	11	B	13	B
133	Hayden Pkwy (South)/Fiddyment Rd	8	A	8	A	9	A	8	A
134	Village Green Dr/Fiddyment Rd	16	B	17	B	17	B	16	B
141	Horncastle Ave/Woodcreek Oaks Blvd	13	B	13	B	13	B	13	B
142	Camino Capistrano/Woodcreek Oaks	16	B	15	B	15	B	16	B
143	Canevari Dr/Woodcreek Oaks Blvd	18	B	15	B	19	B	15	B
144	McAnally Dr/Woodcreek Oaks Blvd	22	C	14	B	23	C	16	B
145	Trailee Ln/Woodcreek Oaks Blvd	19	B	13	B	19	B	13	B
146	Albertsons Dr/Foothills Blvd	11	B	10	A	13	B	10	A
147	HP-South Dwy/Foothills Blvd	0	A	0	A	-	C	-	C
149	Mistywood Dr/Foothills Blvd	10	A	8	A	9	A	8	A
150	McAnally Dr/Foothills Blvd	15	B	18	B	16	B	20	B

Table 16:
Roseville Signalized Intersection Operations – Existing Plus Project Conditions (HCM Methodology)

Intersection		Existing Conditions				Existing Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
151	Junction Blvd/Foothills Blvd	29	C	34	C	29	C	36	D
152	Pilgrim Dr/Foothills Blvd	7	A	6	A	7	A	6	A
153	Vineyard Rd/Foothills Blvd	20	C	22	C	21	C	22	C
154	Denio Loop/Foothills Blvd	17	B	18	B	17	B	19	B
156	Hallissy Dr/Washington Blvd	6	A	5	A	6	A	5	A
158	Diamond Oaks Rd/Washington Blvd	12	B	13	B	12	B	13	B
159	Sawtell Rd/Washington Blvd	12	B	13	B	12	B	13	B
160	Junction Blvd/Washington Blvd	12	B	19	B	12	B	20	C
162	Cortina Cir/Fairway Dr	15	B	14	B	15	B	14	B
164	Fairway Dr/Target Dwy	10	A	12	B	10	A	13	B
165	Fairway Dr/Central Park Dr	10	B	16	B	10	B	16	B
166	Fairway Dr/Home Depot Dwy	7	A	28	C	7	A	28	C
167	Fairway Dr/Five Star Blvd	11	B	19	B	11	B	19	B
168	Highland Park/Stanford Ranch Rd	14	B	10	A	14	B	10	A
169	Fairway Dr/Stanford Ranch Rd	21	C	27	C	21	C	27	C
170	5 Star Blvd/Stanford Ranch Rd	18	B	41	D	18	B	41	D
171	Hwy-65 NB Ramps/Stanford Ranch	9	A	43	D	9	A	36	D
172	Hwy-65 SB Ramps/Galleria Blvd	6	A	23	C	7	A	34	C
173	JC Penny/Galleria Circle	12	B	16	B	16	B	21	C
174	Antelope Creek Dr/Galleria Blvd	9	A	34	C	9	A	39	D
175	Berry St/Galleria Blvd	15	B	18	B	16	B	19	B
176	Wills Rd/Harding Blvd	14	B	18	B	15	B	17	B
177	Lead Hill Blvd/Harding Blvd	11	B	22	C	11	B	23	C
178	Estates Dr/Harding Blvd	17	B	20	B	17	B	24	C
179	Roseville Square/Harding Blvd	10	B	25	C	10	B	30	C
180	Stone Point Dr/N. Sunrise Ave	3	A	5	A	3	A	5	A
181	N. Sunrise Ave/Automall Dr	17	B	23	C	17	B	22	C
182	Lead Hill Blvd/N. Sunrise Ave	20	C	41	D	20	C	43	D
183	Sierra Gardens Dr/N. Sunrise Ave	13	B	22	C	13	B	22	C
184	Oak Ridge Dr/Sunrise Ave	4	A	4	A	5	A	4	A
185	Frances Dr/Sunrise Ave	5	A	7	A	5	A	7	A
186	Coloma Way/Sunrise Ave	13	B	17	B	13	B	16	B
187	Sun Tree Dr/Sunrise Ave	13	B	14	B	13	B	14	B
188	Kensington Dr/Sunrise Ave	10	A	9	A	10	A	9	A
189	Rocky Ridge Dr/Stone Point Dr	4	A	6	A	4	A	6	A

Table 16:
Roseville Signalized Intersection Operations – Existing Plus Project Conditions (HCM Methodology)

Intersection		Existing Conditions				Existing Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
190	Lead Hill Blvd/Rocky Ridge Dr	15	B	24	C	15	B	24	C
191	Professional Dr/Rocky Ridge Dr	9	A	14	B	9	A	14	B
192	Meadowlark Way/Rocky Ridge Dr	7	A	8	A	7	A	8	A
193	McLaren Dr/Rocky Ridge Dr	8	A	8	A	8	A	8	A
194	Secret Ravine Pkwy/Sierra College	16	B	17	B	16	B	17	B
195	Miners Ravine Pkwy/Sierra College	6	A	6	A	6	A	6	A
196	Olympus Dr/Sierra College Blvd	21	C	18	B	21	C	18	B
197	Indigo Creek Apts Dwy/Sierra College	19	B	26	C	19	B	26	C
198	Old Auburn Rd/Sierra College Blvd	31	C	34	C	31	C	34	C
199	Olympus Dr/Europa St	10	B	5	A	10	B	6	A
200	Secret Ravine Pkwy/Scarborough Dr	14	B	14	B	15	B	14	B
203	I-80 WB Ramps/Riverside Ave	11	B	26	C	11	B	29	C
204	Orlando Ave/Riverside Ave	22	C	32	C	21	C	35	C
205	Junction Blvd/Stonecrest Dr	15	B	11	B	16	B	11	B
207	Junction Blvd/Woodcreek Oaks Blvd	16	B	16	B	16	B	16	B
208	Junction Blvd/Country Club Dr	23	C	14	B	25	C	15	B
209	Junction Blvd/Revere Dr	5	A	4	A	5	A	4	A
210	Junction Blvd/Americana Dr	13	B	6	A	12	B	6	A
211	Junction Blvd/Sawtell Rd	9	A	9	A	9	A	9	A
212	PFE Rd/Hilltop Cir	12	B	8	A	12	B	8	A
220	Westbrook Blvd./Road A	Does Not Exist				20	C	13	12
221	Road D/Road A	Does Not Exist				9	A	9	A
222	Westbrook Blvd./Road B	Does Not Exist				17	B	19	B
223	Road B/Road A	Does Not Exist				12	B	11	B
224	Westbrook Blvd./Road D	Does Not Exist				15	B	17	B
P1	Darling/Riverside (Located in POD)	17	B	18	B	18	B	18	B
P2	Vernon/Douglas (Located in POD)	24	C	32	C	25	C	32	C
P3	Vernon/Grant (Located in POD)	5	A	7	A	6	A	7	A
P4	Vernon/Judah (Located in POD)	3	A	4	A	3	A	4	A
P5	Vernon/Lincoln (Located in POD)	12	B	16	B	13	B	16	B
P6	Main/Washington (Located in POD)	26	C	30	C	27	C	31	C
P7	Oak/Grant (Located in POD)	15	B	15	B	15	B	16	B
P8	Oak/Lincoln (Located in POD)	8	A	9	A	8	A	9	A

Notes: Shaded cells represent significant impacts.

Table 16:
Roseville Signalized Intersection Operations – Existing Plus Project Conditions (HCM Methodology)

Intersection	Existing Conditions				Existing Plus Project Conditions			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS

Source: Fehr & Peers, 2015.

Table 17:
City of Roseville Signalized Intersection Operations – Existing Plus Project Conditions (HCM Methodology)

Level of Service	AM Peak Hour	PM Peak Hour
Total Intersections	165	165
LOS A-C	159 (96%)	131 (79%)
LOS D	6 (4%) ▪ ***Baseline/Fiddyment*** ▪ Cirby/Sunrise ▪ ***Cirby/Riverside*** ▪ Douglas/Sierra College ▪ ***Baseline/Foothills*** ▪ ***Baseline/ Woodcreek Oaks*** ▪ ~~***Blue Oaks/ Foothills***~~	26 (16%) ▪ ~~Baseline/Fiddyment~~ ▪ ***Blue Oaks/Foothills*** ▪ Blue Oaks/ Woodcreek Oaks ▪ Cirby/Foothills ▪ ***Cirby/Vernon*** ▪ Douglas/Eureka ▪ Douglas/Sierra Gardens ▪ Douglas/E. Roseville Pkwy ▪ Douglas/Harding ▪ Douglas/Sierra College ▪ Eureka/N. Sunrise ▪ Baseline/Foothills ▪ ***Junction/Foothills*** ▪ Pleasant Grove/Foothills ▪ ~~Roseville Parkway/Galleria~~ ▪ ***Antelope Creek/Galleria*** ▪ Lead Hill/N. Sunrise ▪ Fairway/Pleasant Grove ▪ Highland Pointe/Pleasant Grove ▪ Pleasant Grove/Washington ▪ Roseville Pkwy/Creekside Ridge ▪ E. Roseville Pkwy/N. Sunrise ▪ Roseville Pkwy/Reserve ▪ Five Star/Stanford Ranch ▪ Blue Oaks/Washington ▪ Douglas/I-80 WB Ramps ▪ SR65 NB Ramps/Stanford Ranch ▪ Eureka/Taylor
LOS E	0 (0%)	8 (5%) ▪ ***Baseline/Fiddyment*** ▪ Cirby/Sunrise ▪ Cirby/Riverside ▪ Douglas/Rocky Ridge ▪ Douglas/N. Sunrise ▪ ***Roseville Pkwy/Galleria*** ▪ Pleasant Grove/Roseville Pkwy ▪ E.Roseville Pkwy/Taylor
LOS F	0 (0%)	0 (0%)
Percent Operating at LOS D, E, or F	4%	21%

Notes:
1. Excludes the eight signalized intersections located in the City's Pedestrian Overlay District (POD). Includes five new signalized

intersections within Amoruso Specific Plan.
2. Intersections in ***bold and italics*** operate at given LOS for existing plus project, but not existing conditions.
3. Intersections with ~~strikethrough~~ text improve from less than LOS C to LOS C or better with project during the AM peak hour. ~~strikethrough~~ text also indicates a degradation from LOS C to D during the PM peak hour.

Results based on use of HCM methodologies.
Source: Fehr & Peers, 2015.

The proposed project would result in the construction of the Blue Oaks Boulevard/Westbrook Boulevard intersection. However, only the north and west legs would be operational, meaning that the westbound right-turn movements and southbound left-turn movements would operate concurrently. Through appropriate lane striping, signage, and traffic controls, project trips would be able to progress through this intersection with little delay.

The project would cause the following significant impacts at intersections in Roseville:

AM Peak Hour

- Baseline Road/Fiddyment Road (LOS C to D)
- Cirby Way/Riverside Avenue (LOS C to D)
- Baseline Road/Foothills Boulevard (LOS C to D)
- Baseline Road/Woodcreek Oaks Boulevard (LOS C to D)

PM Peak Hour

- Blue Oaks Boulevard/Foothills Boulevard (LOS C to D)
- Cirby Way/Vernon Street (LOS C to D)
- Junction Boulevard/Foothills Boulevard (LOS C to D)
- Antelope Creek Boulevard/Galleria Boulevard (LOS C to D)
- Baseline Road/Fiddyment Road (LOS D to E)
- Roseville Parkway/Galleria Boulevard (LOS D to E)

Mitigations for these significant impacts are presented in Chapter 7. As is discussed in this chapter, all impacts can be mitigated to a less than significant level.

ANALYSIS OF ADJACENT JURISDICTION FACILITIES

Table 18 displays the existing plus project AM and PM peak hour operations at study intersections outside of Roseville. Refer to separately bound Appendix B for technical calculations.

Table 18:
Intersection Operations Outside of Roseville – Existing Plus Project Conditions

Intersection	Jurisdiction	Control Type	Existing Conditions				Existing Plus Project Conditions			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS
Locust Rd/Baseline Rd	Placer County	AWSC	30	D	66	F	32	D	60	F
Watt Ave/PFE Rd	Placer County	AWSC	38	E	13	B	99	F	22	C
Walerga Rd/PFE Rd	Placer County	Signal	0.86	D	0.77	C	0.94	E	0.87	D
Cook Riolo Rd/PFE Rd	Placer County	AWSC	15	B	11	B	30	D	15	B
Fiddyment Rd/Sunset Blvd W	Placer County	TWSC	3 (12)	A (B)	6 (19)	A (C)	59 (141)	F (F)	35 123)	E (F)
Fiddyment Rd/Athens Ave	Placer County	AWSC	9	A	11	B	21	C	44	E
Industrial Ave/Athens Ave	Placer County	Signal	0.22	A	0.36	A	0.28	A	0.36	A
N Foothills Blvd/ Athens Ave	Placer County	TWSC	2 (11)	A (B)	3 (14)	A (B)	2 (12)	A (B)	2 (15)	A (B)
Cincinnati Ave/ W Sunset Blvd	Placer County	Signal	0.27	A	0.45	A	0.32	A	0.45	A
Westbrook Blvd/ W Sunset Blvd	Placer County	Signal	Does Not Exist				0.33	A	0.47	A
Pleasant Grove Rd N/ Riego Rd	Sutter County	AWSC	61	F	33	D	49	E	68	F
Pleasant Grove Rd S/ Riego Rd	Sutter County	AWSC	65	F	43	E	72	F	29	D
Watt Ave/Elverta Rd	Sacramento County	Signal	0.39	A	0.44	A	0.42	A	0.47	A
Walerga Rd/Elverta Rd	Sacramento County	Signal	0.73	C	0.65	B	0.75	C	0.67	B
Watt Ave/Antelope Rd	Sacramento County	Signal	0.70	C	0.68	B	0.73	C	0.69	B
Walerga Rd/Antelope Rd	Sacramento County	Signal	0.63	B	0.75	C	0.63	B	0.75	C
Watt Ave/Elkhorn Blvd	Sacramento County	Signal	0.61	B	0.58	A	0.64	B	0.73	B

Table 18:
Intersection Operations Outside of Roseville – Existing Plus Project Conditions

Intersection	Jurisdiction	Control Type	Existing Conditions				Existing Plus Project Conditions			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS
Walerga Rd/Elkhorn Blvd	Sacramento County	Signal	0.54	A	0.72	C	0.54	A	0.73	C
Fiddyment Rd/Moore Rd	Lincoln	AWSC	8	A	8	A	8	A	8	A
Sorrento Pkwy/Ferrari Ranch Rd	Lincoln	AWSC	9	A	9	A	9	A	8	A
Ferrari Ranch Rd/ Groveland Ln	Lincoln	Signal	17	B	9	A	17	B	9	A
Ferrari Ranch Rd/ Joiner Pkwy	Lincoln	Signal	7	A	7	A	7	A	7	A
Joiner Pkwy/Twelve Bridges Dr	Lincoln	Signal	31	C	27	C	32	C	28	C
Sunset Blvd/SR 65 NB Ramps	Caltrans	Signal	20	B	19	B	20	B	19	B
Sunset Blvd/SR 65 SB Ramps	Caltrans	Signal	17	B	17	B	17	B	17	B
Nelson Ln/SR 65	Caltrans	Signal	8	A	7	A	8	A	7	A

Notes:
1. Refer to Chapter 1 for analysis methods applied for each jurisdiction and signal control type.
2. AWSC = All Way Stop Control. TWSC = Two-Way Stop Control.

Shaded cells represent significant impacts.
At two-way stop control intersections, delay/LOS for worst movement shown in parenthesis with overall delay/LOS not shown in parenthesis.

Source: Fehr & Peers, 2015.

The proposed project would cause the following significant LOS degradations:

AM Peak Hour

- Watt Avenue/PFE Road (LOS E to F)
- Walerga Avenue/PFE Road (LOS D to E)
- Cook-Riolo Road/PFE Road (LOS B to D)
- Fiddyment Road/Sunset Blvd. West (LOS B to F)
- Pleasant Grove Road S / Riego Road (LOS F operations exacerbated)

PM Peak Hour

- Walerga Avenue/PFE Road (LOS C to D)
- Fiddyment Road/Sunset Blvd. West (LOS C to F)
- Fiddyment Road/Athens Avenue (LOS B to E)
- Pleasant Grove Road N / Riego Road (LOS D to F)

A traffic signal was assumed to be in place at Sunset Boulevard West/Westbrook Boulevard intersection based on the amount of traffic anticipated to use it. Operations were found to be unacceptable with stop-control. The intersection was assumed to have dedicated left and right-turn lanes on all approaches.

A January 22, 2016 comment letter from Placer County indicated that they believe project impacts at the Sunset Boulevard West/Westbrook Boulevard intersection are significant and a traffic signal should be installed with the plan's development. The mitigation described in this report (see Figure ES-1) is consistent with this approach.

Mitigations for these significant impacts are presented in Chapter 7.

Table 19 displays the number of lanes, ADT, v/c ratio, and LOS at study roadways located in Rocklin, Placer County, Sutter County, and Sacramento County under existing plus project conditions.

Table 19:
Roadway Segment Operations Outside of Roseville – Existing Plus Project Conditions

Segment	Jurisdiction	Number of Lanes	Existing Conditions			Existing Plus Project		
			Average Daily Traffic (ADT)	V/C Ratio	LOS	Average Daily Traffic (ADT)	V/C Ratio	LOS
Baseline Road west of Watt Ave	Placer County	2	10,000	0.56	A	10,100	0.56	A
Watt Avenue south of Baseline Rd	Placer County	2	5,800	0.32	A	7,800	0.43	A
Sunset Boulevard West west of Fiddyment Road	Placer County	2	2,200	0.12	A	8,600	0.48	A
Sunset Boulevard west of SR 65	Placer County	4	14,700	0.41	A	15,200	0.42	A
Sunset Blvd West east of Pleasant Grove Rd	Placer County	2	2,000	0.11	A	4,500	0.18	B
Athens Ave east of Fiddyment Rd	Placer County	2	5,300	0.29	A	10,300	0.57	A
Fiddyment Rd from Athens Ave to Sunset Blvd. West	Placer County	2	7,500	0.42	A	13,600	0.76	C
Fiddyment Rd from Sunset Blvd. West to Roseville City limits	Placer County	2	7,500	0.42	A	7,600	0.42	A
Brewer Road north of Baseline Road	Placer County	2	200	0.01	A	300	0.02	A
Watt Avenue south of PFE Road	Placer County	2	9,300	0.52	A	11,500	0.64	B
Walerga Road south of Baseline Road	Placer County	2	16,800	0.93	E	18,200	1.01	F
Watt Avenue south of Elverta Road	Sacramento County	4	23,600	0.66	B	24,300	0.68	B
Watt Avenue south of Antelope Road	Sacramento County	4	27,100	0.75	C	28,600	0.79	C
Watt Avenue south of Elkhorn Boulevard	Sacramento County	6	32,600	0.60	B	33,700	0.62	B
Walerga Road south of PFE Road	Sacramento County	2	18,900	1.05	F	20,100	1.12	F
Walerga Road south of Antelope Road	Sacramento County	4	32,000	0.89	D	32,200	0.89	D
Walerga Road south of Elkhorn Boulevard	Sacramento County	4	19,900	0.55	A	20,100	0.56	A
Pleasant Grove Rd north of Baseline Rd	Sutter County	2	1,200	0.07	A	3,200	0.18	B
Riego Road east of SR 70/99	Sutter County	2	8,200	0.46	A	9,900	0.55	A
Howsley Road east of SR 70/99	Sutter County	2	2,700	0.15	A	2,800	0.16	A
Sunset Boulevard east of SR 65	City of Rocklin	4	23,200	0.64	B	24,100	0.65	B

Table 19:
Roadway Segment Operations Outside of Roseville – Existing Plus Project Conditions

Segment	Jurisdiction	Number of Lanes	Existing Conditions			Existing Plus Project		
			Average Daily Traffic (ADT)	V/C Ratio	LOS	Average Daily Traffic (ADT)	V/C Ratio	LOS
Blue Oaks Boulevard east of Lonetree Blvd	City of Rocklin	4	10,800	0.30	A	10,900	0.30	A
Wildcat Boulevard north of Ranch View Drive	City of Rocklin	4	7,200	0.20	A	7,300	0.20	A

Notes:
1. V/C Ratio = Volume-to-Capacity Ratio. LOS = Level of Service.

Shaded cells represent significant impacts.

Source: Fehr and Peers, 2015.

As shown, the addition of project trips would contribute to worsened operations on Walerga Road south of Baseline Road. Although the project would add trips to a variety of other non-Roseville roadway segments, those segments would continue operating at an acceptable LOS C or better.

Table 20 displays AM and PM peak hour operations at study freeway facilities. Refer to separately bound Appendix B for technical calculations.

Table 20:
Freeway Level of Service – Existing Plus Project Conditions

SR 65 Freeway Facility	Type	Existing Conditions				Existing Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density	LOS	Density	LOS	Density	LOS	Density	LOS
Northbound State Route 65									
I-80 to Galleria Blvd	Basic	-	F	-	F	-	F	-	F
Galleria Blvd Off-Ramp	Diverge	-	F	-	F	-	F	-	F
Galleria Blvd On-Ramp	Merge	-	F	39	E	-	F	-	F
Pleasant Grove Blvd Off-Ramp	Diverge	-	F	-	F	-	F	-	F
Pleasant Grove Blvd On-Ramp to Blue Oaks Blvd Off-Ramp	Weave	N/A	C	N/A	D	N/A	D	N/A	D
Blue Oaks Blvd Loop On-Ramp	Merge	27	C	30	D	27	C	30	D
Blue Oaks Blvd On-Ramp to Sunset Off-Ramp	Basic	24	C	28	D	23	C	28	D
Sunset Blvd Off-Ramp	Diverge	17	B	21	C	17	B	21	C
Sunset Blvd Loop On-Ramp	Merge	14	B	24	C	13	B	24	C
Sunset Blvd Slip On-Ramp	Merge	13	B	24	C	12	B	24	C
Sunset Blvd to Twelve Bridges Dr	Basic	14	B	26	D	14	B	26	D
Twelve Bridges Dr Off-Ramp	Diverge	19	B	31	D	18	B	32	D
Twelve Bridges Dr On-Ramp to Lincoln Off-Ramp	Weave	N/A	A	N/A	C	N/A	A	N/A	C
Lincoln Blvd Off-Ramp to Ferrari Ranch Rd	Basic	6	A	10	A	6	A	11	A
Ferrari Ranch Rd Off-Ramp	Basic	6	A	10	A	6	A	11	A
Ferrari Ranch Rd On-Ramp	Merge	8	A	9	A	8	A	9	A
Ferrari Ranch Rd to Nelson Ln	Basic	7	A	8	A	7	A	8	A
Southbound State Route 65									
Nelson Ln to Ferrari Ranch Rd	Basic	8	A	8	A	8	A	8	A
Ferrari Ranch Rd Off-Ramp	Diverge	12	B	11	B	12	B	11	B
Ferrari Ranch Rd Loop On-Ramp	Basic	9	A	6	A	9	A	6	A
Ferrari Ranch Rd Direct On-Ramp	Merge	14	B	8	A	14	B	8	A
Ferrari Ranch Rd to Lincoln Blvd	Basic	18	C	10	A	19	C	10	A
Lincoln Blvd On-Ramp to Twelve Bridges Dr Off-Ramp	Weave	N/A	C	N/A	A	N/A	C	N/A	A
Twelve Bridges Loop On-Ramp	Merge	29	D	20	C	30	D	20	C

Table 20:
Freeway Level of Service – Existing Plus Project Conditions

SR 65 Freeway Facility	Type	Existing Conditions				Existing Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density	LOS	Density	LOS	Density	LOS	Density	LOS
Twelve Bridges Dr to Sunset Blvd	Basic	27	D	18	B	28	D	17	B
Sunset Blvd Off-Ramp	Diverge	20	C	10	B	21	C	10	B
Sunset Blvd Loop On-Ramp	Merge	28	D	23	C	29	D	23	C
Sunset Blvd Direct On-Ramp	Merge	24	C	22	C	25	C	21	C
Sunset Blvd Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Basic	29	D	26	C	29	D	25	C
Blue Oaks Blvd Off-Ramp	Diverge	33	D	31	D	34	D	30	D
Blue Oaks Blvd Loop On-Ramp	Merge	29	D	27	C	30	D	27	C
Blue Oaks Blvd On to Pleasant Grove Off-Ramp	Weave[1]	-	F	N/A	F	N/A	F	N/A	F
Pleasant Grove Blvd Loop On-Ramp	Merge	32	D	30	D	35	E	30	D
Pleasant Grove Blvd Direct On-Ramp	Merge	37	E	34	D	-	F	35	D
Galleria Blvd Off-Ramp	Diverge	-	F	39	E	-	F	40	E
Galleria Blvd On-Ramp	Merge	25	C	26	C	27	C	27	C
Galleria Blvd to I-80	Basic	23	C	24	C	25	C	24	C

Notes:
1. Field observations reveal that reoccurring congestion at the SR 65/Pleasant Grove Blvd. SB loop on-ramp causes traffic on SB SR 65 to queue back to Blue Oaks Boulevard and beyond. Therefore, results shown as LOS F.
2. 'N/A' = Not applicable because density is not calculated for weave segments based on Leisch method.
3. '-' = Density not reported for facilities operating at LOS F.

Shaded cells represent significant impacts.

Source: Fehr & Peers, 2015.

The project would worsen the NB SR 65 Galleria Boulevard on-ramp merge from LOS E to F during the PM peak hour. It should be noted that an on-ramp improvement project at this location is planned for construction in the near-term with funding provided through the Highway 65 JPA.

The project would also worsen the SB SR 65 Pleasant Grove Boulevard loop and diagonal on-ramp merges by one service level during the AM peak hour. The project would cause the following meaningful changes in traffic volumes on various segments of SR 65 that currently operate at LOS F including (reported volumes represent the total change in traffic within the ramp influence area or weave segment):

AM Peak Hour

- SB SR 65 weave from Blue Oaks Boulevard to Pleasant Grove Boulevard (increase of 344 AM peak hour trips)
- SB SR 65 diagonal on-ramp at Pleasant Grove Boulevard (increase of 330 AM peak hour trips)
- SB SR 65 off-ramp at Galleria Boulevard (increase of 426 AM peak hour trips)

PM Peak Hour

- NB SR 65 from I-80 to Galleria Boulevard (increase of 156 PM peak hour trips)
- NB SR 65 off-ramp at Galleria Boulevard (increase of 170 PM peak hour trips)
- NB SR 65 on-ramp at Galleria Boulevard (increase of 147 PM peak hour trips)
- NB SR 65 off-ramp at Pleasant Grove Boulevard (increase of 155 PM peak hour trips)
- SB SR 65 weave from Blue Oaks Boulevard to Pleasant Grove Boulevard (increase of 73 PM peak hour trips)

Chapter 7 describes the significant impacts of the project, and recommends mitigations for those impacts.

5. 2035 CIP CONDITIONS

This chapter presents the analysis of project impacts under 2035 CIP conditions. This scenario represents projected conditions based on land developments and roadway improvements that are reasonably foreseeable by 2035. This chapter presents traffic forecasts and operations analysis results for this scenario, both without and with the proposed project.

The cumulative impact analysis presented in this chapter consists of a two-step approach. First, the study assesses whether cumulative impacts from past, present, and probable future projects, as well as the proposed project, are significant. If the cumulative impacts are not significant, this conclusion is presented. If the cumulative impacts are significant, a determination is then made as to whether the project's incremental contribution to those impacts is "cumulatively considerable" (that is, significant in and of itself).

LAND USE AND ROADWAY NETWORK ASSUMPTIONS

The City of Roseville 2025 CIP travel demand model was updated to represent a 2035 horizon year and includes various land use and roadway modifications, which are summarized below.

Land Use Assumptions

- Build-out of City of Roseville (existing City including approved specific plans)
- Build-out Regional University Specific Plan
- Build-out of Phase 1 of Placer Vineyards
- 2035 levels of residential market absorption in City of Lincoln
- Build-out of residential and 2035 market absorption levels of non-residential in City of Rocklin
- SACOG 2035 market absorption for specific projects outside of South Placer County including the Elverta Specific Plan (Sacramento County), Johnson Ranchos (Wheatland), and Sutter Pointe (Sutter County)

This scenario does not assume any development of the Placer Ranch Specific Plan since that project did not have a project application at the time this study began. It assumes buildout of the Hewlett Packard Campus based on its current light industrial zoning (versus a proposal currently being considered to develop the westerly portion of the property with the mixed-use "Campus Oaks" project).

Roadway Network Assumptions

The 2035 CIP travel demand model includes the roadway extensions and widenings included in the City of Roseville Capital Improvement Program (CIP). It also includes other improvements funded through various other funding sources. Following is a partial list of improvements assumed in place.

- I-80 improvements including new auxiliary lanes on EB I-80 from SR 65 to Rocklin Road and on WB I-80 from Douglas Boulevard to Riverside Avenue (*included as a Tier 1 project in SACOG's MTP/SCS*).
- Highway 65 is widened to six continuous lanes between I-80 and Blue Oaks Boulevard (*partial funding being collected through SPRTA fee program, full funding expected to be available for construction in 21-year horizon period according to City staff*).
- Baseline/Riego Road is widened to six lanes from Fiddyment Road to SR 99 through Roseville, Placer County, and Sutter County (*funded through fee programs and local developer frontage improvement requirements*).
- SR 99/Riego Road interchange is constructed (*recently completed*).
- Watt Avenue is widened to six lanes between Baseline Road and Sacramento County line, and to four lanes from the County line to Antelope Road (*funded through fee programs and local developer frontage improvement requirements*).
- Walerga Road is four lanes between Baseline and and Sacramento County line (*funded through fee programs and local developer frontage improvement requirements*).
- Santucci Boulevard is constructed as six lanes from Baseline Road to Blue Oaks Boulevard (*funded through City of Roseville CIP and local developer frontage improvement requirements*).
- Blue Oaks Boulevard is widened to eight lanes from SR 65 to Woodcreek Oaks Boulevard, and six lanes from Woodcreek Oaks Boulevard to Santucci Boulevard Boulevard (*funded through City of Roseville CIP and local developer frontage improvement requirements*).
- Placer Parkway Phase 1 is constructed as four lanes from SR 65 to Foothills Boulevard (*included as a Tier 1 project in SACOG's MTP/SCS*).
- Sunset Boulevard is widened to four lanes from west of SR 65 to Cincinnati Avenue (*funded through Placer County CIP).*
- Sunset Boulevard is widened to six lanes east of SR 65 (*based on City of Rocklin General Plan Circulation Element Diagram 4-8, October 2012*).
- Fiddyment Road is widened to four lanes from the Roseville city limits to Athens Avenue (*included as a Tier 1 project in SACOG's MTP/SCS*).

Figure 9 displays the 2035 CIP roadway network within the City of Roseville.

The City's CIP project list represents a reasonable mitigation plan because the improvements are reasonably foreseeable based on a strong likelihood (and past history) that they will very likely be fully funded by the time they are needed based on the current fees being collected. The City's traffic model represents a summary of projections contained in its adopted General Plan and CIP, which is consistent with the "summary of projections" method for analyzing cumulative conditions, as permitted under CEQA.

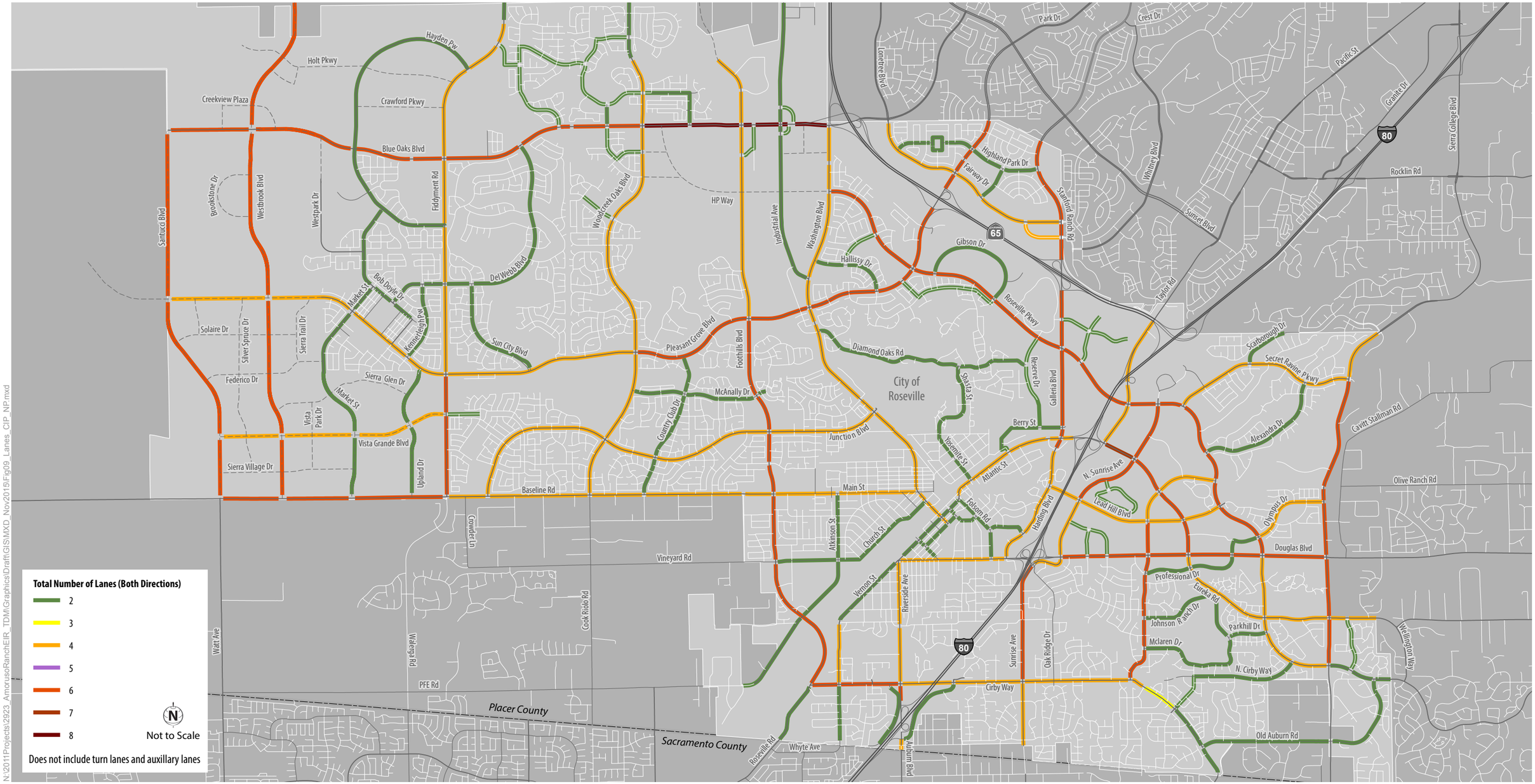

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Figure 9

Number of Lanes on Roseville Roadways - 2035 CIP Conditions

TRAFFIC FORECASTS

Traffic forecasts for the 2035 CIP scenario were developed for the following scenarios:

- 2035 CIP No Project Conditions – assumes the above land uses and roadway network assumptions, but no development on the Amoruso Property.
- 2035 CIP Plus Project Conditions – assumes development of the Amoruso Ranch Specific Plan. Similar to existing conditions, all vehicular access to the project would be provided by Westbrook Boulevard to the south and Sunset Boulevard West to the north. This scenario does not assume Placer Parkway is constructed adjacent/within the project site.

A forecasting procedure known as the "difference method" was utilized to develop future year forecasts. This method accounts for potential differences between the base year model and existing traffic counts that could otherwise transfer to the future year traffic forecast. This forecasting procedure is calculated as follows. In instances where the roadway currently does not exist, the 2035 CIP model forecast is used directly.

2035 CIP Traffic Forecast = Existing Volume + (2035 CIP TDM – Base Year TDM)

CITY OF ROSEVILLE ROADWAY SYSTEM

Figures 10 and 11 display the resulting 2035 CIP ADT forecasts on Roseville roadways under No Project and Plus Project conditions, respectively.

The 2035 CIP AM and PM peak hour turning movement forecasts and lane configurations under No Project and Plus Project conditions are included in separately bound technical Appendix C. This appendix also displays a map showing the future signalized intersections within the City.

Table 21 displays 2035 CIP AM and PM peak hour operations at all existing/planned signalized intersections in Roseville under No Project and Plus Project conditions. Refer to separately bound Appendix C for technical calculations.

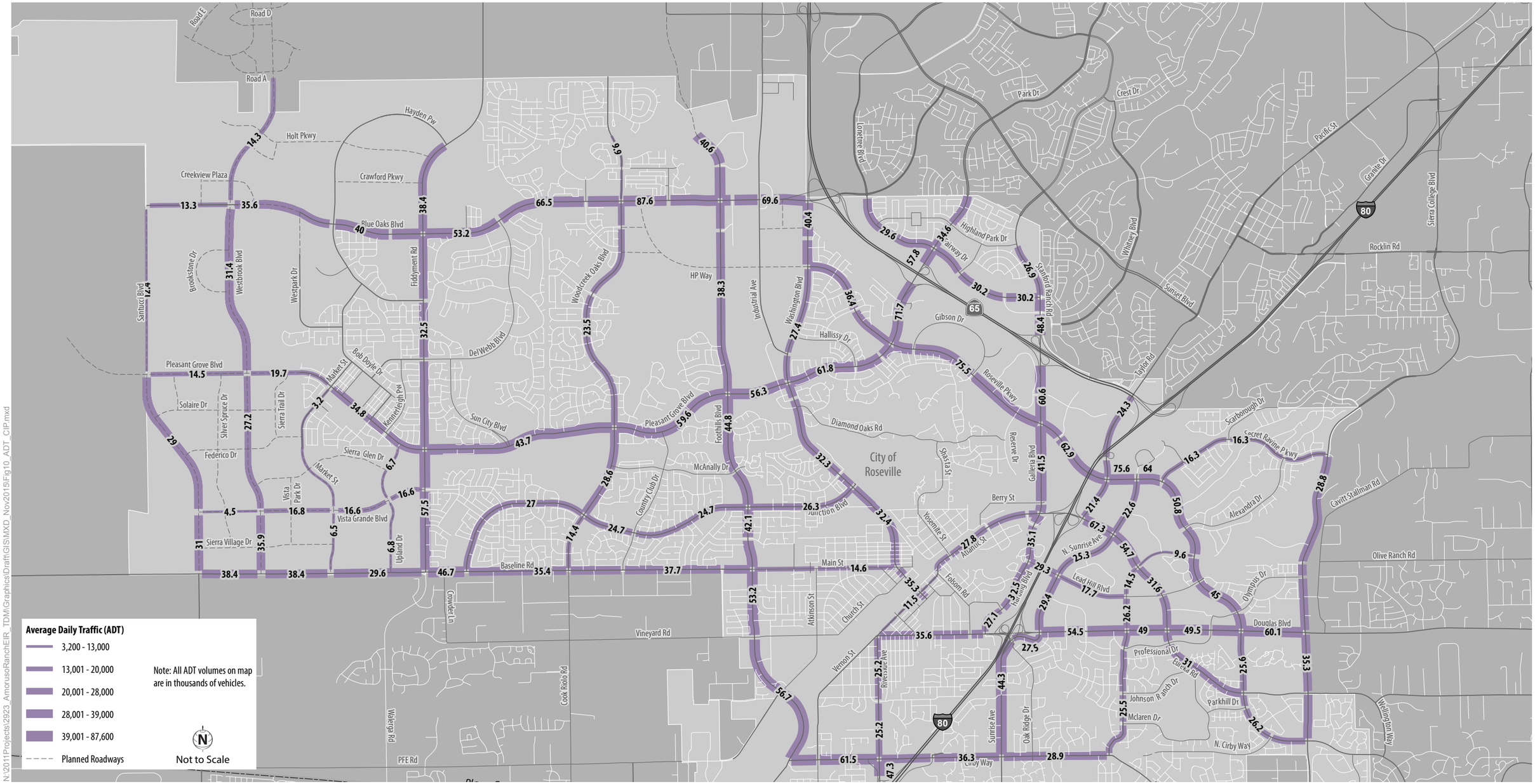

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Figure 10

Average Daily Traffic Volume (ADT) on Roseville Roadways - 2035 CIP No Project Conditions

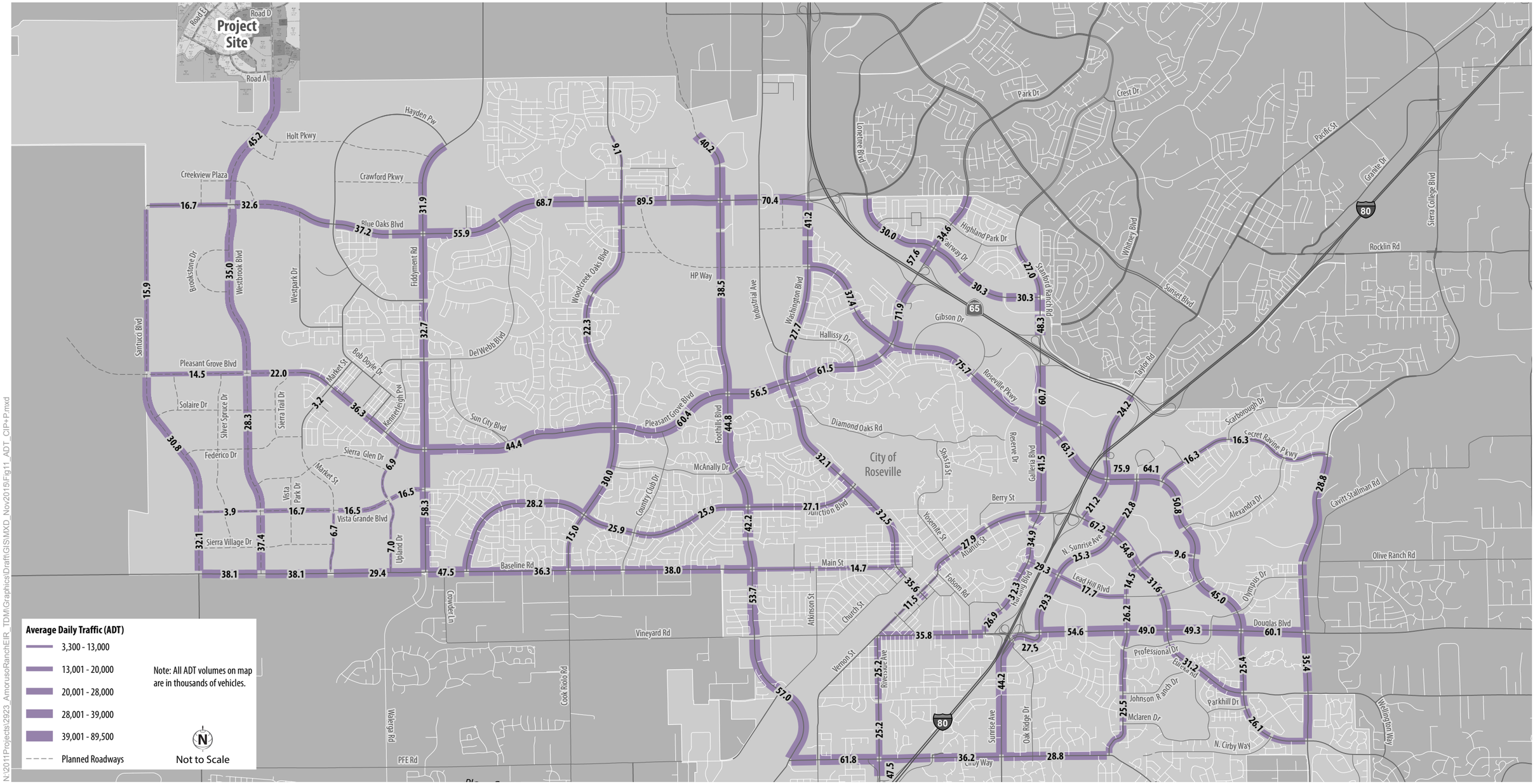

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Figure 11

Average Daily Traffic Volume (ADT) on Roseville Roadways - 2035 CIP Plus Project Conditions

Table 21:
Level of Service at Roseville Signalized Intersections – 2035 CIP Conditions (HCM Methodology)

	Intersection	2035 CIP Conditions				2035 CIP Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Blue Oaks Blvd/Grasscreek Drive	15	B	15	B	17	B	19	B
2	Blue Oaks Blvd/Westbrook Blvd	28	C	25	C	66	E	86	F
3	Blue Oaks Blvd/Creekview Plaza	13	B	19	B	13	B	18	B
4	Blue Oaks Blvd/West Park Drive	13	B	12	B	13	B	12	B
5	Blue Oaks Blvd/Hayden Pkwy	31	C	25	C	31	C	26	C
6	Blue Oaks Blvd/Fiddyment Rd	41	D	40	D	45	D	39	D
7	Blue Oaks Blvd/Orchard View Rd	9	A	9	A	9	A	9	A
8	Blue Oaks Blvd/Del Webb Blvd	13	B	10	B	12	B	11	B
9	Blue Oaks Blvd/Crocker Ranch Rd	18	B	24	C	17	B	19	C
10	Blue Oaks Blvd/Diamond Creek Blvd	21	C	59	E	22	C	61	E
11	Blue Oaks Blvd/Woodcreek Oaks Blvd	59	E	36	D	60	E	37	D
12	Blue Oaks Blvd/Wood Meadow Dr	14	B	20	B	14	B	21	C
13	Blue Oaks Blvd/New Meadow Dr	12	B	12	B	13	B	12	B
14	Blue Oaks Blvd/Collector C	14	B	48	D	26	C	54	D
15	Blue Oaks Blvd/Foothills Blvd	34	C	112	F	34	C	108	F
16	Blue Oaks Blvd/Fidelity Way	5	A	41	D	5	A	36	D
17	Blue Oaks Blvd/Washington Blvd	36	D	64	E	37	D	75	E
18	Pleasant Grove Blvd/Santucci Blvd	19	B	21	C	19	B	21	C
19	Pleasant Grove Blvd/Silver Spruce Dr	9	A	9	A	9	A	9	A
20	Pleasant Grove Blvd/Westbrook Blvd	24	C	24	C	26	C	34	C
21	Pleasant Grove Blvd/Sierra Trail Dr	18	B	12	B	19	B	14	B
22	Pleasant Grove Blvd/Market St	21	C	22	C	22	C	23	C
23	Pleasant Grove Blvd/Monument Dr	15	B	14	B	17	B	14	B
24	Pleasant Grove Blvd/Upland Dr	11	B	12	B	12	B	11	B
25	Pleasant Grove Blvd/Fiddyment Rd	60	E	48	D	74	E	53	D
26	Pleasant Grove Blvd/Sun City Blvd	8	A	7	A	9	A	7	A
27	Pleasant Grove Blvd/Rose Creek Rd	5	A	6	A	5	A	6	A
28	Pleasant Grove Blvd/Michener Dr	6	A	9	A	5	A	10	A
29	Pleasant Grove Blvd/Woodcreek Oaks	25	C	39	D	27	C	39	D
30	Pleasant Grove Blvd/Country Club Dr	20	C	10	B	20	C	10	A
31	Pleasant Grove Blvd/Foothills Blvd	49	D	68	E	49	D	69	E
32	Pleasant Grove Blvd/Washington Blvd	35	C	39	D	35	C	40	D
33	Pleasant Grove Blvd/Hallissy Dr	11	B	29	C	11	B	29	C
34	Pleasant Grove Blvd/Roseville Pkwy	81	F	124	F	83	F	120	F

Table 21:
Level of Service at Roseville Signalized Intersections – 2035 CIP Conditions (HCM Methodology)

	Intersection	2035 CIP Conditions				2035 CIP Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
35	Highland Pointe Dr/Pleasant Grove	21	C	130	F	21	C	131	F
36	Pleasant Grove Blvd/Hwy-65 SB	10	A	14	B	10	A	17	B
37	Pleasant Grove Blvd/Hwy-65 NB	12	B	22	C	12	B	22	C
38	Fairway Dr/Pleasant Grove Blvd	36	D	91	F	36	D	93	F
39	Highland Park Dr/Pleasant Grove Blvd	19	B	25	C	19	B	25	C
40	Vista Grande Blvd/Santucci Blvd	12	B	18	B	12	B	16	B
41	Vista Grande Blvd/Silver Spruce Dr	13	B	14	B	13	B	14	B
42	Vista Grande Blvd/Westbrook Blvd	22	C	35	C	20	B	38	D
43	Vista Grande Blvd/Vista Park Dr	14	B	26	C	14	B	28	C
44	Vista Grande Blvd/Market St	15	B	18	B	15	B	19	B
45	Vista Grande Blvd/Monarch Grove St	22	C	17	B	23	C	16	B
46	Vista Grande Blvd/Upland Dr	16	B	19	B	16	B	20	C
47	Westhills Dr/Fiddyment Rd	46	D	39	D	48	D	41	D
48	Baseline Rd/Regional Park Access	14	B	17	B	14	B	17	B
49	Baseline Rd/Santucci Blvd	29	C	35	C	30	C	37	D
50	Baseline Rd/West Shopping Center	12	B	15	B	12	B	15	B
51	Baseline Rd/Westbrook Blvd	30	C	35	C	32	C	37	D
52	Baseline Rd/Central Shopping Center	6	A	6	A	6	A	6	A
53	Baseline Rd/Market St	18	B	17	B	18	B	17	B
54	Baseline Rd/East Shopping Center	10	B	15	B	11	B	15	B
55	Baseline Rd/Upland Dr	8	A	10	A	9	A	10	A
56	Baseline Rd/Fiddyment Rd	41	D	47	D	43	D	47	D
57	Baseline Rd/Junction Blvd	23	C	16	B	24	C	17	B
58	Baseline Rd/Woodcreek Oaks Blvd	58	E	38	D	59	E	38	D
59	Baseline Rd/Foothills Blvd	71	E	38	D	76	E	38	D
60	HP-Main Dwy/Foothills Blvd	29	C	45	D	31	C	47	D
61	Roseville Pkwy/Washington Blvd	27	C	28	C	28	C	30	C
62	Trestle Rd/Roseville Pkwy	9	A	11	B	9	A	12	B
63	Roseville Pkwy/Gibson Drive (w)	38	D	57	E	34	C	37	D
64	Roseville Pkwy/Chase Dr	6	A	23	C	6	A	21	C
65	Roseville Pkwy/Gibson Dr	16	B	54	D	16	B	57	E
66	West Mall/Roseville Pkwy	6	A	19	B	6	A	19	B
67	Roseville Pkwy/Reserve Dr	25	C	59	E	25	C	64	E
68	Roseville Pkwy/Galleria Blvd	38	D	71	E	38	D	71	E

Table 21:
Level of Service at Roseville Signalized Intersections – 2035 CIP Conditions (HCM Methodology)

Intersection		2035 CIP Conditions				2035 CIP Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
69	Roseville Pkwy/Creekside Ridge Dr	11	B	25	C	10	B	25	C
70	E. Roseville Pkwy/Taylor Rd	46	D	63	E	46	D	63	E
71	E. Roseville Pkwy/N. Sunrise Ave	21	C	58	E	21	C	61	E
72	E. Roseville Pkwy/Secret Ravine Pkwy	20	B	45	D	20	B	51	D
73	Alexandra Dr/E. Roseville Pkwy	9	A	8	A	9	A	9	A
74	Rocky Ridge Dr/E. Roseville Pkwy	8	A	10	B	8	A	10	B
75	Orvietto Dr/Roseville Pkwy	20	B	20	B	20	B	20	B
76	Olympus Dr/Roseville Pkwy	12	B	21	C	12	B	21	C
77	Douglas Blvd/Roseville Pkwy	48	D	62	E	48	D	65	E
78	Village Dr/E. Roseville Pkwy	19	B	20	C	19	B	20	B
79	Eureka Rd/E. Roseville Pkwy	27	C	35	C	26	C	35	C
80	E. Roseville Pkwy/N. Cirby Way	6	A	8	A	6	A	9	A
81	E. Roseville Pkwy/Sierra College Blvd	25	C	36	D	25	C	42	D
82	Atlantic St/Yosemite St	18	B	15	B	19	B	15	B
83	Atlantic St/Tiger Way	17	B	28	C	17	B	29	C
84	Atlantic St/Wills Rd	14	B	13	B	14	B	13	B
85	Atlantic St/I-80 WB Ramps	5	A	34	C	5	A	33	C
86	Eureka Rd/Taylor Rd	28	C	54	D	30	C	53	D
87	Eureka Rd/N. Sunrise Ave	20	B	51	D	20	B	52	D
88	Rocky Ridge Dr/Eureka Rd	22	C	28	C	22	C	28	C
89	Lead Hill Blvd/Eureka Rd	23	C	23	C	22	C	23	C
90	Douglas Blvd/Eureka Road	34	C	62	E	35	C	63	E
91	Deer Valley Apts Dwy/Eureka Rd	13	B	9	A	13	B	9	A
92	Eureka Rd/Ashland Dr	12	B	11	B	12	B	11	B
93	Eureka Rd/Sierra College Blvd	32	C	28	C	32	C	28	C
94	Douglas Blvd/Judah St	9	A	21	C	9	A	21	C
95	Douglas Blvd/Park Dr	9	A	9	A	9	A	9	A
96	Douglas Blvd/Keehner Ave	9	A	10	A	9	A	10	A
97	Douglas Blvd/Folsom Rd	18	B	21	C	18	B	21	C
98	Douglas Blvd/Harding Blvd	53	D	56	E	54	D	57	E
99	Douglas Blvd/I-80 WB Ramps	35	C	72	E	35	C	72	E
100	Douglas Blvd/I-80 EB Ramps	11	B	9	A	11	B	9	A
101	Douglas Blvd/North Sunrise Ave	28	C	60	E	28	C	60	E
102	Douglas Blvd/Santa Clara Dr	17	B	30	C	17	B	28	C

Table 21:
Level of Service at Roseville Signalized Intersections – 2035 CIP Conditions (HCM Methodology)

Intersection		2035 CIP Conditions				2035 CIP Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
103	Douglas Blvd/Sierra Gardens Dr	9	A	32	C	9	A	29	C
104	Douglas Blvd/Target Dwy	9	A	33	C	11	A	33	C
105	Douglas Blvd/Rocky Ridge Drive	30	C	49	D	30	C	49	D
106	Douglas Blvd/Sierra College Blvd	37	D	41	D	37	D	41	D
107	Cirby Way/Foothills Blvd	85	F	69	E	88	F	66	E
108	Cirby Way/Vernon St	43	D	73	E	46	D	75	E
109	Cirby Way/Lindsay Dr	19	B	7	A	21	C	8	A
110	Cirby Way/Melody Ln	15	B	13	B	16	B	8	A
111	Cirby Way/Riverside Ave	49	D	145	F	48	D	140	F
112	Cirby Way/Orlando Ave	15	B	24	C	15	B	24	C
113	Cirby Way/San Simeon Dr	11	B	10	B	10	B	11	B
114	Cirby Way/Sunrise Ave	42	D	65	E	42	D	65	E
115	Cirby Way/Oakridge Dr	17	B	24	C	17	B	24	C
116	Cirby Way/Parkview Dr	7	A	5	A	7	A	5	A
117	Cirby Way/Rocky Ridge Dr	18	B	32	C	18	B	31	C
118	Cirby Way/Champion Oaks Dr	12	B	10	A	12	B	10	A
119	Old Auburn Rd/Cirby Way	20	B	15	B	20	B	15	B
120	Parkway One/Westbrook Blvd	21	C	18	B	22	C	21	C
121	Nobo Dr/Westbrook Blvd	11	B	10	A	11	B	10	A
122	N Brookstone Drive/Westbrook Blvd	9	A	7	A	8	A	7	A
123	S Brookstone Dr/Westbrook Blvd	6	A	8	A	6	A	5	A
124	Octave Avenue/Westbrook Blvd	15	B	11	B	17	B	13	B
125	Lead Hill Blvd/Wal*Mart	4	A	9	A	4	A	9	A
126	Solaire Dr/Westbrook Blvd	14	B	12	B	14	B	12	B
127	Federico Dr/Westbrook Blvd	17	B	17	B	18	B	18	B
128	Sierra Glen Dr/Westbrook Blvd	6	A	4	A	6	A	4	A
129	Sierra Village Dr/Westbrook Blvd	16	B	17	B	16	B	19	B
130	Angus Road/Fiddyment Road	27	C	33	C	24	C	32	C
131	Hayden Pkwy (North)/Fiddyment Rd	18	B	23	C	17	B	19	C
132	Fiddyment Rd/Fiddyment Ranch EW	11	B	17	B	12	B	15	B
133	Hayden Pkwy (South)/Fiddyment Rd	10	B	12	B	10	B	10	B
134	Village Green Dr/Fiddyment Rd	20	B	18	B	20	C	19	B
135	Westlake Dr/Fiddyment Rd	9	A	6	A	9	A	6	A
136	San Fernando Drive/Fiddyment Road	13	B	19	B	13	B	17	B

Table 21:
Level of Service at Roseville Signalized Intersections – 2035 CIP Conditions (HCM Methodology)

Intersection		2035 CIP Conditions				2035 CIP Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
137	Northpark Dr/Woodcreek Oaks Blvd	20	B	19	B	20	B	20	B
138	Parkside Way/Woodcreek Oaks Blvd	25	C	14	B	26	C	15	B
139	Painted Desert Dr/Woodcreek Oaks	18	B	22	C	19	B	25	C
140	Crimson Drige Dr/Woodcreek Oaks	30	C	19	B	31	C	19	B
141	Horncastle Ave/Woodcreek Oaks Blvd	13	B	12	B	13	B	12	B
142	Camino Capistrano/Woodcreek Oaks	18	B	14	B	17	B	15	B
143	Canevari Dr/Woodcreek Oaks Blvd	14	B	20	B	14	B	20	B
144	McAnally Dr/Woodcreek Oaks Blvd	34	C	28	C	39	D	28	C
145	Trailee Ln/Woodcreek Oaks Blvd	16	B	15	B	16	B	15	B
146	Albertsons Dr/Foothills Blvd	17	B	21	C	17	B	21	C
147	HP-South Dwy/Foothills Blvd	9	A	15	B	10	A	15	B
148	NEC/Foothills Blvd	29	C	24	C	30	C	24	C
149	Mistywood Dr/Foothills Blvd	11	B	13	B	11	B	13	B
150	McAnally Dr/Foothills Blvd	16	B	31	C	16	B	31	C
151	Junction Blvd/Foothills Blvd	35	C	38	D	35	C	38	D
152	Pilgrim Dr/Foothills Blvd	8	A	7	A	8	A	7	A
153	Vineyard Rd/Foothills Blvd	25	C	28	C	25	C	29	C
154	Denio Loop/Foothills Blvd	12	B	13	B	12	B	13	B
155	Freedom Way/Washington Blvd	23	C	34	C	25	C	35	C
156	Hallissy Dr/Washington Blvd	6	A	6	A	6	A	6	A
157	Industrial Blvd/Washington Blvd	11	B	27	C	11	B	26	C
158	Diamond Oaks Rd/Washington Blvd	12	B	19	B	12	B	19	B
159	Sawtell Rd/Washington Blvd	10	B	14	B	10	B	14	B
160	Junction Blvd/Washington Blvd	19	B	26	C	19	B	28	C
161	All American City Blvd/Washington	15	B	18	B	15	B	18	B
162	Cortina Cir/Fairway Dr	17	B	18	B	17	B	18	B
163	High School Road/Westpark Dr.	19	B	7	A	9	A	7	A
164	Fairway Dr/Target Dwy	10	A	12	B	10	A	12	B
165	Fairway Dr/Central Park Dr	11	B	19	B	11	B	19	B
166	Fairway Dr/Home Depot Dwy	10	A	27	C	10	A	28	C
167	Fairway Dr/Five Star Blvd	11	B	21	C	11	B	21	C
168	Highland Park/Stanford Ranch Rd	13	B	12	B	13	B	12	B
169	Fairway Dr/Stanford Ranch Rd	28	C	32	C	28	C	29	C
170	5 Star Blvd/Stanford Ranch Rd	19	B	48	D	19	B	40	D

Table 21:
Level of Service at Roseville Signalized Intersections – 2035 CIP Conditions (HCM Methodology)

Intersection		2035 CIP Conditions				2035 CIP Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
171	Hwy-65 NB Ramps/Stanford Ranch	4	A	24	C	5	A	19	B
172	Hwy-65 SB Ramps/Galleria Blvd	62	E	37	D	64	E	37	D
173	JC Penny/Galleria Circle	13	B	15	B	13	B	15	B
174	Antelope Creek Dr/Galleria Blvd	13	B	59	E	13	B	70	E
175	Berry St/Galleria Blvd	16	B	25	C	16	B	25	C
176	Wills Rd/Harding Blvd	18	B	19	B	18	B	19	B
177	Lead Hill Blvd/Harding Blvd	17	B	30	C	17	B	29	C
178	Estates Dr/Harding Blvd	19	B	23	C	19	B	23	C
179	Roseville Square/Harding Blvd	12	B	22	C	12	B	22	C
180	Stone Point Dr/N. Sunrise Ave	10	A	13	B	10	A	12	B
181	N. Sunrise Ave/Automall Dr	18	B	28	C	18	B	28	C
182	Lead Hill Blvd/N. Sunrise Ave	23	C	33	C	23	C	32	C
183	Sierra Gardens Dr/N. Sunrise Ave	15	B	22	C	15	B	22	C
184	Oak Ridge Dr/Sunrise Ave	6	A	8	A	6	A	7	A
185	Frances Dr/Sunrise Ave	5	A	6	A	5	A	6	A
186	Coloma Way/Sunrise Ave	18	B	18	B	18	B	18	B
187	Sun Tree Dr/Sunrise Ave	10	B	19	B	10	B	20	B
188	Kensington Dr/Sunrise Ave	8	A	28	C	8	A	28	C
189	Rocky Ridge Dr/Stone Point Dr	4	A	8	A	4	A	8	A
190	Lead Hill Blvd/Rocky Ridge Dr	17	B	25	C	17	B	25	C
191	Professional Dr/Rocky Ridge Dr	9	A	13	B	9	A	13	B
192	Meadowlark Way/Rocky Ridge Dr	3	A	7	A	3	A	7	A
193	McLaren Dr/Rocky Ridge Dr	8	A	7	A	8	A	7	A
194	Secret Ravine Pkwy/Sierra College	14	B	25	C	14	B	25	C
195	Miners Ravine Pkwy/Sierra College	12	B	14	B	12	B	12	B
196	Olympus Dr/Sierra College Blvd	22	C	26	C	22	C	25	C
197	Indigo Creek Apts Dwy/Sierra College	21	C	27	C	21	C	27	C
198	Old Auburn Rd/Sierra College Blvd	30	C	28	C	30	C	28	C
199	Olympus Dr/Europa St	8	A	6	A	8	A	6	A
200	Secret Ravine Pkwy/Scarborough Dr	14	B	13	B	14	B	13	B
201	Secret Ravine Pkwy/Alexandra Dr	9	A	9	A	9	A	9	A
202	Convention Center Dr/Gibson Dr	61	E	19	B	62	E	19	B
203	I-80 WB Ramps/Riverside Ave	18	B	81	F	17	B	78	E
204	Orlando Ave/Riverside Ave	33	C	74	E	34	C	66	E

Table 21:
Level of Service at Roseville Signalized Intersections – 2035 CIP Conditions (HCM Methodology)

Intersection		2035 CIP Conditions				2035 CIP Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
205	Junction Blvd/Stonecrest Dr	27	C	14	B	30	C	14	B
206	Junction Blvd/Park Regency Dr	27	C	19	B	30	C	19	B
207	Junction Blvd/Woodcreek Oaks Blvd	20	C	25	C	21	C	27	C
208	Junction Blvd/Country Club Dr	33	C	31	C	34	C	30	C
209	Junction Blvd/Revere Dr	4	A	7	A	4	A	7	A
210	Junction Blvd/Americana Dr	12	B	8	A	12	B	8	A
211	Junction Blvd/Sawtell Rd	10	A	11	B	10	A	11	B
212	PFE Rd/Hilltop Cir	12	B	14	B	12	B	14	B
213	Solaire Dr/Santucci Blvd	19	B	18	B	18	B	18	B
214	Federico Dr/Santucci Rd	19	B	19	B	19	B	19	B
215	Sierra Village Dr/Santucci Blvd	18	B	23	C	19	B	23	C
216	Hayden Pkwy./Holt Pkwy.	15	B	15	B	29	C	28	C
217	Alantown Dr/Industrial Ave	27	C	18	B	28	C	18	B
218	Freedom Way/Industrial Avenue	4	A	5	A	4	A	5	A
219	Pleasant Grove Blvd/La Sierra Drive	8	A	9	A	28	C	11	B
220	Westbrook Blvd./Road A	Does Not Exist				15	B	14	B
221	Road D/Road A	Does Not Exist				12	B	12	B
222	Westbrook Blvd./Road B	Does Not Exist				13	B	16	B
223	Road B/Road A	Does Not Exist				12	B	12	B
224	Westbrook Blvd./Road D	Does Not Exist				8	A	8	A
225	Secret Ravine Pkwy/Medical Plaza	30	C	23	C	18	B	15	B
226	High School Road/Hayden Pkwy	22	C	25	C	23	C	25	C
P1	Darling/Riverside (located in POD)	22	C	20	B	22	C	20	B
P2	Vernon/Douglas (located in POD)	25	C	47	D	25	C	47	D
P3	Vernon/Grant (located in POD)	6	A	7	A	6	A	7	A
P4	Vernon/Judah (located in POD)	5	A	9	A	5	A	9	A
P5	Vernon/Lincoln (located in POD)	13	B	32	C	13	B	32	C
P6	Main/Washington (located in POD)	24	C	38	D	26	C	39	D
P7	Oak /S Grant (located in POD)	7	A	11	B	7	A	11	B
P8	Oak/Lincoln (located in POD)	17	B	20	C	14	B	22	C

Notes:
1. Intersections located in Pedestrian Overlay District (POD) are exempt from the City's LOS policies.

Shaded cells represent significant impacts.
Source: Fehr & Peers, 2015.

The project would cause the following cumulatively significant impacts:

AM Peak Hour

- McAnally Drive/Woodcreek Oaks Boulevard (LOS C to D)
- Blue Oaks Boulevard/Westbrook Boulevard (LOS C to E)

PM Peak Hour

- Roseville Parkway/Gibson Drive (LOS D to E)
- Blue Oaks Boulevard/Westbrook Boulevard (LOS C to F)
- Baseline Road/Santucci Boulevard (LOS C to D)
- Westbrook Boulevard/Vista Grande Boulevard (LOS C to D)
- Baseline Road/Westbrook Boulevard (LOS C to D)

Table 22 presents a summary of signalized intersection operations during the AM and PM peak hours under 2035 CIP No Project and Plus Project conditions. The addition of the project traffic during the AM peak hour would cause the overall percentage of intersections operating at LOS C or better to remain nearly unchanged, decreasing very slightly from 89.5 to 89.3 percent. The overall percentage of intersections operating at LOS C or better during the PM peak hour would decrease 79.2 to 77.8 percent.

Table 22:
City of Roseville Signalized Intersection Operations – 2035 CIP Conditions (HCM Methodology)

Level of Service	2035 CIP Conditions		2035 CIP Plus Project Conditions	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Total Intersections	221	221	226	226
LOS A-C	198 (89.5%)	175 (79.2%)	198 (89.3%)	174 (77.8%)
LOS D	15 (7%)	22 (10%)	15 (7%)	25 (11%)
LOS E	6 (3%)	18 (8%)	7 (3%)	19 (8%)
LOS F	2 (1%)	6 (3%)	2 (1%)	6 (3%)
Percent Operating at LOS D, E, or F	11.5%	20.8%	11.6%	22.3%

Notes:
1. Excludes the eight signalized intersections located in the City's Pedestrian Overlay District (POD). "Plus project" results include the five new signalized intersections within the Amoruso Specific Plan.

Source: Fehr & Peers, 2015.

ANALYSIS OF ADJACENT JURISDICTION FACILITIES

Table 23 displays the 2035 CIP AM and PM peak hour operations at study intersections outside of Roseville under No Project and Plus Project conditions. Refer to separately bound Appendix C for technical calculations.

Table 23:
Intersection Operations Outside of Roseville – 2035 CIP COnditions

Intersection	Jurisdiction	Control Type	2035 CIP No Project				2035 CIP Plus Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS
Locust Rd/ Baseline Rd	Placer County	Signal	0.24	A	0.45	A	0.25	A	0.46	A
Watt Ave/PFE Rd	Placer County	Signal	0.66	B	0.70	B	0.68	B	0.74	C
Walerga Rd/PFE Rd	Placer County	Signal	1.08	F	0.92	E	1.09	F	0.96	E
Cook Riolo Rd/ PFE Rd	Placer County	AWSC	226	F	180	F	251	F	192	F
Fiddyment Rd/ Sunset Blvd W	Placer County	Signal	0.46	A	0.58	A	0.75	C	0.94	E
Fiddyment Rd/ Athens Ave	Placer County	Signal	0.82	D	0.95	E	0.85	D	1.05	F
Industrial Ave/ Athens Ave	Placer County	Signal	0.72	C	0.76	C	0.73	C	0.77	C
N Foothills Blvd/ Athens Ave	Placer County	TWSC	163 (780)	F (F)	2084 (8138)	F (F)	2018 (6084)	F (F)	2035 (8166)	F (F)
Cincinnati Ave/W Sunset Blvd	Placer County	Signal	0.99	E	0.95	E	0.98	E	0.95	E
Westbrook Blvd/W Sunset Blvd	Placer County	Signal	Does Not Exist				0.49	A	0.64	B
Pleasant Grove Rd N/Riego Rd	Sutter County	Signal	15	B	8	A	15	B	8	A
Pleasant Grove Rd S/Riego Rd	Sutter County	Signal	12	B	23	C	12	B	22	C

Table 23:
Intersection Operations Outside of Roseville – 2035 CIP COnditions

Intersection	Jurisdiction	Control Type	2035 CIP No Project				2035 CIP Plus Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS
Watt Ave/Elverta Rd	Sacramento County	Signal	0.92	E	1.02	F	0.91	E	1.03	F
Walerga Rd/ Elverta Rd	Sacramento County	Signal	0.96	E	1.11	F	0.97	E	1.11	F
Watt Ave/ Antelope Rd	Sacramento County	Signal	1.03	F	1.02	F	1.04	F	1.03	F
Walerga Rd/ Antelope Rd	Sacramento County	Signal	0.73	C	0.84	D	0.74	C	0.85	D
Watt Ave/Elkhorn Blvd	Sacramento County	Signal	0.95	E	1.02	F	0.96	E	1.03	F
Walerga Rd/ Elkhorn Blvd	Sacramento County	Signal	0.74	C	1.01	F	0.74	C	1.02	F
Ferrari Ranch Rd/ Groveland Ln	Lincoln	Signal	28	C	39	D	31	C	42	D
Ferrari Ranch Rd/ Joiner Pkwy	Lincoln	Signal	46	D	45	D	47	D	46	D
Joiner Pkwy/ Twelve Bridges Dr	Lincoln	Signal	44	D	43	D	44	D	43	D
Sunset Blvd/SR65 NB Ramps	Caltrans	Signal	26	C	12	B	26	C	11	B
Sunset Blvd/SR65 SB Ramps	Caltrans	Signal	22	C	12	B	22	C	11	B

Notes:
1. At signalized intersections in Sacramento County and Placer County, V/C ratio reported based on Circular 212 method. At signalized intersections in Lincoln and on Caltrans facilities, average delay reported based on HCM method.
2. AWSC = All Way Stop Control. TWSC = Two-Way Stop Control.

Shaded cells represent significant impacts.
At two-way stop control intersections, delay/LOS for worst movement shown in parenthesis with overall delay/LOS not shown in parenthesis.
Source: Fehr & Peers, 2015.

The project would cause the following cumulatively significant impacts:

AM Peak Hour

- Cook Riolo Road/PFE Road (LOS F exacerbated)
- N. Foothills Boulevard/Athens Avenue (LOS F exacerbated)

PM Peak Hour

- Cook Riolo Road/PFE Road (LOS F exacerbated)
- Sunset Boulevard West/Fiddyment Road (LOS A to E)
- Fiddyment Road/Athens Avenue (LOS E to F)
- N. Foothills Boulevard/Athens Avenue (LOS F exacerbated)

Table 24 displays the number of lanes, ADT, v/c ratio, and LOS at study roadways located in Rocklin, Placer County, Sutter County, and Sacramento County under 2035 CIP No Project and Plus Project conditions.

Table 24:
Roadway Segment Operations Outside of Roseville – 2035 CIP Conditions

Segment	Jurisdiction	Number of Lanes	2035 CIP No Project			2035 CIP Plus Project		
			Average Daily Traffic (ADT)	V/C Ratio	LOS	Average Daily Traffic (ADT)	V/C Ratio	LOS
Baseline Road west of Watt Avenue	Placer County	6	34,500	0.64	B	34,700	0.64	B
Watt Avenue south of Baseline Road	Placer County	6	29,500	0.55	A	30,000	0.56	A
Sunset Boulevard West west of Fiddyment Road	Placer County	2	3,300	0.18	A	17,300	0.96	E
Sunset Boulevard West east of Pleasant Grove Rd	Placer County	2	3,900	0.22	A	6,600	0.37	A
Sunset Blvd west of SR 65 (across UPRR)	Placer County	4	31,000	0.86	D	30,800	0.86	D
Athens Avenue east of Fiddyment Road	Placer County	2	22,600	1.26	F	23,100	1.28	F
Fiddyment Road from Athens Avenue to Sunset Blvd. West	Placer County	4	34,500	0.96	E	39,300	1.09	F
Fiddyment Road from Sunset Blvd. West to Roseville City limits	Placer County	4	33,900	0.94	E	25,300	0.70	C
Brewer Road north of Baseline Road	Placer County	2	300	0.02	A	300	0.02	A
Watt Avenue south of PFE Road	Placer County	4	43,700	1.21	F	44,100	1.23	F
Walerga Road south of Baseline Road	Placer County	4	38,300	1.06	F	38,200	1.06	F
Watt Avenue south of Elverta Road	Sacramento County	4	35,600	0.99	E	35,600	0.99	E
Watt Avenue south of Antelope Road	Sacramento County	6	38,900	0.72	C	39,100	0.72	C
Watt Avenue south of Elkhorn Boulevard	Sacramento County	6	46,900	0.87	D	47,300	0.88	D
Walerga Road south of PFE Road	Sacramento County	2	43,400	2.41	F	43,700	2.43	F

Table 24:
Roadway Segment Operations Outside of Roseville – 2035 CIP Conditions

Segment	Jurisdiction	Number of Lanes	2035 CIP No Project			2035 CIP Plus Project		
			Average Daily Traffic (ADT)	V/C Ratio	LOS	Average Daily Traffic (ADT)	V/C Ratio	LOS
Walerga Road south of Antelope Road	Sacramento County	4	32,900	0.91	E	33,000	0.92	E
Walerga Road south of Elkhorn Boulevard	Sacramento County	4	28,400	0.79	C	28,500	0.79	C
Pleasant Grove Rd north of Baseline Rd	Sutter County	2	8,900	0.49	A	9,100	0.51	A
Riego Road east of SR 70/99	Sutter County	6	22,100	0.41	A	22,300	0.41	A
Howsley Road east of SR 70/99	Sutter County	2	2,800	0.16	A	2,800	0.16	A
Sunset Boulevard east of SR 65	City of Rocklin	6	35,700	0.66	B	36,000	0.67	B
Blue Oaks Blvd east of Lonetree Blvd	City of Rocklin	4	17,300	0.48	A	17,400	0.48	A
Wildcat Blvd north of Ranch View Drive	City of Rocklin	4	32,100	0.89	D	32,900	0.89	D

Notes:
1. V/C Ratio = Volume-to-Capacity Ratio. LOS = Level of Service

Shaded cells represent significant impacts.

Source: Fehr & Peers, 2015.

The project would cause the following cumulatively significant impacts:

- Sunset Boulevard West between Westbrook Boulevard and Fiddyment Road (LOS A to E)
- Fiddyment Road from Athens Avenue to Sunset Boulevard West (LOS E to F)

Table 25 displays AM and PM peak hour operations at study freeway facilities under 2035 CIP No Project and Plus Project conditions. Refer to separately bound Appendix C for technical calculations.

Table 25:
Freeway Level of Service – 2035 CIP Conditions

SR 65 Freeway Facility	Type	2035 CIP No Project Conditions				2035 CIP Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density	LOS	Density	LOS	Density	LOS	Density	LOS
Northbound State Route 65									
I-80 to Galleria Blvd	Basic	42	E	39	E	42	E	39	E
Galleria Blvd Off-Ramp	Diverge	39	E	39	E	39	E	39	E
Galleria Blvd On-Ramp	Merge	35	E	36	E	35	E	36	E
Pleasant Grove Blvd Off-Ramp	Diverge	24	C	22	C	24	C	22	C
Pleasant Grove Blvd On to Blue Oaks Off Ramp	Weave	N/A	D	N/A	E	N/A	D	N/A	E
Blue Oaks Blvd Loop On-Ramp	Merge	27	C	24	C	27	C	25	C
Blue Oaks Blvd On to Sunset Off-Ramp	Basic	-	F	40	E	-	F	40	E
Sunset Blvd Off-Ramp	Diverge	-	F	-	F	-	F	-	F
Sunset Blvd Loop On Ramp	Merge	28	C	33	D	27	C	33	D
Sunset Blvd Slip On-Ramp to Placer Pkwy Off-Ramp	Weave	N/A	D	N/A	D	N/A	D	N/A	D
Whitney Ranch Pkwy Loop On-Ramp	Merge	25	C	-	F	25	C	-	F
Whitney Ranch Pkwy Slip On-Ramp	Merge	23	C	-	F	22	C	-	F
Whitney Ranch Pkwy Slip On-Ramp to Twelve Bridges Off-Ramp	Basic	25	C	-	F	25	C	-	F
Twelve Bridges Dr Off-Ramp	Diverge	30	D	-	F	30	D	-	F
Twelve Bridges Dr On to Lincoln Off-Ramp	Weave	N/A	B	N/A	F	N/A	B	N/A	F
Lincoln Blvd Off to Ferrari Ranch Rd	Basic	11	A	26	C	11	A	26	C
Ferrari Ranch Rd Off-Ramp	Basic	11	A	26	C	11	A	26	C
Ferrari Ranch Rd On-Ramp	Merge	13	B	27	C	13	B	27	C
Ferrari Ranch Rd to Nelson Ln	Basic	11	A	26	C	11	B	26	C
Southbound State Route 65									
Nelson Ln to Ferrari Ranch Rd	Basic	23	C	15	B	23	C	15	B
Ferrari Ranch Rd Off-ramp	Diverge	29	D	20	B	29	D	20	B

Table 25:
Freeway Level of Service – 2035 CIP Conditions

SR 65 Freeway Facility	Type	2035 CIP No Project Conditions				2035 CIP Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density	LOS	Density	LOS	Density	LOS	Density	LOS
Ferrari Ranch Rd Loop On Ramp	Basic	20	C	13	B	20	C	13	B
Ferrari Ranch Rd Direct On Ramp	Merge	27	C	14	B	27	C	14	B
Ferrari Ranch Rd to Lincoln Blvd	Basic	-	F	21	C	-	F	21	C
Lincoln Blvd On Ramp to Twelve Bridges Off	Weave	N/A	F	N/A	C	N/A	F	N/A	C
Twelve Bridges Dr Loop On Ramp	Merge	-	F	34	D	-	F	34	D
Twelve Bridges Dr to Placer Pwky	Basic	-	F	34	D	-	F	34	D
Placer Pkwy Off-ramp	Diverge	-	F	26	C	-	F	25	C
Placer Pkwy Loop On-Ramp	Merge	38	E	35	E	39	E	35	E
Placer Pkwy On-ramp to Sunset Blvd Off-Ramp	Weave[1]	24	C	N/A	D	24	C	N/A	D
Sunset Blvd Loop On Ramp	Merge	36	E	36	E	36	E	36	E
Sunset Blvd Direct On-Ramp	Merge	-	F	-	F	-	F	-	F
Sunset Blvd On-Ramp to Blue Oaks Blvd Off-Ramp	Basic	-	F	-	F	-	F	-	F
Blue Oaks Blvd Off-Ramp	Diverge	30	D	30	D	30	D	30	D
Blue Oaks Blvd Loop On-Ramp	Merge	24	C	23	C	24	C	23	C
Blue Oaks Blvd On to Pleasant Grove Off	Weave	N/A	E	N/A	F	N/A	E	N/A	F
Pleasant Grove Blvd Loop On-Ramp	Merge	27	C	30	D	28	C	30	D
Pleasant Grove Blvd Slip On-Ramp	Merge	34	D	36	E	35	D	36	E
Galleria Blvd Off-Ramp	Diverge	36	E	38	E	36	E	38	E
Galleria Blvd On-Ramp	Merge	30	D	-	F	31	D	-	F
Galleria Blvd to I-80	Basic	31	D	44	E	32	D	44	E

Notes:
1. This segment is analyzed as a basic segment in the AM peak hour because the calculation falls out of the realm of a weave segment.
2. 'N/A' = Not applicable because density not calculated for weave segments based on Leisch method.
3. '-' = Density not reported for facilities operating at LOS F.

Shaded cells represent significant impacts.

Source: Fehr & Peers, 2015.

The project would not worsen any freeway segments from acceptable to unacceptable. The project would add modest (20 vehicles per hour or less) levels of traffic to certain facilities that are projected to operate at an unacceptable LOS F. Since these increases are not significant according to the established significance thresholds, the project would not cause any significant freeway impacts under 2035 CIP conditions.

The magnitude of project-added traffic impacts is lower under 2035 CIP conditions compared to existing plus project conditions for several reasons. First, the 2035 CIP scenario includes substantial levels of new land uses on the west side of Roseville, which enable project trips to have closer origins/destinations. Second, a substantially larger roadway network is assumed under 2035 CIP conditions, upon which project trips can be spread across. The combined effect of these factors is fewer project impacts under 2035 CIP conditions versus existing plus project conditions.

A January 22, 2016 comment letter from Placer County indicated that the County's CIP does not include the widening of Fiddyment Road to four lanes. This improvement was assumed in place under cumulative conditions because it was listed as a Tier 1 (funded) project in the SACOG MTP/SCS. As is shown on Table 24, project impacts to this segment are significant even with the assumed four-lane widening. Thus, the inclusion versus exclusion of this widening does not materially affect the project's impacts and mitigation measure responsibiltiies.

Refer to Chapter 7 for cumulatively significant impacts and recommended mitigations.

6. 2035 CUMULATIVE CONDITIONS

This chapter describes the analysis of project impacts under 2035 Cumulative conditions. This scenario builds certain roadway network and land use assumptions described below onto the 2035 CIP scenario. These assumptions, along with the resulting traffic forecasts and operations analysis results, are presented in this chapter.

LAND USE AND ROADWAY NETWORK ASSUMPTIONS

This scenario begins with the 2035 CIP model and adds the following land use and roadway network improvements:

Land Use Assumptions

- Partial build-out of Placer Ranch (50% residential, 25% non-residential, and 25,000-student University).
- Campus Oaks (HP Campus Rezone) project including the extension of HP Way as a two- to four-lane street from Foothills Boulevard through the HP Campus northwesterly to Blue Oaks Boulevard.

Roadway Network Assumptions

- Extension of Placer Parkway westerly as a four-lane roadway from Foothills Boulevard to Santucci Boulevard.

An interchange is not currently approved on Placer Parkway at Westbrook Boulevard. However, since this scenario assumes partial development of Placer Ranch and construction of Placer Parkway westerly from Foothills Boulevard to Santucci Boulevard, it was reasonable to assume that Westbrook Boulevard connects with Placer Parkway (given the amount of land use it would serve).

A January 22, 2016 comment letter from Placer County requested that the cumulative analysis should include a separate evaluation of a proposed connection of Westbrook Boulevard at Placer Parkway. Such an analysis was not conducted for two reasons. First, it would be speculative to assume a particular at-grade versus grade-separated configuration since no such plans have been prepared to date. Second, right-of-way is being set aside to ensure an adequate area is available to construct the needed infrastructure to achieve acceptable operations.

TRAFFIC FORECASTS

Traffic forecasts were developed for the following scenarios:

- 2035 Cumulative No Project Conditions – assumes the above land uses and roadway network assumptions, but no development on the Amoruso Property.

- 2035 Cumulative Plus Project Conditions – assumes development of the Amoruso Ranch Specific Plan.

The difference method forecasting procedure (described the previous chapter) was used to develop the 2035 Cumulative forecasts.

CITY OF ROSEVILLE ROADWAY SYSTEM

Figures 12 and 13 display the resulting 2035 Cumulative ADT forecasts on Roseville roadways under No Project and Plus Project conditions, respectively. The 2035 Cumulative AM and PM peak hour turning movement forecasts and lane configurations under No Project and Plus Project conditions are included in separately bound technical Appendix D.

Table 26 displays 2035 Cumulative AM and PM peak hour operations at all existing/planned signalized intersections in Roseville under No Project and Plus Project conditions. Refer to separately bound Appendix D for technical calculations. The project would cause the following cumulatively significant impacts:

AM Peak Hour

No impacts.

PM Peak Hour

- Blue Oaks Boulevard/Collector C (LOS C to D)
- Blue Oaks Boulevard/Washington Boulevard/SR 65 SB Ramps (LOS D to E)
- Eureka Road/Taylor Road/I-80 EB Ramps (LOS D to E)

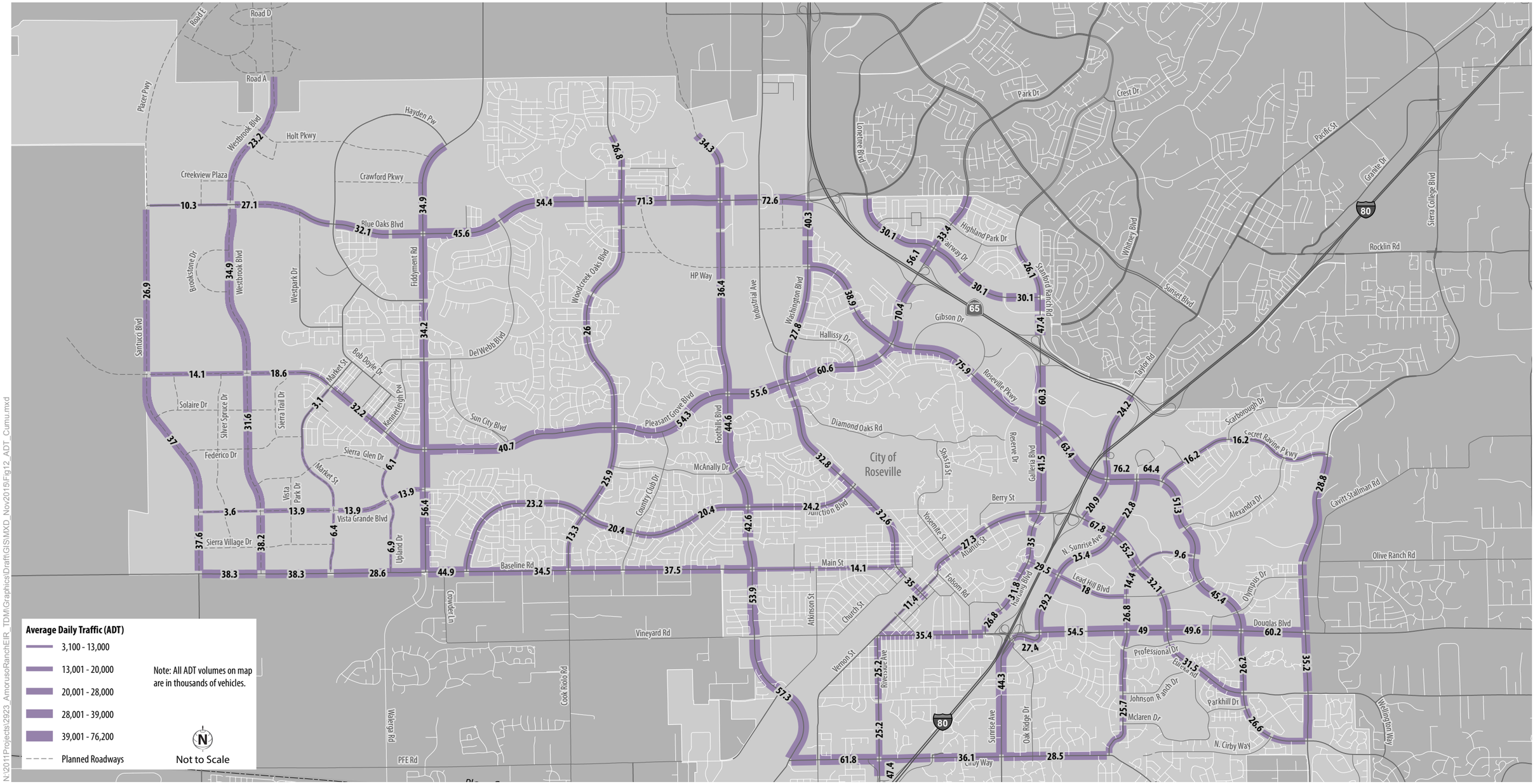

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Figure 12

Average Daily Traffic Volume (ADT) on Roseville Roadways - 2035 Cumulative No Project Conditions

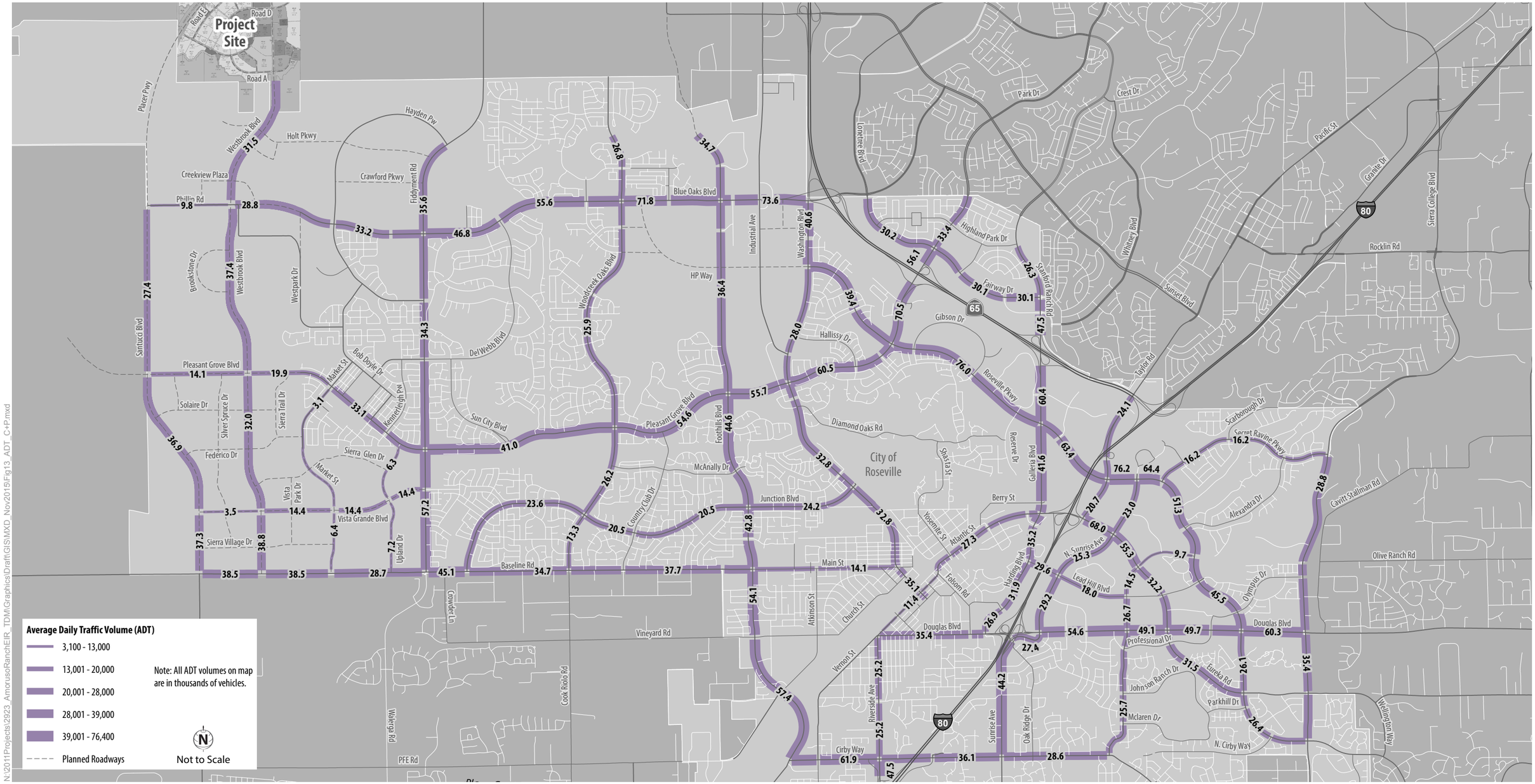

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Figure 13

Average Daily Traffic Volume (ADT) on Roseville Roadways - 2035 Cumulative Plus Project Conditions

Table 26:
Level of Service at Roseville Signalized Intersections – 2035 Cumulative Conditions (HCM Methodology)

	Intersection	2035 Cumulative Conditions				2035 Cumulative Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Blue Oaks Blvd/Grasscreek Drive	15	B	15	B	14	B	15	B
2	Blue Oaks Blvd/Westbrook Blvd	24	C	28	C	27	C	35	C
3	Blue Oaks Blvd/Creekview Plaza	13	B	14	B	14	B	14	B
4	Blue Oaks Blvd/West Park Drive	14	B	13	B	13	B	13	B
5	Blue Oaks Blvd/Hayden Pkwy	29	C	25	C	31	C	25	C
6	Blue Oaks Blvd/Fiddyment Rd	34	C	36	D	35	C	36	D
7	Blue Oaks Blvd/Orchard View Rd	8	A	8	A	8	A	8	A
8	Blue Oaks Blvd/Del Webb Blvd	11	B	10	A	11	B	10	A
9	Blue Oaks Blvd/Crocker Ranch Rd	11	B	12	B	12	B	12	B
10	Blue Oaks Blvd/Diamond Creek Blvd	21	C	40	D	22	C	37	D
11	Blue Oaks Blvd/Woodcreek Oaks Blvd	37	D	64	E	31	C	64	E
12	Blue Oaks Blvd/Wood Meadow Dr	10	A	24	C	8	A	33	C
13	Blue Oaks Blvd/New Meadow Dr	6	A	15	B	4	A	15	B
14	Blue Oaks Blvd/Collector C	21	C	32	C	21	C	55	D
15	Blue Oaks Blvd/Foothills Blvd	34	C	89	F	34	C	100	F
16	Blue Oaks Blvd/Fidelity Way	4	A	6	A	4	A	10	A
17	Blue Oaks Blvd/Washington Blvd	32	C	52	D	33	C	59	E
18	Pleasant Grove Blvd/Santucci Blvd	21	C	29	C	21	C	28	C
19	Pleasant Grove Blvd/Silver Spruce Dr	7	A	9	A	7	A	8	A
20	Pleasant Grove Blvd/Westbrook Blvd	28	C	23	C	29	C	26	C
21	Pleasant Grove Blvd/Sierra Trail Dr	17	B	13	B	16	B	13	B
22	Pleasant Grove Blvd/Market St	29	C	27	C	33	C	29	C
23	Pleasant Grove Blvd/Monument Dr	15	B	14	B	15	B	14	B
24	Pleasant Grove Blvd/Upland Dr	11	B	11	B	11	B	11	B
25	Pleasant Grove Blvd/Fiddyment Rd	44	D	43	D	48	D	44	D
26	Pleasant Grove Blvd/Sun City Blvd	6	A	6	A	6	A	6	A
27	Pleasant Grove Blvd/Rose Creek Rd	4	A	5	A	4	A	5	A
28	Pleasant Grove Blvd/Michener Dr	6	A	6	A	6	A	7	A
29	Pleasant Grove Blvd/Woodcreek Oaks	24	C	36	D	24	C	35	D
30	Pleasant Grove Blvd/Country Club Dr	19	B	11	B	19	B	11	B
31	Pleasant Grove Blvd/Foothills Blvd	47	D	55	E	46	D	55	E
32	Pleasant Grove Blvd/Washington Blvd	35	D	40	D	35	D	41	D
33	Pleasant Grove Blvd/Hallissy Dr	9	A	31	C	9	A	33	C
34	Pleasant Grove Blvd/Roseville Pkwy	85	F	129	F	88	F	126	F

Table 26:
Level of Service at Roseville Signalized Intersections – 2035 Cumulative Conditions (HCM Methodology)

Intersection		2035 Cumulative Conditions				2035 Cumulative Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
35	Highland Pointe Dr/Pleasant Grove	23	C	105	F	23	C	102	F
36	Pleasant Grove Blvd/Hwy-65 SB	9	A	15	B	9	A	17	B
37	Pleasant Grove Blvd/Hwy-65 NB	12	B	20	B	12	B	20	B
38	Fairway Dr/Pleasant Grove Blvd	38	D	80	F	38	D	82	F
39	Highland Park Dr/Pleasant Grove Blvd	19	B	25	C	19	B	25	C
40	Vista Grande Blvd/Santucci Blvd	14	B	14	B	14	B	14	B
41	Vista Grande Blvd/Silver Spruce Dr	15	B	15	B	14	B	15	B
42	Vista Grande Blvd/Westbrook Blvd	18	B	34	C	18	B	33	C
43	Vista Grande Blvd/Vista Park Dr	14	B	26	C	14	B	30	C
44	Vista Grande Blvd/Market St	18	B	25	C	18	B	25	C
45	Vista Grande Blvd/Monarch Grove St	21	C	15	B	21	C	15	B
46	Vista Grande Blvd/Upland Dr	15	B	21	C	15	B	23	C
47	Westhills Dr/Fiddyment Rd	29	C	30	C	31	C	32	C
48	Baseline Rd/Regional Park Access	17	B	17	B	17	B	17	B
49	Baseline Rd/Santucci Blvd	29	C	37	D	30	C	38	D
50	Baseline Rd/West Shopping Center	12	B	14	B	12	B	14	B
51	Baseline Rd/Westbrook Blvd	28	C	34	C	28	C	34	C
52	Baseline Rd/Central Shopping Center	5	A	6	A	5	A	6	A
53	Baseline Rd/Market St	19	B	17	B	19	B	17	B
54	Baseline Rd/East Shopping Center	10	B	14	B	11	B	14	B
55	Baseline Rd/Upland Dr	10	A	10	A	10	A	10	A
56	Baseline Rd/Fiddyment Rd	41	D	43	D	41	D	43	D
57	Baseline Rd/Junction Blvd	20	B	15	B	18	B	15	B
58	Baseline Rd/Woodcreek Oaks Blvd	42	D	39	D	43	D	39	D
59	Baseline Rd/Foothills Blvd	68	E	38	D	68	E	38	D
60	HP-Main Dwy/Foothills Blvd	38	D	55	D	41	D	54	D
61	Roseville Pkwy/Washington Blvd	22	C	36	D	22	C	36	D
62	Trestle Rd/Roseville Pkwy	9	A	18	B	9	A	22	C
63	Roseville Pkwy/Gibson Drive (w)	43	D	49	D	43	D	33	C
64	Roseville Pkwy/Chase Dr	8	A	20	B	8	A	24	C
65	Roseville Pkwy/Gibson Dr	13	B	50	D	12	B	54	D
66	West Mall/Roseville Pkwy	7	A	19	B	7	A	19	C
67	Roseville Pkwy/Reserve Dr	21	C	59	E	21	C	56	E
68	Roseville Pkwy/Galleria Blvd	39	D	67	E	40	D	67	E

Table 26:
Level of Service at Roseville Signalized Intersections – 2035 Cumulative Conditions (HCM Methodology)

Intersection		2035 Cumulative Conditions				2035 Cumulative Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
69	Roseville Pkwy/Creekside Ridge Dr	14	B	26	C	14	B	26	C
70	E. Roseville Pkwy/Taylor Rd	44	D	61	E	45	D	61	E
71	E. Roseville Pkwy/N. Sunrise Ave	23	C	57	E	23	C	58	E
72	E. Roseville Pkwy/Secret Ravine Pkwy	21	C	61	E	21	C	62	E
73	Alexandra Dr/E. Roseville Pkwy	11	B	9	A	11	B	9	A
74	Rocky Ridge Dr/E. Roseville Pkwy	11	B	11	B	11	B	10	B
75	Orvietto Dr/Roseville Pkwy	23	C	20	B	23	C	20	B
76	Olympus Dr/Roseville Pkwy	13	B	21	C	13	B	21	C
77	Douglas Blvd/Roseville Pkwy	48	D	61	E	49	D	58	E
78	Village Dr/E. Roseville Pkwy	20	B	19	B	19	B	20	C
79	Eureka Rd/E. Roseville Pkwy	27	C	37	D	27	C	36	D
80	E. Roseville Pkwy/N. Cirby Way	6	A	8	A	6	A	7	A
81	E. Roseville Pkwy/Sierra College Blvd	25	C	38	D	25	C	37	D
82	Atlantic St/Yosemite St	18	B	14	B	18	B	14	B
83	Atlantic St/Tiger Way	17	B	26	C	17	B	26	C
84	Atlantic St/Wills Rd	14	B	13	B	14	B	13	B
85	Atlantic St/I-80 WB Ramps	5	A	32	C	5	A	30	C
86	Eureka Rd/Taylor Rd	28	C	53	D	30	C	55	E
87	Eureka Rd/N. Sunrise Ave	19	B	59	E	19	B	57	E
88	Rocky Ridge Dr/Eureka Rd	21	C	28	C	21	C	28	C
89	Lead Hill Blvd/Eureka Rd	22	C	23	C	22	C	23	C
90	Douglas Blvd/Eureka Road	29	C	66	E	29	C	65	E
91	Deer Valley Apts Dwy/Eureka Rd	13	B	9	A	13	B	9	A
92	Eureka Rd/Ashland Dr	13	B	11	B	12	B	11	B
93	Eureka Rd/Sierra College Blvd	33	C	29	C	33	C	28	C
94	Douglas Blvd/Judah St	9	A	20	C	9	A	20	B
95	Douglas Blvd/Park Dr	9	A	10	A	9	A	10	A
96	Douglas Blvd/Keehner Ave	9	A	8	A	9	A	8	A
97	Douglas Blvd/Folsom Rd	19	B	23	C	19	B	22	C
98	Douglas Blvd/Harding Blvd	50	D	50	D	50	D	52	D
99	Douglas Blvd/I-80 WB Ramps	38	D	82	F	39	D	82	F
100	Douglas Blvd/I-80 EB Ramps	10	A	8	A	10	A	9	A
101	Douglas Blvd/North Sunrise Ave	28	C	60	E	28	C	63	E
102	Douglas Blvd/Santa Clara Dr	8	A	29	C	8	A	29	C

Table 26:
Level of Service at Roseville Signalized Intersections – 2035 Cumulative Conditions (HCM Methodology)

Intersection		2035 Cumulative Conditions				2035 Cumulative Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
103	Douglas Blvd/Sierra Gardens Dr	9	A	29	C	9	A	29	C
104	Douglas Blvd/Target Dwy	6	A	39	D	6	A	38	D
105	Douglas Blvd/Rocky Ridge Drive	27	C	49	D	28	C	49	D
106	Douglas Blvd/Sierra College Blvd	37	D	41	D	38	D	41	D
107	Cirby Way/Foothills Blvd	80	F	69	E	82	F	71	E
108	Cirby Way/Vernon St	45	D	69	E	46	D	68	E
109	Cirby Way/Lindsay Dr	19	B	10	B	20	C	10	A
110	Cirby Way/Melody Ln	15	B	15	B	15	B	13	B
111	Cirby Way/Riverside Ave	48	D	150	F	48	D	140	F
112	Cirby Way/Orlando Ave	15	B	24	C	15	B	24	C
113	Cirby Way/San Simeon Dr	11	B	11	B	11	B	12	B
114	Cirby Way/Sunrise Ave	42	D	66	E	42	D	65	E
115	Cirby Way/Oakridge Dr	18	B	24	C	17	B	24	C
116	Cirby Way/Parkview Dr	7	A	6	A	7	A	6	A
117	Cirby Way/Rocky Ridge Dr	19	B	32	C	19	B	31	C
118	Cirby Way/Champion Oaks Dr	12	B	10	A	12	B	10	A
119	Old Auburn Rd/Cirby Way	20	B	15	B	20	B	15	B
120	Parkway One/Westbrook Blvd	19	B	17	B	18	B	16	B
121	Nobo Dr/Westbrook Blvd	10	B	12	B	11	B	12	B
122	N Brookstone Drive/Westbrook Blvd	8	A	8	A	8	A	8	A
123	S Brookstone Dr/Westbrook Blvd	6	A	7	A	6	A	6	A
124	Octave Avenue/Westbrook Blvd	18	B	15	B	16	B	16	B
125	Lead Hill Blvd/Wal*Mart	4	A	9	A	4	A	9	A
126	Solaire Dr/Westbrook Blvd	14	B	19	B	14	B	17	B
127	Federico Dr/Westbrook Blvd	19	B	17	B	19	B	17	B
128	Sierra Glen Dr/Westbrook Blvd	4	A	4	A	5	A	4	A
129	Sierra Village Dr/Westbrook Blvd	16	B	17	B	16	B	17	B
130	Angus Road/Fiddyment Road	27	C	25	C	30	C	25	C
131	Hayden Pkwy (North)/Fiddyment Rd	19	B	27	C	19	B	27	C
132	Fiddyment Rd/Fiddyment Ranch EW	11	B	15	B	11	B	15	B
133	Hayden Pkwy (South)/Fiddyment Rd	11	B	10	B	11	B	9	A
134	Village Green Dr/Fiddyment Rd	19	B	16	B	19	B	19	B
135	Westlake Dr/Fiddyment Rd	9	A	6	A	9	A	6	A
136	San Fernando Drive/Fiddyment Road	12	B	19	B	13	B	12	B

Table 26:
Level of Service at Roseville Signalized Intersections – 2035 Cumulative Conditions (HCM Methodology)

Intersection		2035 Cumulative Conditions				2035 Cumulative Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
137	Northpark Dr/Woodcreek Oaks Blvd	22	C	21	C	21	C	17	C
138	Parkside Way/Woodcreek Oaks Blvd	18	B	20	B	19	B	20	C
139	Painted Desert Dr/Woodcreek Oaks	15	B	17	B	15	B	17	B
140	Crimson Drige Dr/Woodcreek Oaks	31	C	12	B	31	C	12	B
141	Horncastle Ave/Woodcreek Oaks Blvd	13	B	12	B	13	B	12	B
142	Camino Capistrano/Woodcreek Oaks	13	B	15	B	13	B	14	B
143	Canevari Dr/Woodcreek Oaks Blvd	12	B	16	B	12	B	17	B
144	McAnally Dr/Woodcreek Oaks Blvd	26	C	22	C	26	C	22	C
145	Trailee Ln/Woodcreek Oaks Blvd	16	B	15	B	16	B	15	B
146	Albertsons Dr/Foothills Blvd	17	B	20	C	17	B	21	C
147	HP-South Dwy/Foothills Blvd	8	A	15	B	8	A	15	B
148	NEC/Foothills Blvd	26	C	18	B	27	C	18	B
149	Mistywood Dr/Foothills Blvd	10	B	12	B	10	B	12	B
150	McAnally Dr/Foothills Blvd	15	B	21	C	15	B	21	C
151	Junction Blvd/Foothills Blvd	32	C	41	D	33	C	42	D
152	Pilgrim Dr/Foothills Blvd	9	A	7	A	9	A	7	A
153	Vineyard Rd/Foothills Blvd	24	C	26	C	24	C	27	C
154	Denio Loop/Foothills Blvd	13	B	11	B	13	B	12	B
155	Freedom Way/Washington Blvd	17	B	35	C	17	B	32	C
156	Hallissy Dr/Washington Blvd	7	A	7	A	7	A	7	A
157	Industrial Blvd/Washington Blvd	14	B	30	C	13	B	30	C
158	Diamond Oaks Rd/Washington Blvd	11	B	18	B	11	B	18	B
159	Sawtell Rd/Washington Blvd	10	A	13	B	10	A	13	B
160	Junction Blvd/Washington Blvd	17	B	23	C	17	B	23	C
161	All American City Blvd/Washington	12	B	13	B	12	B	13	B
162	Cortina Cir/Fairway Dr	17	B	19	B	17	B	19	B
163	High School Road/Westpark Dr.	10	A	6	A	10	A	6	A
164	Fairway Dr/Target Dwy	10	A	12	B	10	A	12	B
165	Fairway Dr/Central Park Dr	11	B	20	B	11	B	19	B
166	Fairway Dr/Home Depot Dwy	10	A	28	C	10	A	28	C
167	Fairway Dr/Five Star Blvd	11	B	21	C	11	B	21	C
168	Highland Park/Stanford Ranch Rd	12	B	11	B	12	B	11	B
169	Fairway Dr/Stanford Ranch Rd	28	C	30	C	28	C	28	C
170	5 Star Blvd/Stanford Ranch Rd	20	B	43	D	20	B	40	D

Table 26:
Level of Service at Roseville Signalized Intersections – 2035 Cumulative Conditions (HCM Methodology)

Intersection		2035 Cumulative Conditions				2035 Cumulative Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
171	Hwy-65 NB Ramps/Stanford Ranch	5	A	19	B	5	A	19	B
172	Hwy-65 SB Ramps/Galleria Blvd	67	E	34	C	69	E	34	C
173	JC Penny/Galleria Circle	13	B	15	B	13	B	15	B
174	Antelope Creek Dr/Galleria Blvd	10	A	61	E	10	A	67	E
175	Berry St/Galleria Blvd	16	B	25	C	17	B	26	C
176	Wills Rd/Harding Blvd	18	B	19	B	18	B	19	B
177	Lead Hill Blvd/Harding Blvd	19	B	31	C	19	B	30	C
178	Estates Dr/Harding Blvd	19	B	25	C	19	B	26	C
179	Roseville Square/Harding Blvd	12	B	30	C	12	B	30	C
180	Stone Point Dr/N. Sunrise Ave	10	A	13	B	10	A	12	B
181	N. Sunrise Ave/Automall Dr	20	B	27	C	19	B	28	C
182	Lead Hill Blvd/N. Sunrise Ave	23	C	31	C	23	C	31	C
183	Sierra Gardens Dr/N. Sunrise Ave	15	B	22	C	15	B	22	C
184	Oak Ridge Dr/Sunrise Ave	6	A	8	A	6	A	7	A
185	Frances Dr/Sunrise Ave	5	A	6	A	5	A	6	A
186	Coloma Way/Sunrise Ave	18	B	18	B	18	B	18	B
187	Sun Tree Dr/Sunrise Ave	10	A	20	B	10	A	20	B
188	Kensington Dr/Sunrise Ave	8	A	26	C	8	A	26	C
189	Rocky Ridge Dr/Stone Point Dr	4	A	9	A	4	A	8	A
190	Lead Hill Blvd/Rocky Ridge Dr	18	B	25	C	18	B	25	C
191	Professional Dr/Rocky Ridge Dr	9	A	13	B	9	A	13	B
192	Meadowlark Way/Rocky Ridge Dr	3	A	7	A	3	A	7	A
193	McLaren Dr/Rocky Ridge Dr	8	A	7	A	8	A	7	A
194	Secret Ravine Pkwy/Sierra College	14	B	25	C	14	B	25	C
195	Miners Ravine Pkwy/Sierra College	12	B	13	B	12	B	13	B
196	Olympus Dr/Sierra College Blvd	23	C	26	C	23	C	26	C
197	Indigo Creek Apts Dwy/Sierra College	21	C	27	C	21	C	27	C
198	Old Auburn Rd/Sierra College Blvd	30	C	28	C	30	C	28	C
199	Olympus Dr/Europa St	8	A	6	A	8	A	6	A
200	Secret Ravine Pkwy/Scarborough Dr	14	B	13	B	14	B	13	B
201	Secret Ravine Pkwy/Alexandra Dr	9	A	9	A	9	A	9	A
202	Convention Center Dr/Gibson Dr	61	E	19	B	61	E	19	B
203	I-80 WB Ramps/Riverside Ave	17	B	86	F	17	B	90	F
204	Orlando Ave/Riverside Ave	33	C	73	E	32	C	70	E

Table 26:
Level of Service at Roseville Signalized Intersections – 2035 Cumulative Conditions (HCM Methodology)

Intersection		2035 Cumulative Conditions				2035 Cumulative Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
205	Junction Blvd/Stonecrest Dr	19	B	13	B	20	B	13	B
206	Junction Blvd/Park Regency Dr	24	C	17	B	25	C	17	B
207	Junction Blvd/Woodcreek Oaks Blvd	18	B	24	C	18	B	25	C
208	Junction Blvd/Country Club Dr	31	C	25	C	31	C	25	C
209	Junction Blvd/Revere Dr	4	A	5	A	4	A	5	A
210	Junction Blvd/Americana Dr	11	B	7	A	11	B	7	A
211	Junction Blvd/Sawtell Rd	9	A	10	B	9	A	10	B
212	PFE Rd/Hilltop Cir	12	B	14	B	12	B	14	B
213	Solaire Dr/Santucci Blvd	16	B	19	B	16	B	20	B
214	Federico Dr/Santucci Rd	24	C	22	C	23	C	22	C
215	Sierra Village Dr/Santucci Blvd	18	B	14	B	18	B	14	B
216	Hayden Pkwy./Holt Pkwy.	15	B	13	B	18	B	14	B
217	Alantown Dr/Industrial Ave	20	B	18	B	20	B	18	B
218	Freedom Way/Industrial Avenue	4	A	5	A	4	A	4	A
219	Pleasant Grove Blvd/La Sierra Drive	19	B	11	B	28	C	30	C
220	Westbrook Blvd/Road D	Does Not Exist				14	B	15	B
221	Road D/Road A	Does Not Exist				14	B	17	B
222	Westbrook Blvd/Road B	Does Not Exist				13	B	19	B
223	Road A/Road B	Does Not Exist				20	C	21	C
224	Westbrook Blvd/Road A	Does Not Exist				15	B	17	B
225	Secret Ravine Pkwy/Medical Plaza	17	B	15	B	17	B	15	B
226	High School Road/Hayden Pkwy	21	C	22	C	20	B	26	C
P1	Darling/Riverside (located in POD)	22	C	19	B	22	C	19	B
P2	Vernon/Douglas (located in POD)	24	C	48	D	24	C	49	D
P3	Vernon/Grant (located in POD)	6	A	7	A	6	A	7	A
P4	Vernon/Judah (located in POD)	5	A	9	A	5	A	9	A
P5	Vernon/Lincoln (located in POD)	12	B	30	C	12	B	31	C
P6	Main/Washington (located in POD)	23	C	37	D	23	C	37	D
P7	Oak/S Grant (located in POD)	6	A	11	B	7	A	12	B
P8	Oak/Lincoln (located in POD)	13	B	22	C	13	B	22	C

Notes:
1. Intersections located in Pedestrian Overlay District (POD) are exempt from the City's LOS policies.

Shaded cells represent significant impacts.
Source: Fehr & Peers, 2015.

Table 27 presents a summary of signalized intersection operations during the AM and PM peak hours under 2035 Cumulative No Project and Plus Project conditions.

Table 27:
City of Roseville Signalized Intersection Operations – 2035 Cumulative Conditions (HCM Methodology)

Level of Service	2035 Cumulative Conditions		2035 Cumulative Plus Project Conditions	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Total Intersections	221	221	226	226
LOS A-C	198 (89.5%)	175 (79.2%)	204 (90.2%)	180 (79.6%)
LOS D	18 (8%)	23 (11%)	17 (8%)	21 (9%)
LOS E	3 (1%)	16 (7%)	3 (1%)	18 (8%)
LOS F	2 (1%)	7 (3%)	2 (1%)	7 (3%)
Percent Operating at LOS D, E, or F	11.5%	20.8%	9.8%	20.4%

Notes:
1. Excludes the seven signalized intersections located in the City's Pedestrian Overlay District (POD). "Plus project" results include the five new signalized intersections within the Amoruso Plan.

Source: Fehr & Peers, 2015.

The proposed project would cause the overall percentage of intersections operating at LOS C or better during the AM peak hour to increase from 89.5 to 90.2 percent. The proposed project would cause the overall percentage of intersections operating at LOS C or better during the PM peak hour to increase from 79.2 to 79.6 percent.

Whereas the project caused a one percent reduction in City-wide intersections operating at LOS C or better during the PM peak hour under 2035 CIP conditions, the percentage of intersections operating at LOS C or better would actually improve very slightly with the addition of the project under 2035 Cumulative conditions. This is attributable to two factors. First, the 2035 Cumulative scenario includes the extension of Placer Parkway westerly to Santucci Boulevard, which provides additional roadway capacity adjacent to the project. Second, this scenario assumes partial build-out of Placer Ranch, which provides opportunities for shorter distance trips to/from the project.

ANALYSIS OF ADJACENT JURISDICTION FACILITIES

Table 28 displays the 2035 Cumulative AM and PM peak hour operations at study intersections outside of Roseville under No Project and Plus Project conditions. Refer to separately bound Appendix D for technical calculations.

Table 28:
Intersection Operations Outside of Roseville – 2035 Cumulative Conditions

Intersection	Jurisdiction	Control Type	2035 Cumulative No Project				2035 Cumulative With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS
Locust Rd/ Baseline Rd	Placer County	Signal	0.25	A	0.45	A	0.25	A	0.44	A
Watt Ave/PFE Rd	Placer County	Signal	0.71	C	0.72	C	0.72	C	0.74	C
Walerga Rd/PFE Rd	Placer County	Signal	1.06	F	0.93	E	1.06	F	0.95	E
Cook Riolo Rd/ PFE Rd	Placer County	AWSC	193	F	161	F	205	F	163	F
Fiddyment Rd/ Sunset Blvd W	Placer County	Signal	0.58	A	0.67	B	0.51	A	0.64	B
Fiddyment Rd/	Placer	Signal	0.84	D	0.94	E	0.83	D	0.93	E
Industrial Ave/ Athens Ave	Placer County	Signal	0.67	B	0.72	C	0.67	B	0.73	C
N Foothills Blvd/ Athens Ave	Placer County	TWSC	68 (352)	F (F)	2514 (ERROR)	F (F)	113 (281)	F (F)	2346 (6905)	F (F)
Cincinnati Ave/W Sunset Blvd	Placer County	Signal	1.22	F	1.19	F	1.25	F	1.20	F
Westbrook Blvd/W Sunset Blvd	Placer County	Signal	Does Not Exist				0.24	A	0.38	A
Pleasant Grove Rd N/Riego Rd	Sutter County	Signal	13	B	7	A	13	B	7	A
Pleasant Grove Rd S/Riego Rd	Sutter County	Signal	12	B	26	C	12	B	23	C

Table 28:
Intersection Operations Outside of Roseville – 2035 Cumulative Conditions

Intersection	Jurisdiction	Control Type	2035 Cumulative No Project				2035 Cumulative With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS
Watt Ave/Elverta Rd	Sacramento County	Signal	0.88	D	1.02	F	0.88	D	1.02	F
Walerga Rd/ Elverta Rd	Sacramento County	Signal	0.97	E	1.11	F	0.98	E	1.11	F
Watt Ave/ Antelope Rd	Sacramento County	Signal	1.04	F	1.10	F	1.04	F	1.09	F
Walerga Rd/ Antelope Rd	Sacramento County	Signal	0.71	C	0.83	D	0.71	C	0.84	D
Watt Ave/Elkhorn Blvd	Sacramento County	Signal	0.94	E	1.01	F	0.94	E	1.02	F
Walerga Rd/ Elkhorn Blvd	Sacramento County	Signal	0.75	C	0.98	E	0.75	C	0.99	E
Ferrari Ranch Rd/ Groveland Ln	Lincoln	Signal	24	C	34	C	24	C	34	C
Ferrari Ranch Rd/ Joiner Pkwy	Lincoln	Signal	35	C	35	C	35	C	34	C
Joiner Pkwy/ Twelve Bridges Dr	Lincoln	Signal	45	D	44	D	45	D	45	D
Sunset Blvd/SR65 NB Ramps	Caltrans	Signal	33	C	12	B	33	C	11	B
Sunset Blvd/SR65 SB Ramps	Caltrans	Signal	24	C	12	B	25	C	12	B

Notes:
1. At signalized intersections in Sacramento County and Placer County, V/C ratio reported based on Circular 212 method. At signalized intersections in Lincoln and on Caltrans facilities, average delay reported based on HCM method.
2. AWSC = All Way Stop Control. TWSC = Two-Way Stop Control.

Shaded cells represent significant impacts.
At two-way stop control intersections, delay/LOS for worst movement shown in parenthesis with overall delay/LOS not shown in parenthesis.
"ERROR" = extremely high volume inputs exceed software program's ability to produce a delay estimate.
Source: Fehr & Peers, 2015.

Although a number of locations would operate unacceptably, project traffic contributions to many of them would be modest. Similar to the 2035 CIP analysis results, the proposed project would exacerbate to a significant degree unacceptable operations at the unsignalized Cook Riolo Road/PFE Road and N. Foothills Boulevard/Athens Avenue intersections in Placer County.

Table 29 displays the number of lanes, ADT, v/c ratio, and LOS at study roadways located in Rocklin, Placer County, Sutter County, and Sacramento County under 2035 Cumulative No Project and Plus Project conditions.

Table 29:
Roadway Segment Operations Outside of Roseville – 2035 Cumulative Conditions

Segment	Jurisdiction	Number of Lanes	2035 Cumulative No Project			2035 Cumulative Plus Project		
			Average Daily Traffic (ADT)	V/C Ratio	LOS	Average Daily Traffic (ADT)	V/C Ratio	LOS
Baseline Road west of Watt Ave.	Placer County	6	35,800	0.66	B	35,600	0.66	B
Watt Avenue south of Baseline Road	Placer County	6	34,700	0.64	B	34,600	0.64	B
Sunset Boulevard West west of Fiddyment Road	Placer County	2	5,500	0.31	A	2,300	0.13	A
Sunset Blvd west of SR 65 (across UPRR)	Placer County	4	38,600	1.07	F	39,200	1.09	F
Sunset Blvd West east of Pleasant Grove Rd	Placer County	2	6,000	0.33	A	10,700	0.59	A
Athens Avenue east of Fiddyment Road	Placer County	2	17,400	0.97	E	18,200	1.01	F
Fiddyment Road from Athens Avenue to Sunset Blvd. W.	Placer County	4	35,000	0.97	E	35,300	0.98	E
Fiddyment Road from Sunset Blvd. W to Roseville City Limits	Placer County	4	37,900	1.05	F	34,600	0.96	E
Brewer Road north of Baseline Road	Placer County	2	300	0.02	A	300	0.02	A
Watt Avenue south of PFE Road	Placer County	4	44,600	1.24	F	44,800	1.24	F
Walerga Road south of Baseline Road	Placer County	4	38,000	1.06	F	38,200	1.06	F

Table 29:
Roadway Segment Operations Outside of Roseville – 2035 Cumulative Conditions

Segment	Jurisdiction	Number of Lanes	2035 Cumulative No Project			2035 Cumulative Plus Project		
			Average Daily Traffic (ADT)	V/C Ratio	LOS	Average Daily Traffic (ADT)	V/C Ratio	LOS
Watt Avenue south of Elverta Road	Sacramento County	4	35,600	0.99	E	35,700	0.99	E
Watt Avenue south of Antelope Road	Sacramento County	6	39,000	0.72	C	39,200	0.73	C
Watt Avenue south of Elkhorn Boulevard	Sacramento County	6	47,400	0.88	D	47,400	0.88	D
Walerga Road south of PFE Road	Sacramento County	2	44,100	2.45	F	44,300	2.46	F
Walerga Road south of Antelope Road	Sacramento County	4	32,800	0.91	E	33,000	0.92	E
Walerga Road south of Elkhorn Boulevard	Sacramento County	4	28,400	0.79	C	28,600	0.79	C
Pleasant Grove Rd north of Baseline Rd	Sutter County	2	8,600	0.48	A	9,500	0.53	A
Riego Road east of SR 70/99	Sutter County	6	22,400	0.41	A	22,300	0.41	A
Howsley Road east of SR 70/99	Sutter County	2	2,800	0.16	A	2,800	0.16	A
Sunset Boulevard east of SR 65	City of Rocklin	6	40,100	0.74	C	40,800	0.76	C
Blue Oaks Blvd east of Lonetree Blvd	City of Rocklin	4	16,000	0.44	A	15,900	0.44	A
Wildcat Blvd north of Ranch View Drive	City of Rocklin	4	36,300	1.01	F	36,400	1.01	F

Notes:
1. V/C Ratio = Volume-to-Capacity Ratio. LOS = Level of Service

Shaded cells represent significant impacts.

Source: Fehr & Peers, 2015.

The project would not cause significant impacts at any study roadway segments.

Table 30 displays AM and PM peak hour operations at study freeway facilities under 2035 Cumulative No Project and Plus Project conditions. Refer to separately bound Appendix D for technical calculations.

Table 30:
Freeway Level of Service – 2035 Cumulative Conditions

SR 65 Freeway Facility	Type	2035 Cumulative No Project Conditions				2035 Cumulative Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density	LOS	Density	LOS	Density	LOS	Density	LOS
Northbound State Route 65									
I-80 to Stanford Ranch Rd	Basic	42	E	40	E	42	E	40	E
Stanford Ranch Rd Off-Ramp	Diverge	39	E	39	E	39	E	39	E
Stanford Ranch Rd On-Ramp	Merge	36	E	36	E	35	E	36	E
Pleasant Grove Blvd Off-Ramp	Diverge	2	C	23	C	24	C	23	C
Pleasant Grove Blvd On to Blue Oaks Off Ramp	Weave	N/A	D	N/A	E	N/A	D	N/A	E
Blue Oaks Blvd Loop On-Ramp	Merge	26	C	25	C	26	C	25	C
Blue Oaks Blvd On to Sunset Off-Ramp	Basic	43	E	41	E	43	E	41	E
Sunset Blvd Off-Ramp	Diverge	-	F	-	F	-	F	-	F
Sunset Blvd Loop On Ramp	Merge	26	C	33	D	25	C	33	D
Sunset Blvd Slip On-Ramp to Placer Pkwy Off-Ramp	Weave	N/A	C	N/A	D	N/A	C	N/A	D
Whitney Ranch Pkwy Loop On-Ramp	Merge	29	D	-	F	30	D	-	F
Whitney Ranch Pkwy Slip On-Ramp	Merge	26	C	-	F	27	C	-	F
Whitney Ranch Pkwy Slip On-Ramp to Twelve Bridges Off-Ramp	Basic	30	D	-	F	30	D	-	F
Twelve Bridges Dr Off-Ramp	Diverge	35	D	-	F	35	D	-	F
Twelve Bridges Dr On to Lincoln Off-Ramp	Weave	N/A	C	N/A	F	N/A	C	N/A	F
Lincoln Blvd Off to Ferrari Ranch Rd	Basic	11	B	24	C	11	B	24	C
Ferrari Ranch Rd Off-Ramp	Basic	11	B	24	C	11	B	24	C

Table 30:
Freeway Level of Service – 2035 Cumulative Conditions

SR 65 Freeway Facility	Type	2035 Cumulative No Project Conditions				2035 Cumulative Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density	LOS	Density	LOS	Density	LOS	Density	LOS
Ferrari Ranch Rd On-Ramp	Merge	13	B	24	C	13	B	24	C
Ferrari Ranch Rd to Nelson Ln	Basic	11	B	22	C	11	B	22	C
Southbound State Route 65									
Nelson Ln to Ferrari Ranch Rd	Basic	20	C	15	B	20	C	15	B
Ferrari Ranch Rd Off-ramp	Diverge	25	C	19	B	25	C	19	B
Ferrari Ranch Rd Loop On Ramp	Basic	19	C	14	B	19	C	14	B
Ferrari Ranch Rd Direct On Ramp	Merge	26	C	15	B	26	C	15	B
Ferrari Ranch Rd to Lincoln Blvd	Basic	44	E	22	C	-	F	22	C
Lincoln Blvd On Ramp to Twelve Bridges Off	Weave	N/A	F	N/A	D	N/A	F	N/A	D
Twelve Bridges Dr Loop On Ramp	Merge	-	F	36	E	-	F	36	E
Twelve Bridges Dr to Placer Pwky	Basic	45	E	39	E	-	F	39	E
Placer Pwky Off-ramp	Diverge	-	F	28	D	-	F	28	D
Placer Pkwy Loop On-Ramp	Merge	38	E	33	D	38	E	33	D
Placer Pkwy On-ramp to Sunset Blvd Off-Ramp	Weave[1]	23	C	N/A	D	23	C	N/A	D
Sunset Blvd Loop On Ramp	Merge	36	E	34	D	36	E	34	D
Sunset Blvd Direct On-Ramp	Merge	-	F	31	D	-	F	31	D
Sunset Blvd On-Ramp to Blue Oaks Blvd Off-Ramp	Basic	-	F	41	E	-	F	41	E
Blue Oaks Blvd Off-Ramp	Diverge	30	D	29	D	31	D	29	D
Blue Oaks Blvd Loop On-Ramp	Merge	24	C	23	C	24	C	23	C
Blue Oaks Blvd On to Pleasant Grove Blvd Off	Weave	N/A	E	N/A	F	N/A	E	N/A	F
Pleasant Grove Blvd Loop On-Ramp	Merge	28	D	30	D	29	D	30	D
Pleasant Grove Blvd Slip On-Ramp	Merge	35	D	36	E	36	E	36	E
Galleria Blvd Off-Ramp	Diverge	37	E	38	E	37	E	38	E
Galleria Blvd On-Ramp	Merge	31	D	-	F	31	D	37	E

Table 30:
Freeway Level of Service – 2035 Cumulative Conditions

SR 65 Freeway Facility	Type	2035 Cumulative No Project Conditions				2035 Cumulative Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density	LOS	Density	LOS	Density	LOS	Density	LOS
Galleria Blvd to I-80	Basic	32	D	43	E	33	D	42	E

Notes:
1. This segment is analyzed as a basic segment in the AM peak hour because the calculation falls out of the realm of a weave segment.
2. 'N/A' = Not applicable because density not calculated for weave segments based on Leisch method.
3. '-' = Density not reported for facilities operating at LOS F.

Shaded and bolded cells represent significant impacts.
Source: Fehr & Peers, 2015.

The project would cause the southbound segments of SR 65 from Ferrari Ranch Road to Lincoln Boulevard, and from Twelve Bridges Drive to Placer Parkway to worsen from LOS E to F during the AM peak hour. These are considered significant impacts. The project would add modest (40 vehicles per hour or less) levels of traffic to certain facilities that are projected to operate at an unacceptable LOS F. Since these volumes are less than the significance threshold, these impacts are not significant. There are no PM peak hour impacts.

7. IMPACTS AND MITIGATION MEASURES

This chapter presents project-specific and cumulatively significant traffic impacts of the proposed project. For each impact, mitigation measures are recommended to lessen their significance.

EXISTING PLUS PROJECT CONDITIONS

The project would result in significant impacts to various intersections, roadways, and freeway facilities. Specific impacts are described below, followed by recommended mitigation measures.

Impact TR-1 **The project would cause signalized intersections in the City of Roseville to be degraded to a significant degree under existing conditions. This is considered a significant impact.**

The project would cause the following significant intersection degradations during the AM and PM peak hours. This is considered a ***significant*** impact.

AM Peak Hour

- Baseline Road/Fiddyment Road (LOS C to D)
- Cirby Way/Riverside Avenue (LOS C to D)
- Baseline Road/Foothills Boulevard (LOS C to D)
- Baseline Road/Woodcreek Oaks Boulevard (LOS C to D)

PM Peak Hour

- Blue Oaks Boulevard/Foothills Boulevard (LOS C to D)
- Cirby Way/Vernon Street (LOS C to D)
- Junction Boulevard/Foothills Boulevard (LOS C to D)
- Antelope Creek Boulevard/Galleria Boulevard (LOS C to D)
- Baseline Road/Fiddyment Road (LOS D to E)
- Roseville Parkway/Galleria Boulevard (LOS D to E)

Mitigation Measures: The following mitigation measures are recommended to restore operations to an acceptable level at each intersection (see separately bound Appendix E).

MM TR-1a: **Modify the Baseline Road/Fiddyment Road intersection as follows:**

- **Add a second eastbound left-turn lane.**

This improvement would restore operations to LOS C during the AM and PM peak hours. This improvement is included in the City's CIP and is considered feasible. The project's payment of the applicable Traffic Mitigation Fee (TMF) constitutes a fair share payment toward this improvement. It would restore the impact to a **less-than-significant** level.

MM TR-1b: **Modify the Cirby Way/Riverside Avenue intersection as follows:**

- **Add a third eastbound through lane.**

This improvement would restore operations to LOS C during the AM peak hour. This improvement is included in the City's CIP and is considered feasible. The project's payment of the applicable Traffic Mitigation Fee (TMF) constitutes a fair share payment toward this improvement. It would restore the impact to a **less-than-significant** level.

MM TR-1c: **Modify the Baseline Road/Foothills Boulevard intersection as follows:**

- **Add a third northbound through lane.**

This improvement would restore operations to LOS C during the AM peak hour. This improvement is included in the City's CIP and is considered feasible. The project's payment of the applicable Traffic Mitigation Fee (TMF) constitutes a fair share payment toward this improvement. It would restore the impact to a **less-than-significant** level.

MM TR-1d: **Modify the Baseline Road/Woodcreek Oaks Blvd. intersection as follows:**

- **Add a second eastbound through lane.**

This improvement would restore operations to LOS C during the AM peak hour. This improvement is included in the City's CIP and is considered feasible. The project's payment of the applicable Traffic Mitigation Fee (TMF) constitutes a fair share payment toward this improvement. It would restore the impact to a **less-than-significant** level.

MM TR-1e: **Modify the Blue Oaks Boulevard/Foothills Boulevard intersection as follows:**

- **Add a third northbound left-turn lane and a third southbound through lane.**

This improvement would restore operations to LOS C during the PM peak hour. This improvement is included in the City's CIP and is considered feasible. The project's payment of the applicable Traffic Mitigation Fee (TMF) constitutes a fair share payment toward this improvement. It would restore the impact to a **less-than-significant** level.

MM TR-1f: **Modify the Cirby Way/Vernon Street intersection as follows:**

- **Add a second southbound left-turn lane.**

This improvement would restore operations to LOS C during the PM peak hour. This improvement is included in the City's CIP and is considered feasible. The project's payment of the applicable Traffic Mitigation Fee (TMF) constitutes a fair share payment toward this improvement. It would restore the impact to a **less-than-significant** level.

MM TR-1g: **Modify the Foothills Boulevard/Junction Boulevard intersection as follows:**

- **Add a second eastbound left-turn lane.**

This improvement would restore operations to LOS C during the PM peak hour. This improvement is included in the City's CIP and is considered feasible. The project's payment of the applicable Traffic Mitigation Fee (TMF) constitutes a fair share payment toward this improvement. It would restore the impact to a **less-than-significant** level.

MM TR-1h: **No feasible mitigation measures are available or necessary at the Galleria Boulevard/Antelope Creek Drive intersection.**

This intersection is already constructed to its ultimate planned lane configurations. Operations are projected to worsen to LOS E under 2035 CIP conditions during the PM peak hour. Accordingly, by virtue of the City Council adopting an exception to the LOS C standard for this intersection, this impact is considered **less-than-significant** and requires no mitigation.

MM TR-1i: **Modify the Roseville Parkway/Galleria Boulevard intersection as follows:**

- **Add a fourth westbound through lane.**

This improvement would restore operations to match the existing LOS D condition during the PM peak hour. This improvement is included in the City's CIP and is considered feasible. The project's payment of the applicable Traffic Mitigation Fee (TMF) constitutes a fair share payment toward this improvement. It would restore the impact to a **less-than-significant** level.

Impact TR-2 **The project would cause study intersections outside of the City of Roseville to be degraded to a significant degree under existing conditions. This is considered a significant impact.**

The project would cause the following significant intersection degradations during the AM and PM peak hours. This is considered a ***significant*** impact.

The proposed project would cause the following significant LOS degradations:

AM Peak Hour

- Watt Avenue/PFE Road (LOS E to F)
- Walerga Avenue/PFE Road (LOS D to E)
- Cook-Riolo Road/PFE Road (LOS B to D)
- Fiddyment Road/Sunset Blvd. West (LOS B to F)
- Pleasant Grove Road S / Riego Road (LOS F operations exacerbated)

PM Peak Hour

- Walerga Avenue/PFE Road (LOS C to D)
- Fiddyment Road/Sunset Blvd. West (LOS C to F)
- Fiddyment Road/Athens Avenue (LOS B to E)
- Pleasant Grove Road N / Riego Road (LOS D to F)

Mitigation Measures: The following mitigation measures are recommended to restore operations to an acceptable level at each intersection (see Appendix E):

Impacts in Placer County

MM TR-2a: **The project applicant shall pay their fair share cost of installing a traffic signal at the Watt Avenue/PFE Road intersection.**

Installation of a traffic signal at this intersection would restore operations to LOS B during the AM peak hour and LOS A during the PM peak hour. This improvement is included in the Placer County Countywide Capital Improvement Program (December 2014). This mitigation is considered feasible because it is fully funded through an adopted fee program. Since this would restore operations to an acceptable level, it would mitigate the associated intersection impact to **less than significant** level.

MM TR-2b: **The project applicant shall pay their fair share cost of widening Walerga Road to four lanes through the Walerga Road/PFE Road intersection.**

Widening of this intersection to consist of two northbound and two southbound travel lanes would restore operations to LOS C during the AM peak hour and LOS B during the PM peak hour. The Placer County Countywide Capital Improvement Program (December 2014) includes funding for right-of-way acquisition for the widening of Walerga Road to six lanes from Baseline Road to the Sacramento County line. However, funding for construction is not provided. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution. This mitigation would require ROW acquisition and approvals from other agencies. Furthermore, since this improvement is not included and fully funded in a known fee program, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

MM TR-2c: **(The project applicant shall pay their fair share cost of any capacity-enhancing improvements identified by Placer County at the Cook-Riolo Road/PFE Road intersection).**

Placer County staff has indicated that the Dry Creek community does not desire a traffic signal at this location. No other planned improvements have been identified as part of the Dry Creek Community Plan. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution toward any capacity-enhancing improvements identified by the County for this intersection. This mitigation would require approvals from other agencies. Furthermore, since the type of improvement and it's funding is not known, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

MM TR-2d: **The project applicant shall pay their fair share cost of installing a traffic signal at the Fiddyment Road/Sunset Boulevard West intersection.**

Installation of a traffic signal at this intersection would restore operations to LOS A during the AM and PM peak hours. This improvement is not included in any known fee program. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution. This mitigation would require approvals from other agencies. Furthermore, since this improvement is not included in a known fee program, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

MM TR-2e: **The project applicant shall pay their fair share cost of installing a traffic signal at the Fiddyment Road/Athens Avenue intersection.**

Installation of a traffic signal at this intersection would restore operations to LOS A during the AM peak hour and LOS B during the PM peak hour. This improvement is not included in any known fee program. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution. This mitigation would require approvals from other agencies. Furthermore, since this improvement is not included in a known fee program, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

Impacts in Sutter County

***MM TR-2f*:** **The project applicant shall pay their fair share cost of widening Riego Road to four lanes through the Pleasant Grove Road N/Riego Rd intersection.**

Widening of this intersection to consist of two eastbound and two westbound travel lanes would restore operations to LOS C during the AM and PM peak hours. This improvement is not included in any known fee program. However, it is noted that the Sutter Pointe Specific Plan conditions of approval require that project to widen this segment of Riego Road to six lanes. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Sutter County to identify the fair share funding contribution. This mitigation would require ROW acquisition and approvals from other agencies. Furthermore, since this improvement is not included in a known fee program, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

***MM TR-2g*:** **The project applicant shall pay their fair share cost of widening Riego Road to four lanes through the Pleasant Grove Road S/Riego Road intersection.**

Widening of this intersection to consist of two eastbound and two westbound travel lanes would restore operations to LOS C during the AM and PM peak hours. This improvement is not included in any known fee program. However, it is noted that the Sutter Pointe Specific Plan conditions of approval require that project to widen this segment of Riego Road to six lanes. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Sutter County to identify the fair share funding contribution. This mitigation would require ROW acquisition and approvals from other agencies. Furthermore, since this improvement is not included in a known fee program, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

Impacts in Sacramento County, Rocklin, and Lincoln

The project would not cause any significant impacts in these jurisdictions. Therefore, no mitigations are required.

The City of Roseville shall negotiate in good faith to enter into a fair agreement with Placer County, Sutter County, Sacramento County and Caltrans regarding Amoruso Ranch fair share mitigation. In reaching an accommodation with these agencies and in order to better ensure an effective sub-regional approach to mitigating transportation-related impacts, the City may choose to include within the same agreements or Joint Powers Authority additional public agencies with whom it must work to mitigate transportation-related impacts. As the City strives to achieve agreement(s) with one or more of these other agencies, the City shall insist that "fair share" fee obligations be reciprocal, in the sense that the other local agencies, in accepting

fair share contributions from the ARSP developers, must agree to require new development occurring in their own jurisdictions to make fair share contributions towards mitigating the significant effects of such development on the City's transportation network. Any such arrangement(s), with one or more agencies, shall account for existing inter-agency fee programs in order to avoid requiring redundant mitigation or fee payments exceeding fair share mitigation levels.

The City intends that its arrangement(s) with other agencies shall permit the participating agencies flexibility in providing cross-jurisdictional credits and reimbursements consistent with the general "fair share" mitigation standard, and require an updated model run incorporating the best available information in order to obtain the most accurate, up-to-date impact assessment feasible and to generate the most accurate, up-to-date estimates of regional fair share contributions. These arrangements, moreover, should also include provisions that allow for periodic updates to the traffic modeling on which fair share payment calculations depend in order to account for (i) newly approved projects cumulatively contributing to transportation-related impacts and that therefore should contribute to the funding of necessary improvements (e.g., the Curry Creek Community Plan in Placer County), (ii) additional physical improvements necessitated in whole or in part by newly approved projects, (iii) changing cost calculations for the construction of needed improvements based on changes in the costs of materials, labor, and other inputs.

Impact TR-3 The project would cause study roadways outside of the City of Roseville to be degraded to a significant degree under existing conditions. This is considered a significant impact.

The project would cause the following significant roadway segment degradations. This is considered a ***significant*** impact.

- Walerga Road between Baseline Road and PFE Road (operations degrade from LOS E to F)
- Walerga Road between PFE Road and Singing Tree Way (LOS F operations exacerbated by a 0.07 v/c ratio increase)

Mitigation Measures: The following mitigation measures are recommended to restore operations to an acceptable level:

Impacts in Placer County

MM TR-3a: **The project applicant shall pay their fair share cost of widening Walerga Road to four lanes between Baseline Road and PFE Road in Placer County.**

Widening of this roadway to include two continuous northbound and southbound travel lanes would restore operations to LOS A. The Placer County Countywide Traffic Fee Program

(December 2014) includes funding for right-of-way acquisition for the widening of Walerga Road to six lanes from Baseline Road to the Sacramento County line. However, funding for construction is not provided. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution. This mitigation would require ROW acquisition and approvals from other agencies. Furthermore, since this improvement is not included and fully funded in a known fee program, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

Impacts in Sacramento County

MM TR-3b: **The project applicant shall pay their fair share cost of widening Walerga Road to four lanes between PFE Road and Singing Tree Way in Sacramento County.**

Widening of this roadway to include two northbound and southbound travel lanes would restore operations to LOS A. The Sacramento County General Plan Circulation Element (amended 2011) shows this segment of Walerga Road as a planned four-lane road. However, the *Final Report for the Sacramento County Development Transportation Impact Fee Program* (2010) does not include this widening in the fee program.

These mitigation measures require the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Sacramento County to identify the fair share funding contribution. It is recognized that the remaining fair share cost required for construction has not been identified at this time. It is also recognized that these improvements are located outside of the City of Roseville. Consequently, the City of Roseville cannot ensure that they would be constructed. Accordingly, these impacts are considered **significant and unavoidable**.

Impacts in Sutter County, Rocklin, and Lincoln

The project would not cause any significant impacts in these jurisdictions. Therefore, no mitigations are required.

Impact TR-4 The project would cause freeway facilities maintained by Caltrans to be degraded to a significant degree under existing conditions. This is considered a significant impact.

The project would cause the following significant freeway facility degradations. This is considered a ***significant*** impact.

AM Peak Hour

- SB SR 65 weave from Blue Oaks Boulevard to Pleasant Grove Boulevard (increase of 344 AM peak hour trips)
- SB SR 65 diagonal on-ramp at Pleasant Grove Boulevard (increase of 330 AM peak hour trips)
- SB SR 65 off-ramp at Galleria Boulevard (increase of 426 AM peak hour trips)

PM Peak Hour

- NB SR 65 from I-80 to Galleria Boulevard (increase of 156 PM peak hour trips)
- NB SR 65 off-ramp at Galleria Boulevard (increase of 170 PM peak hour trips)
- NB SR 65 on-ramp at Galleria Boulevard (increase of 147 PM peak hour trips)
- NB SR 65 off-ramp at Pleasant Grove Boulevard (increase of 155 PM peak hour trips)
- SB SR 65 weave from Blue Oaks Boulevard to Pleasant Grove Boulevard (increase of 73 PM peak hour trips)

Based on current operations and the level of project-added traffic, the proposed project would not cause operations at a freeway off-ramp to queue back onto the SR 65 mainline.

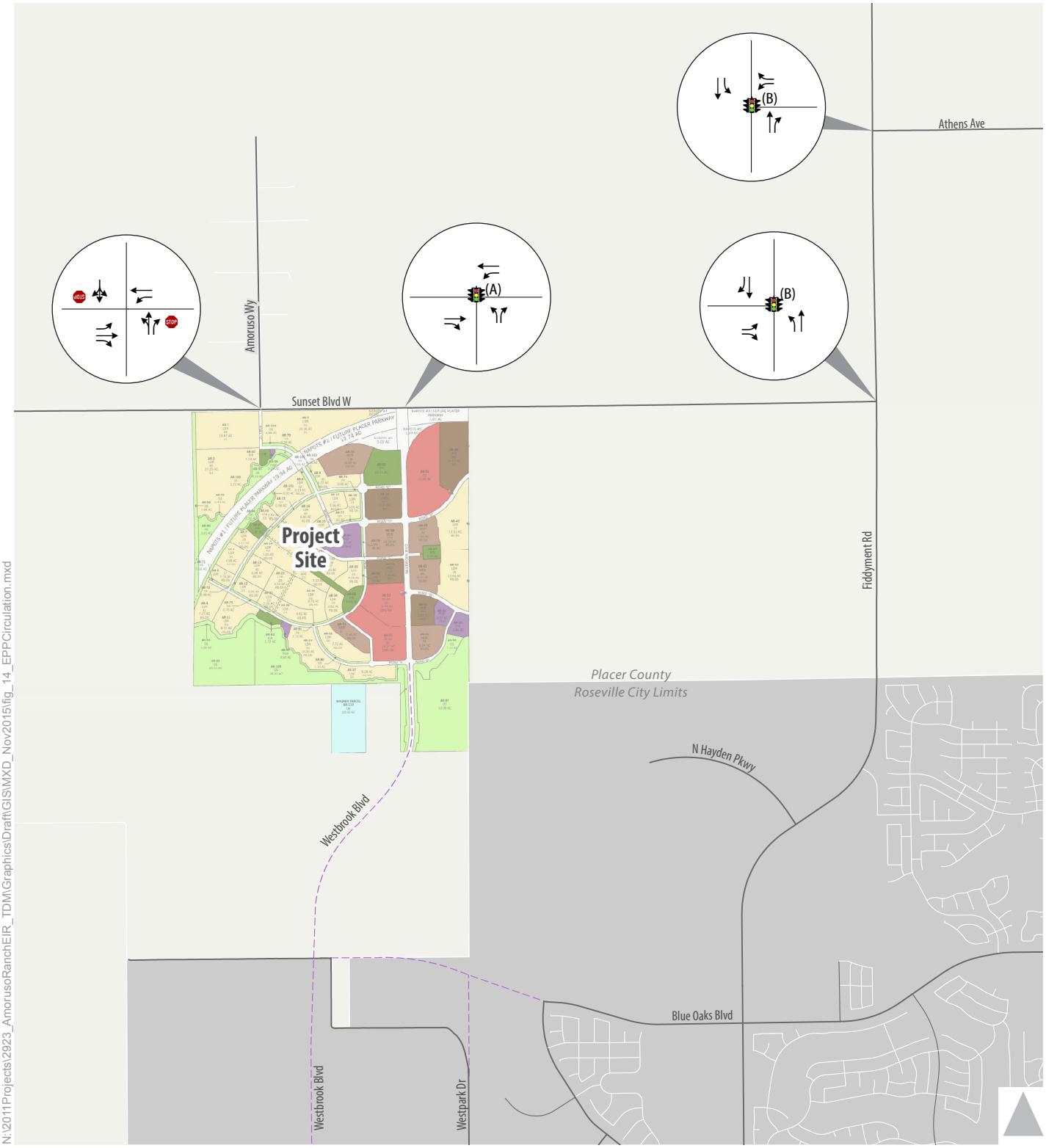
Mitigation Measure: The following mitigation measure is recommended to restore operations to an acceptable level at each intersection:

MM TR-4: **The project applicant shall pay the the Highway 65 JPA Fee and the South Placer Regional Transportation Agency (SPRTA) fee.**

The Highway 65 JPA Fee assesses fees on new development for the cost of interchange improvements along SR 65. The SPRTA fee provides funding for regional projects such as the State Route 65 Widening and Placer Parkway. It is also providing funding to help construct improvements at the SR 65 NB ramps at Galleria Boulevard.

This impact is considered ***significant and unavoidable*** because the remaining funding necessary to construct the SR 65 Widening Project and I-80/SR 65 Interchange Improvements has not been identified. No improvements within the SR 65 study area are included in the Tier 1 project list in SACOG's MTP/SCS. In addition, the Placer County Transportation Planning Agency's (PCTPA) website (http://pctpa.net/) indicates that funding is currently being sought for the SR 65 Widening project.

Figure 14 illustrates the planned circulation system in the project vicinity under existing plus project conditions. This figure shows the planned southerly extension of Westbrook Boulevard to Blue Oaks Boulevard and the two street connections to Sunset Boulevard West. It also shows the recommended (as part of existing plus project mitigations) traffic controls and lane configurations at study intersections along Sunset Boulevard West and Fiddyment Road.



(A) Applicant Responsible

(B) Fair Share Responsibility

Planned Roadway Extension

Stop Sign

Signal

Recommended Lane

Note: this exhibit depicts the planned circulation system in the project vicinity. Refer to report for mitigations beyond the limits of this exhibit.

Figure 14

Existing Plus Project Circulation System

2035 CIP PLUS PROJECT CONDITIONS

The project would result in cumulatively significant impacts to various intersections, roadways, and freeway facilities. Specific impacts are described below, followed by recommended mitigation measures.

Impact TR-5 **The project would cause signalized intersections in the City of Roseville to be degraded to a significant degree under 2035 CIP conditions. This is considered a significant impact.**

The project would cause the following significant intersection degradations during the AM and PM peak hours. This is considered a ***significant*** impact.

AM Peak Hour

- Woodcreek Oaks Boulevard/McAnally Drive (LOS C to D)
- Blue Oaks Boulevard/Westbrook Boulevard (LOS C to E)

PM Peak Hour

- Roseville Parkway/Gibson Drive (LOS D to E)
- Blue Oaks Boulevard/Westbrook Boulevard (LOS C to F)
- Baseline Road/Santucci Boulevard (LOS C to D)
- Westbrook Boulevard/Vista Grande Avenue (LOS C to D)
- Baseline Road/Westbrook Boulevard (LOS C to D)

Mitigation Measures: The following mitigation measures are recommended to restore operations to an acceptable level at each intersection (see separately bound Appendix E):

MM TR-5a: **The City of Roseville shall modify its CIP to include the following improvements at the Blue Oaks Boulevard/Westbrook Boulevard intersection:**

- **Provide two left-turn lanes, three through lanes, and one right-turn lane on all approaches.**
- **Operate the westbound right-turn movement with an overlap phase.**

This mitigation consists of adding a second left-turn lane on the northbound, southbound, and eastbound approaches to this intersection. Since this intersection is not yet constructed and the westbound approach is already planned to have dual westbound left-turns (meaning width should be available for an eastbound left-turn lane), it is believed that adequate right-of-way would be available to construct this improvement. These improvements would restore operations to LOS C during the AM and PM peak hours. The project's payment of the applicable Traffic Mitigation Fee (TMF) constitutes a fair share payment toward this improvement. It would restore the impact to a **less-than-significant** level.

MM TR-5b: **The City of Roseville shall modify its CIP to include the following modifications to the Westbrook Boulevard/Vista Grande Avenue intersection:**

- **Reconfigure the planned westbound approach (currently proposed to consist of one left-turn, two through lanes, and one right-turn lane) to consist two left-turns, one through lane, and one right-turn lane.**

This mitigation would not require any right-of-way acquisition, and would improve operations to LOS B in the AM peak hour and LOS C in the PM peak hour. The project's payment of the applicable Traffic Mitigation Fee (TMF) constitutes a fair share payment toward this improvement. It would restore the impact to a **less-than-significant** level.

No feasible mitigations are available for the remaining impacted intersections. Each location is discussed below:

- *Woodcreek Oaks Boulevard/McAnally Drive* – The City's CIP includes an additional lane on the westbound approach. Further widening is not possible. Although operations degrade to LOS D during the AM peak hour for the Year 2035 CIP Plus Project scenario, operations are at LOS C under the 2035 Cumulative Plus Project scenario (due primarily to traffic shifts caused by Placer Parkway).
- *Roseville Parkway/Gibson Drive* – The project would cause a three-second increase in delay during the PM peak hour, which worsens operations from LOS D to E. The intersection is built to its ultimate. Signal timing adjustments would not restore operations back to LOS D. However, operations are restored to LOS D under the 2035 Cumulative Plus Project scenario.
- *Baseline Road/Santucci Boulevard and Baseline Road/Westbrook Boulevard* – The project would cause a two- or three-second increase in delay at each intersection during the PM peak hour, which worsens operations from LOS C to D. Both intersections are planned to include two left-turn lanes, three through lanes, and one right-turn lane on all approaches. Further widening is not possible. Signal timing adjustments would not restore operations back to LOS C. Operations are restored to LOS C at each intersection under the 2035 Cumulative Plus Project scenario (due primarily to traffic shifts caused by Placer Parkway).

No feasible mitigation measures are available for the significant impacts at the above four intersections, whose impacts would are considered **significant and unavoidable**.

Thus, the list of LOS C exceptions for 2035 CIP Plus Amoruso Specific Plan conditions would need to include the following additional intersections:

AM Peak Hour	PM Peak Hour
Woodcreek Oaks Blvd./McAnally Drive (LOS C to D)	Roseville Parkway/Gibson Drive (LOS D to E)
	Baseline Road/Santucci Boulevard (LOS C to D)
	Baseline Road/Westbrook Boulevard (LOS C to D)

Impact TR-6 The project would cause study intersections outside of the City of Roseville to be degraded to a significant degree under 2035 CIP conditions. This is considered a significant impact.

The project would cause the following significant intersection degradations during the AM and PM peak hours. This is considered a ***significant*** impact.

The project would cause the following cumulatively significant impacts:

AM Peak Hour

- Cook Riolo Road/PFE Road (LOS F exacerbated)
- N. Foothills Boulevard/Athens Avenue (LOS F exacerbated)

PM Peak Hour

- Cook Riolo Road/PFE Road (LOS F exacerbated)
- Sunset Boulevard West/Fiddyment Road (LOS A to E)
- Fiddyment Road/Athens Avenue (LOS E to F)
- N. Foothills Boulevard/Athens Avenue (LOS F exacerbated)

Mitigation Measures: The following mitigation measures are recommended to restore operations to an acceptable level at each intersection (see separately bound Appendix E):

Impacts in Placer County

MM TR-6a: **Implement Mitigation Measure TR-2c (The project applicant shall pay their fair share cost of any capacity-enhancing improvements identified by Placer County at the Cook-Riolo Road/PFE Road intersection).**

Placer County staff has indicated that the Dry Creek community does not desire a traffic signal at this location. No other planned improvements have been identified as part of the Dry Creek Community Plan. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share

funding contribution toward any capacity-enhancing improvements identified by the County for this intersection. This mitigation would require approvals from other agencies. Furthermore, since the type of improvement and it's funding is not known, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

MM TR-6b: **The project applicant shall pay their fair share cost of installing a traffic signal at the N. Foothills Boulevard/Athens Avenue intersection.**

Installation of a traffic signal at this intersection would restore operations to LOS C during the AM peak hour and LOS D during the PM peak hour under 2035 CIP Plus Project conditions. This improvement is not included in any known fee program. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution. This mitigation would require approvals from other agencies. Furthermore, since this improvement is not included in a known fee program, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

MM TR-6c: **The project applicant shall pay their fair share cost of adding a second eastbound left-turn lane to the Sunset Boulevard West/Fiddyment Road intersection.**

This improvement would restore operations to LOS C during the PM peak hour under 2035 CIP Plus Project conditions. This improvement is not included in any known fee program. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution. This mitigation would require approvals from other agencies. Furthermore, since this improvement is not included in a known fee program, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

MM TR-6d: **The project applicant shall pay their fair share cost of adding a second westbound left-turn lane to the Athens Avenue/Fiddyment Road intersection.**

This improvement would restore operations to LOS C during the AM peak hour and LOS E during the PM peak hour under 2035 CIP Plus Project conditions. This improvement is not included in any known fee program. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution. This mitigation would require approvals from other agencies. Furthermore, since this improvement is not included in a known fee program, there is no

assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

Impacts in Sutter County, Sacramento County, Rocklin, and Lincoln

The project would not cause any cumulatively significant impacts in these jurisdictions. Therefore, no mitigations are required.

Impact TR-7 The project would cause study roadways outside of the City of Roseville to be degraded to a significant degree under 2035 CIP conditions. This is considered a significant impact.

The project would cause the following significant roadway segment degradations. This is considered a ***significant*** impact.

- Sunset Boulevard West between Fiddyment Road and Westbrook Boulevard (operations degrade from LOS A to E)
- Fiddyment Road between Athens Avenue and Sunset Boulevard West (LOS E to F operations and conditions exacerbated by a 0.13 v/c ratio increase)

Mitigation Measures: The following mitigation measures are recommended to restore operations to an acceptable level:

Impacts in Placer County

MM TR-7a: **The project applicant shall pay their fair share cost of improvements to Sunset Boulevard West between Fiddyment Road and Westbrook Boulevard.**

Although widening of this roadway to include four lanes would restore operations to LOS A, only two travel lanes are necessary (based on the travel demand) upon construction of Placer Parkway. Therefore, Placer County may request that the fair share contribution cover roadway widening for dedicated turn lanes and/or shoulders, capacity widening, or a contribution toward the construction of Placer Parkway. Improvements to Sunset Boulevard West are not included in any known fee program. This improvement is not included in any known fee program. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution. This mitigation would require approvals from other agencies. Furthermore, since this improvement is not included in a known fee program, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

MM TR-7b: **The project applicant shall pay their fair share cost of widening Fiddyment Road Road to six lanes between Athens Avenue and Sunset Boulevard West.**

Widening of this roadway to six lanes would restore operations to LOS C. This widening is not included in any known fee program. These mitigation measures require the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution. It is recognized that the remaining fair share cost required for construction has not been identified at this time. It is also recognized that these improvements are located outside of the City of Roseville. Consequently, the City of Roseville cannot ensure that they would be constructed. Accordingly, these impacts are considered **significant and unavoidable**.

Impacts in Sutter County, Sacramento County, Rocklin, and Lincoln

The project would not cause any cumulatively significant impacts in these jurisdictions. Therefore, no mitigations are required.

Impacts Found to Be Less Than Significant

Chapter 5 identified cumulatively significant project impacts at intersections and roadways both within and outside of Roseville. That chapter also included analyses of freeway facilities. The following describes the findings of those evaluations.

- Freeway Facilities – The project would not worsen any freeway segments from acceptable to unacceptable. Additionally, the project would not cause any off-ramp vehicle queues to spill back onto the freeway mainline. Furthermore, the project would add modest (20 vehicles per hour or less) levels of traffic to certain facilities that are projected to operate at an unacceptable LOS F. Since these volumes do not exceed the impact significance threshold, project impacts on freeway facilities would be **less than significant** under 2035 CIP conditions.

2035 CUMULATIVE PLUS PROJECT CONDITIONS

The project would result in cumulatively significant impacts to various intersections, roadways, and freeway facilities. Specific impacts are described below, followed by recommended mitigation measures.

Impact TR-8 **The project would cause signalized intersections in the City of Roseville to be degraded to a significant degree under 2035 Cumulative conditions. This is considered a significant impact.**

The project would cause the following significant intersection degradation during the PM peak hour. This is considered a ***significant*** impact.

AM Peak Hour

No impacts.

PM Peak Hour

- Blue Oaks Boulevard/Collector C (LOS C to D)
- Blue Oaks Boulevard/Washington Boulevard/SR 65 SB Ramps (LOS D to E)
- Eureka Road/Taylor Road/I-80 EB Ramps (LOS D to E)

Mitigation Measures: No feasible mitigations are available for these three impacted intersections. Each location is discussed below:

- Blue Oaks Boulevard/Collector C – This future intersection would be situated 1,175 feet west of the Foothills Boulevard/Blue Oaks Boulevard intersection. The project would add approximately 300 eastbound through vehicles during the PM peak hour. The traffic simulation shows that queued vehicles on the eastbound Blue Oaks Boulevard approach would spill back through this intersection, thereby causing the LOS D condition. Due to the level of project-added traffic and the degree of delay increase (32 to 55 seconds), it is unlikely that signal timing modifications along the corridor could restore operations to LOS C. Further, it is noted that under 2035 CIP conditions, this intersection is projected to operate at LOS D, both without and with the project. No additional widening beyond what was assumed is possible.

- *Blue Oaks Boulevard/Washington Boulevard/SR 65 SB Ramps* – within the last two years, it was modified to add additional capacity. The 2035 Cumulative analysis already assumes additional planned widening. No additional widening beyond what was assumed is possible.

- *Eureka Road/Taylor Road/I-80 EB ramps* – within the last three years, it was rebuilt to add additional capacity. Beyond what is currently constructed, only a second westbound right-turn lane is planned on Taylor Road in the future. This lane is assumed in place for the 2035 Cumulative analysis. No additional widening is possible.

No feasible mitigation measures are available for the significant impacts at the above three intersections, whose impacts would are considered **significant and unavoidable**.

Impact TR-9 **The project would cause study intersections outside of the City of Roseville to be degraded to a significant degree under 2035 Cumulative conditions. This is considered a significant impact.**

The project would cause the following significant intersection degradation. This is considered a ***significant*** impact.

AM Peak Hour

- Cook-Riolo Road/PFE Road (LOS F operations exacerbated)
- N. Foothills Boulevard/Athens Avenue (LOS F operations exacerbated)

PM Peak Hour

No impacts.

Mitigation Measures: The following mitigation measures are recommended to restore operations to an acceptable level at each intersection (see separately bound Appendix E):

Impacts in Placer County

MM TR-6a: **Implement Mitigation Measure TR-2c (The project applicant shall pay their fair share cost of any capacity-enhancing improvements identified by Placer County at the Cook-Riolo Road/PFE Road intersection).**

Placer County staff has indicated that the Dry Creek community does not desire a traffic signal at this location. No other planned improvements have been identified as part of the Dry Creek Community Plan. This mitigation requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution toward any capacity-enhancing improvements identified by the County for this intersection. This mitigation would require approvals from other agencies. Furthermore, since the type of improvement and it's funding is not known, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

MM TR-9b: **Implement Mitigation Measure TR-6b (The project applicant shall pay their fair share cost of installing a traffic signal at the N. Foothills Boulevard/Athens Avenue intersection.**

Installation of a traffic signal at this intersection would restore operations to LOS A during the AM peak hour and LOS D during the PM peak hour under 2035 Cumulative Plus Project conditions. This improvement is not included in any known fee program. This mitigation

requires the City of Roseville, on behalf of the project applicant, to negotiate in good faith with Placer County to identify the fair share funding contribution. This mitigation would require approvals from other agencies. Furthermore, since this improvement is not included in a known fee program, there is no assurance that the remaining funds necessary for construction will be collected. Therefore, the intersection impacts associated with this mitigation is considered **significant and unavoidable.**

Impact TR-10 The project would cause freeway facilities maintained by Caltrans to be degraded to a significant degree under 2035 Cumulative conditions. This is considered a significant impact.

The project would cause the following significant freeway facility degradations. This is considered a ***significant*** impact.

AM Peak Hour

- SB SR 65 from Ferrari Ranch Road to Lincoln Boulevard (LOS E to F)
- SB SR 65 from Twelve Bridges Drive to Placer Parkway (LOS E to F)

PM Peak Hour

No impacts.

Based on projected operations and the level of project-added traffic, the proposed project would not cause operations at a freeway off-ramp to queue back onto the SR 65 mainline.

Mitigation Measure: The following mitigation measure is recommended to restore operations to an acceptable level at each intersection:

MM TR-10: **Implement Mitigation Measure TR-4 (The project applicant shall pay the the Highway 65 JPA Fee and the South Placer Regional Transportation Agency (SPRTA) fee.**

The Highway 65 JPA Fee assesses fees on new development for the cost of interchange improvements along SR 65. The SPRTA fee provides funding for regional projects such as the State Route 65 Widening and Placer Parkway.

This impact is considered ***significant and unavoidable*** because the remaining funding necessary to construct the SR 65 Widening Project has not been identified. No improvements within the SR 65 study area are included in the Tier 1 project list in SACOG's MTP/SCS. In addition, the Placer County Transportation Planning Agency's (PCTPA) website

(http://pctpa.net/) indicates that funding is currently being sought for the SR 65 Widening project.

Impacts Found to Be Less Than Significant

Chapter 6 identified cumulatively significant project impacts at intersections both within and outside of Roseville. That chapter also included analyses of roadway segments outside of Roseville and freeway facilities. The following describes the findings of those evaluations.

- Roadway Segments Outside of Roseville – The project would not cause any study roadway segments to worsen from acceptable to unacceptable conditions. In addition, the project would not increase the v/c ratio by 0.05 or more (i.e., the threshold of significance) at any roadway segments projected to already operate unacceptably. Accordingly, project impacts on roadway segments would be **less than significant** under 2035 Cumulative conditions.

8. INTERNAL CIRCULATION

This chapter describes the Amoruso Ranch Specific Plan internal circulation system including access points along Westbrook Boulevard and anticipated average daily traffic volumes.

ACCESS ALONG WESTBROOK BOULEVARD

The project site plan is shown on Figure 5. As shown, a series of east-west roadways would provide access to the project from Westbrook Boulevard.

- Road A would be the most southerly, signalized project access. It would serve a variety of residential and non-residential land uses. The segment of Road A that connects Westbrook Boulevard and Road B would serve some trips traveling between Placer Ranch Specific Plan (located directly east of the Amoruso Ranch Specific Plan) and Westbrook Boulevard to/from the south.
- Road B would extend easterly from Westbrook Boulevard, ultimately extending into the Placer Ranch Specific Plan. The signalized intersection of Westbrook Boulevard/Road B intersection may include a fourth leg to provide access to the community commercial parcel. Road B is situated about 1,000 feet north of Road A.
- Road C would intersect Westbrook Boulevard approximately equidistant (520 feet) from Roads A and B. This spacing is not sufficient for a traffic signal at Road C. Previous studies have contemplated this intersection permitting left-turn ingress, but prohibiting left-turn egress.
- Road D would be the most northerly, signalized project access. It would serve a variety of residential and non-residential land uses, and ultimately extend easterly into the Placer Ranch Specific Plan. This intersection would be located about 1,040 feet north of the signalized Westbrook Boulevard/Road B intersection.
- Road E would intersect Westbrook Boulevard approximately 500 feet north of Road D, and 1,000 feet south of the planned Placer Parkway. This spacing is not sufficient for a traffic signal. Previous studies have contemplated this as a four-way intersection that permits left-turn ingress, but prohibits left-turn egress.

Additional private driveways may be constructed along Westbrook Boulevard.

The project site plan designates two parcels (totaling seven acres) located directly south of Placer Parkway on either side of Westbrook Boulevard as "NAPOTS", or not a part of this subdivision. These parcels would presumably accommodate an expanded intersection or interchange design of Placer Parkway and Westbrook Boulevard. At this time, details regarding the type of at-grade or grade-separated facility have not been developed.

Under 2035 Cumulative Plus Project conditions, Placer Parkway is projected to carry 18,400 ADT west of Westbrook Boulevard and 36,600 ADT east of Westbrook Boulevard. This is within the capacity of a four-lane restricted access roadway.

AVERAGE DAILY TRAFFIC ON KEY INTERNAL STREETS

Fehr & Peers developed estimates of average daily traffic (ADT) for the project access roadways listed above under 2035 CIP and 2035 Cumulative conditions. **Figure 15** shows the resulting traffic forecasts. This figure indicates that average daily volumes on all roadways that connect to Westbrook Boulevard are projected to be 10,000 ADT or less for the modeled scenarios, with the exception of Road D east of Westbrook Boulevard, which would carry 11,000 ADT under 2035 Cumulative conditions. These results support the concept of Roads A, C, and E being two-lane facilities. Road D west of Westbrook Boulevard would also function acceptably as a two-lane road.

Traffic volumes on Roads B and D east of Westbrook Boulevard depend on the level of development assumed in Placer Ranch. Previous forecasts developed by Fehr & Peers showed that Roads B and D could carry 31,700 and 16,100 ADT, respectively, with buildout of Placer Ranch. However, these analyses were conducted nearly a decade ago.

It is noted that Placer Ranch recently withdrew their development application from the City of Roseville. Accordingly, properties east of the Amoruso Specific Plan do not have any pending or proposed land development. This means that development type and intensity to the east of the project is uncertain. Thus, the City may want to require that Roads A and B within the Amoruso Specific Plan be planned with adequate right-of-way to ultimately be expanded to four lanes should future develop to the east generate trips requiring this amount of capacity. It is noted that arterials connecting different Specific Plans within Roseville are typically connected by multi-lane arterial streets.

RECOMMENDED ON-SITE CIRCULATION ENHANCEMENTS

In June 2011, Fehr & Peers completed a study that analyzed access to the project along Westbrook Boulevard in great detail including permitted turn movements, traffic controls, and turn lane storage. This study also included recommendations within the project site relating to roundabout design and access to the proposed school site. To the extent the site plan has not materially changed, those recommendations are still valid.

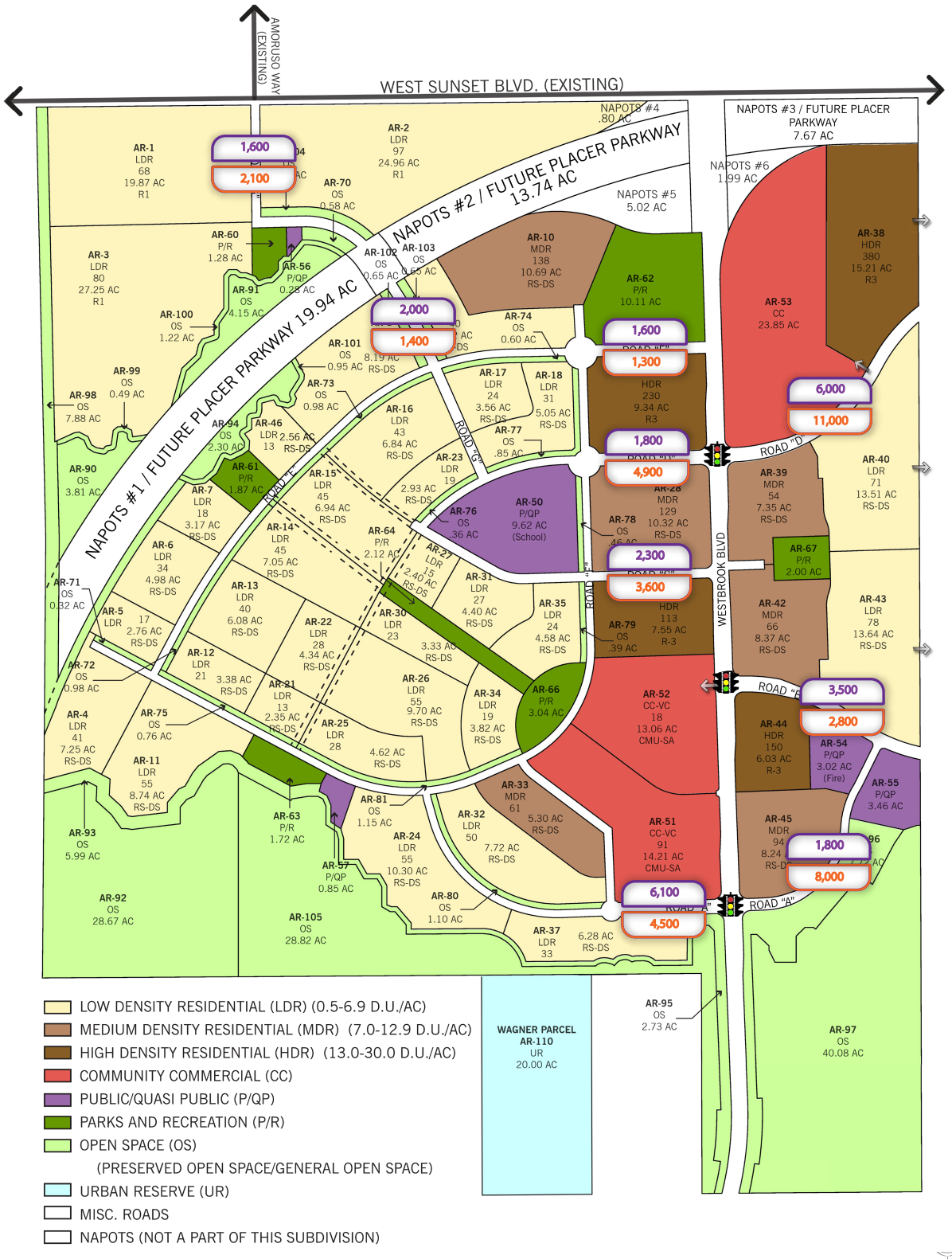


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Figure 15

ADT on Key Internal Streets

9. SUPERCUMULATIVE CONDITIONS

This chapter described anticipated travel conditions in the project vicinity under Supercumulative conditions. The City of Roseville uses this scenario to identify ultimate roadway right-of-way requirement needs. It is not a CEQA scenario, and is not used to analyze project impacts.

LAND USE AND ROADWAY NETWORK ASSUMPTIONS

The Supercumulative scenario begins with the 2035 Cumulative traffic model and adds the following land use and roadway network improvements:

Land Use Assumptions

- Full buildout of the Placer Ranch Specific Plan per the land use assumptions (and planned internal roadways) provided by the applicant in April 2015.
- Buildout of Rocklin
- Buildout of Lincoln and SOI area, including Villages 4, 5, 6, and 7 (located on the west side of the City). These villages total about 22,000 new units and almost 4 million square feet of office/retail.
- Buildout of Placer Vineyards (Placer County).
- Buildout of Sutter Pointe (Sutter County).
- Development of Curry Creek as a planned Specific Plan similar in size to the Sierra Vista Specific Plan and located west of Santucci Boulevard and north of Baseline Road in Placer County.

This scenario does not assume any additional development in the Sunset Industrial Area (beside what is already assumed to absorb through 2035) due to the uncertainty of how much would assume in which areas and with what type of supporting roadways.

Roadway Network Assumptions

- Extension of Westbrook Boulevard/Dowd Road northerly from Placer Parkway as a four-lane arterial to connect with Dowd Road, which would be a major north-south arterial through the Lincoln Villages.
- Placer Parkway is six-lanes from SR 65 to Santucci Boulevard and is extended westerly from Santucci Boulevard to SR 99 as a four-lane expressway.

This scenario did not assume any additional widening of Sunset Boulevard, or Fiddyment Road. This scenario assumes Foothills Boulevard south of Placer Ranch is six lanes, and Foothills Boulevard north of Placer Parkway is four lanes.

TRAFFIC FORECASTS

Figures 16 and 17 display the resulting SuperCumulative ADT forecasts on roadways in northwest Roseville and in unincorporated Placer County under No Project and Plus Project conditions, respectively.

Separately bound Appendix E contains AM and PM peak hour turning movement forecasts for all existing and future signalized intersections in the City under Supercumulative conditions, without and with the proposed Amoruso Specific Plan. Similar to the ADT estimates, the City of Roseville can use this information to identify ultimate intersection geometric needs. It should be noted that these figures do not include a recommended set of lane configurations. The lane configurations from the 2035 Cumulative conditions scenarios are shown (since the intended purpose of the exhibit was to prepare Supercumulative peak hour turning movement forecasts and not to recommend lanes).

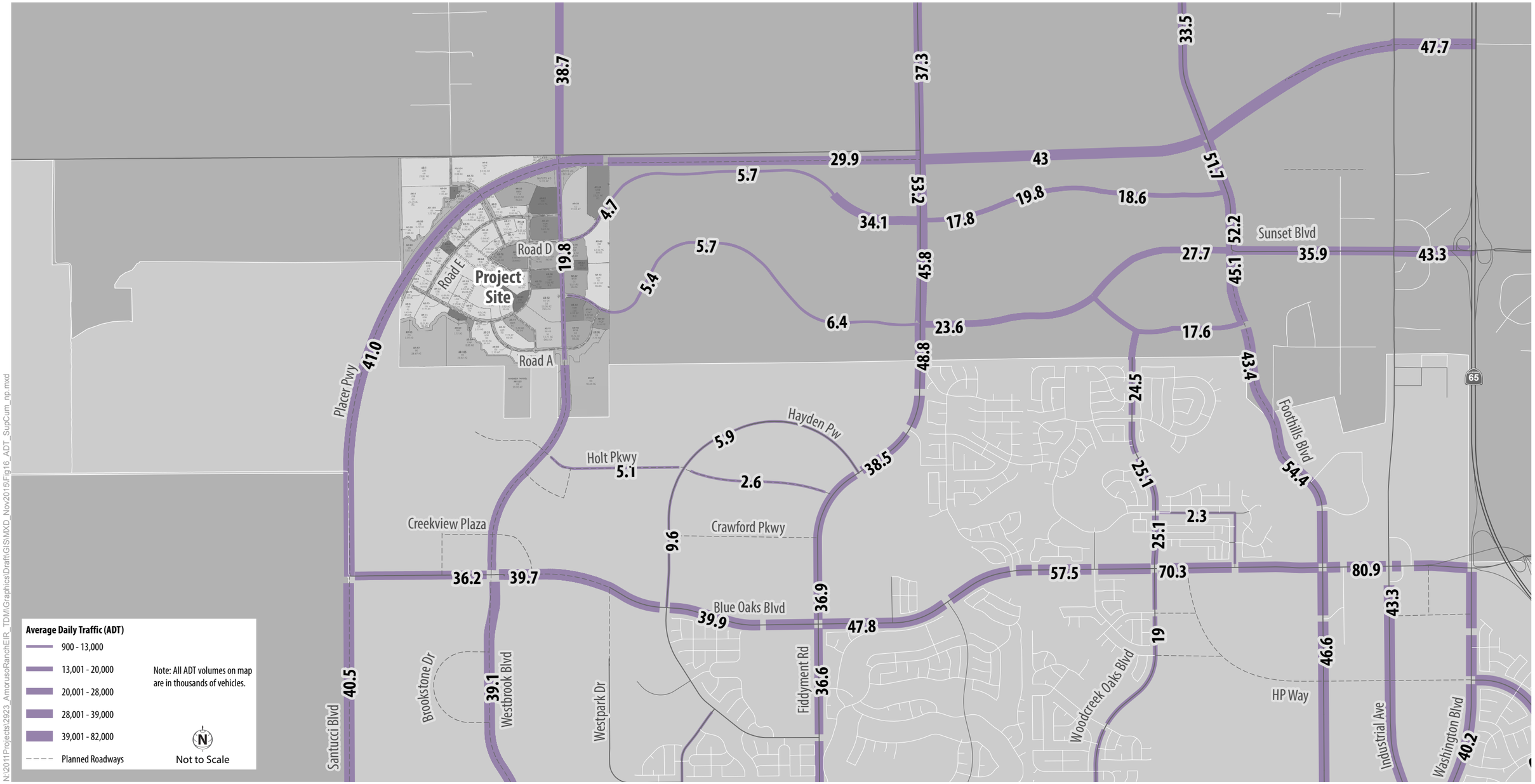

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Figure 16

Average Daily Traffic Volume (ADT) on Roseville Roadways - Supercumulative No Project Conditions

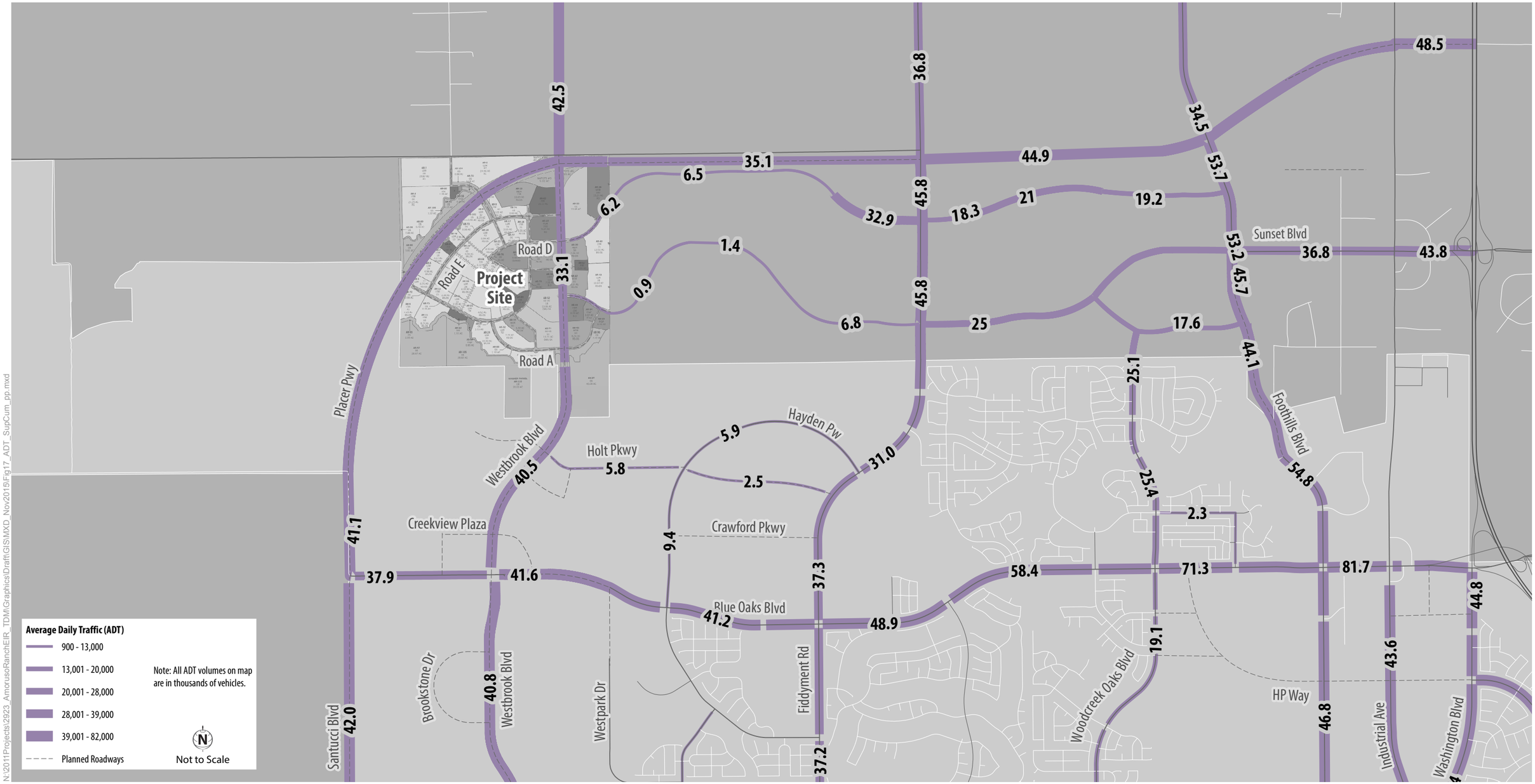

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Figure 17

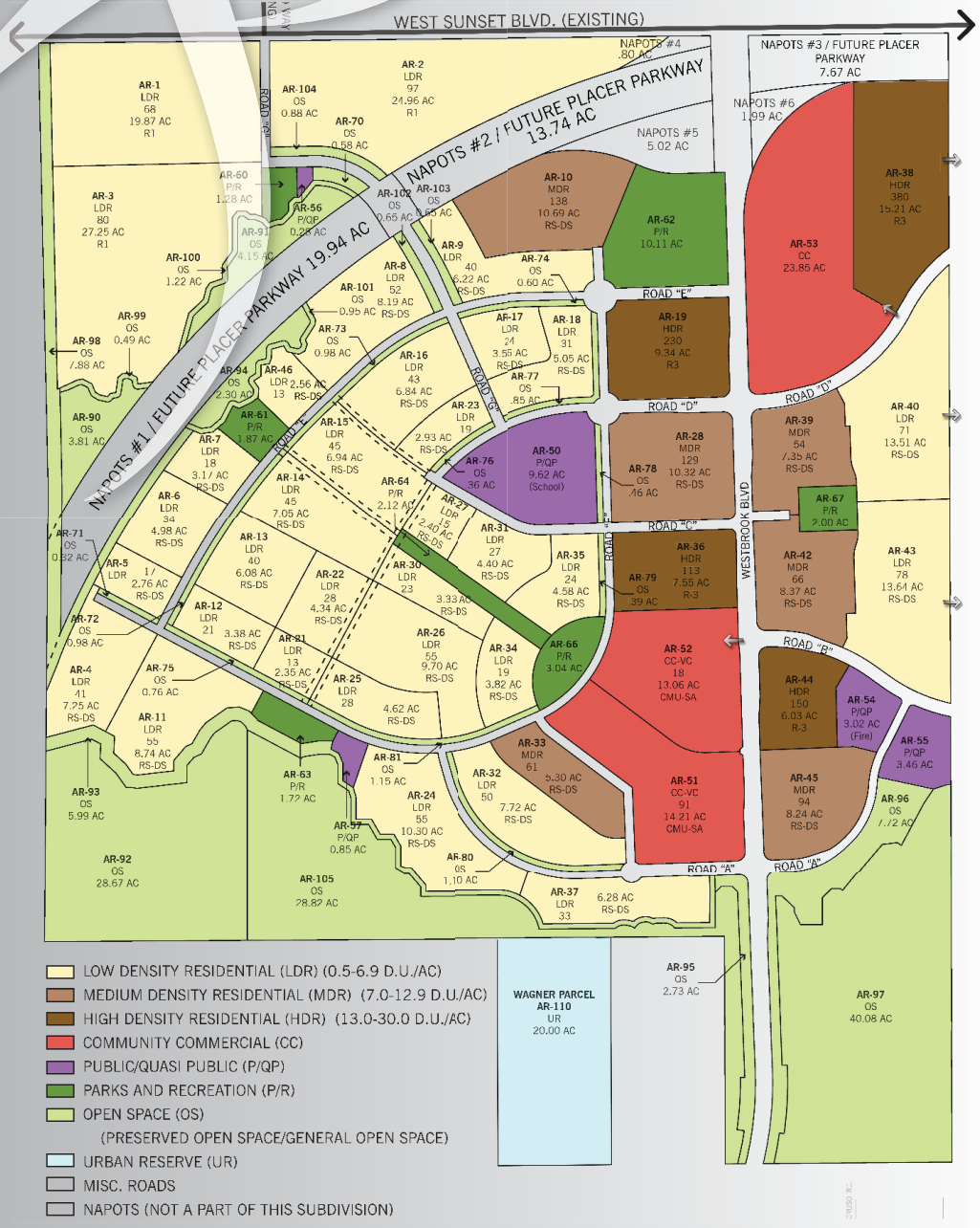
Average Daily Traffic Volume (ADT) on Roseville Roadways - Supercumulative Plus Project Conditions

Final Traffic Study for the Amoruso Ranch Specific Plan

Technical Appendix

Prepared for

CITY OF ROSEVILLE CALIFORNIA



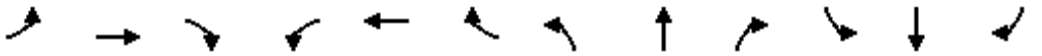
December 18, 2015

FEHR PEERS

APPENDIX A:

EXISTING CONDITIONS TECHNICAL CALCULATIONS

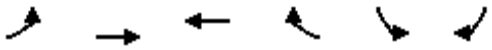
CITY OF ROSEVILLE INTERSECTIONS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	43	2	333	61	58	2	223	358	59	221	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1557	3433	5085	1558	3433	3539	1560	3433	3539	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1557	3433	5085	1558	3433	3539	1560	3433	3539	1560
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	48	2	370	68	64	2	248	398	66	246	7
RTOR Reduction (vph)	0	0	2	0	0	49	0	0	274	0	0	4
Lane Group Flow (vph)	11	48	0	370	68	15	2	248	124	66	246	3
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.6	5.4	5.4	13.0	13.8	13.8	1.1	19.0	19.0	6.9	24.8	24.8
Effective Green, g (s)	5.6	8.4	6.4	14.0	16.8	14.8	2.1	22.4	20.0	7.9	28.2	25.8
Actuated g/C Ratio	0.09	0.13	0.10	0.22	0.26	0.23	0.03	0.35	0.31	0.12	0.44	0.40
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	299	664	155	747	1329	359	112	1233	485	422	1552	626
v/s Ratio Prot	0.00	c0.01		c0.11	0.01		0.00	c0.07		0.02	c0.07	
v/s Ratio Perm			0.00			0.01			c0.08			0.00
v/c Ratio	0.04	0.07	0.00	0.50	0.05	0.04	0.02	0.20	0.26	0.16	0.16	0.00
Uniform Delay, d1	26.9	24.5	26.1	22.1	17.8	19.2	30.1	14.7	16.6	25.2	10.9	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	0.0	0.2	0.0	0.1	0.0	0.2	0.5	0.1	0.1	0.0
Delay (s)	26.9	24.6	26.1	22.2	17.8	19.3	30.1	14.8	17.1	25.3	11.0	11.6
Level of Service	C	C	C	C	B	B	C	B	B	C	B	B
Approach Delay (s)		25.1			21.3			16.3			14.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	13.6
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

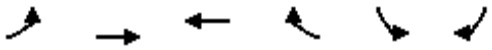


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	3	455	420	25	39	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	506	467	28	43	10
RTOR Reduction (vph)	0	0	0	10	0	9
Lane Group Flow (vph)	3	506	467	18	43	1
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	31.9	27.2	27.2	5.0	5.0
Effective Green, g (s)	1.7	34.9	30.2	30.2	6.0	6.0
Actuated g/C Ratio	0.04	0.74	0.64	0.64	0.13	0.13
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	64	3784	3274	1019	226	203
v/s Ratio Prot	0.00	c0.10	0.09		c0.02	
v/s Ratio Perm				0.01		0.00
v/c Ratio	0.05	0.13	0.14	0.02	0.19	0.01
Uniform Delay, d1	21.8	1.7	3.3	3.0	18.3	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.0	0.0	0.1	0.0
Delay (s)	21.9	1.7	3.3	3.0	18.4	17.9
Level of Service	C	A	A	A	B	B
Approach Delay (s)		1.8	3.3		18.3	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	3.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	525	4	76	456	5	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	583	4	84	507	6	84
RTOR Reduction (vph)	0	2	0	0	0	70
Lane Group Flow (vph)	583	2	84	507	6	14
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	23.7	23.7	5.0	32.7	7.4	7.4
Effective Green, g (s)	26.7	26.7	6.0	35.7	8.4	8.4
Actuated g/C Ratio	0.52	0.52	0.12	0.70	0.16	0.16
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	2662	829	208	3560	292	261
v/s Ratio Prot	c0.11		c0.05	0.10	0.00	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.22	0.00	0.40	0.14	0.02	0.05
Uniform Delay, d1	6.5	5.8	20.8	2.5	17.9	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.5	0.0	0.0	0.0
Delay (s)	6.6	5.8	21.3	2.6	17.9	18.0
Level of Service	A	A	C	A	B	B
Approach Delay (s)	6.6			5.2	18.0	
Approach LOS	A			A	B	

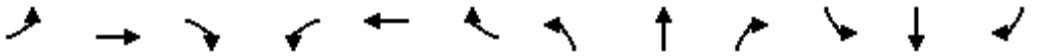
Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	563	457	86	191	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1543	1770	1561
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1543	1770	1561
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	626	508	96	212	24
RTOR Reduction (vph)	0	0	0	56	0	16
Lane Group Flow (vph)	11	626	508	40	212	8
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	20.9	16.2	16.2	14.4	14.4
Effective Green, g (s)	1.7	23.9	19.2	19.2	15.4	15.4
Actuated g/C Ratio	0.04	0.52	0.42	0.42	0.33	0.33
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	65	2631	2113	641	590	520
v/s Ratio Prot	0.01	c0.12	0.10		c0.12	
v/s Ratio Perm				0.03		0.01
v/c Ratio	0.17	0.24	0.24	0.06	0.36	0.02
Uniform Delay, d1	21.6	6.1	8.8	8.1	11.7	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.1	0.1	0.1	0.0
Delay (s)	22.0	6.2	8.9	8.2	11.8	10.3
Level of Service	C	A	A	A	B	B
Approach Delay (s)		6.5	8.7		11.7	
Approach LOS		A	A		B	

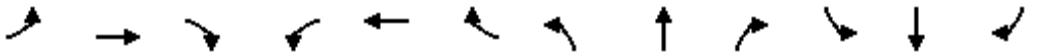
Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	46.2	Sum of lost time (s)	6.9
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



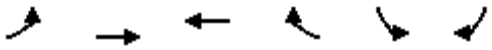
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	711	10	28	413	118	22	3	35	271	33	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.6	3.6	3.6	3.9	3.9	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1681	1684	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1681	1684	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	790	11	31	459	131	24	3	39	301	37	19
RTOR Reduction (vph)	0	0	5	0	0	54	0	0	36	0	4	0
Lane Group Flow (vph)	28	790	6	31	459	77	24	3	3	178	175	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	4.9	67.8	67.8	4.7	67.6	67.6	9.6	9.6	9.6	18.4	18.4	
Effective Green, g (s)	5.9	70.8	70.8	5.7	70.6	70.6	10.6	10.6	10.6	19.4	19.4	
Actuated g/C Ratio	0.05	0.59	0.59	0.05	0.59	0.59	0.09	0.09	0.09	0.16	0.16	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.6	4.6	4.6	4.9	4.9	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	4.5	4.5	4.5	3.1	3.1	
Lane Grp Cap (vph)	87	3000	934	84	2992	931	156	165	140	272	272	
v/s Ratio Prot	0.02	c0.16		c0.02	0.09		c0.01	0.00		c0.11	0.10	
v/s Ratio Perm			0.00			0.05			0.00			
v/c Ratio	0.32	0.26	0.01	0.37	0.15	0.08	0.15	0.02	0.02	0.65	0.64	
Uniform Delay, d1	55.1	11.9	10.1	55.4	11.2	10.7	50.6	49.9	50.0	47.2	47.1	
Progression Factor	1.00	1.00	1.00	1.11	0.54	0.75	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.1	0.0	1.0	0.1	0.2	0.8	0.1	0.1	5.6	5.2	
Delay (s)	55.9	12.1	10.1	62.5	6.1	8.2	51.4	50.0	50.1	52.8	52.2	
Level of Service	E	B	B	E	A	A	D	D	D	D	D	
Approach Delay (s)		13.5			9.4			50.6			52.5	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



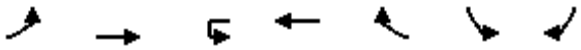
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	907	88	168	444	118	58	105	281	390	92	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.7		3.0	2.7	2.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3153		3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3153		3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	1008	98	187	493	131	64	117	312	433	102	51
RTOR Reduction (vph)	0	0	49	0	0	61	0	228	0	0	0	40
Lane Group Flow (vph)	30	1008	49	187	493	70	64	201	0	433	102	11
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	6.0	56.4	56.4	10.9	61.3	61.3	9.6	14.4		18.6	23.4	23.4
Effective Green, g (s)	7.0	59.4	59.4	11.9	64.3	64.3	10.6	17.4		19.6	26.4	26.4
Actuated g/C Ratio	0.06	0.49	0.49	0.10	0.54	0.54	0.09	0.14		0.16	0.22	0.22
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.8		2.0	3.8	3.8
Lane Grp Cap (vph)	200	2517	784	340	2725	848	303	457		561	779	348
v/s Ratio Prot	0.01	c0.20		c0.05	0.10		0.02	c0.06		c0.13	0.03	
v/s Ratio Perm			0.03			0.04						0.01
v/c Ratio	0.15	0.40	0.06	0.55	0.18	0.08	0.21	0.44		0.77	0.13	0.03
Uniform Delay, d1	53.7	19.1	15.8	51.5	14.3	13.5	50.8	46.8		48.1	37.6	36.8
Progression Factor	1.07	0.71	0.66	1.26	0.88	1.52	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.1	1.1	0.1	0.2	0.1	0.9		6.0	0.1	0.0
Delay (s)	57.5	13.7	10.5	66.1	12.8	20.7	50.9	47.7		54.0	37.7	36.8
Level of Service	E	B	B	E	B	C	D	D		D	D	D
Approach Delay (s)		14.6			26.4			48.1			49.7	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



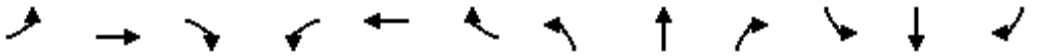
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	1568	720	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	1742	800	11	11	11
RTOR Reduction (vph)	0	0	0	5	0	9
Lane Group Flow (vph)	11	1742	800	6	11	2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.1	33.7	27.6	27.6	7.5	7.5
Effective Green, g (s)	1.1	33.7	27.6	27.6	7.5	7.5
Actuated g/C Ratio	0.02	0.66	0.54	0.54	0.15	0.15
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	38	3347	2741	853	259	232
v/s Ratio Prot	0.01	c0.34	0.16		c0.01	
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.29	0.52	0.29	0.01	0.04	0.01
Uniform Delay, d1	24.7	4.5	6.5	5.5	18.8	18.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.1	0.1	0.0	0.1	0.0
Delay (s)	28.9	4.7	6.5	5.5	18.8	18.7
Level of Service	C	A	A	A	B	B
Approach Delay (s)		4.8	6.5		18.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



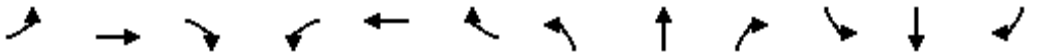
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	8	1659	0	694	59	225	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6		2.6	2.6	3.9	3.9
Lane Util. Factor	1.00	0.91		0.91	1.00	0.97	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085		5085	1583	3433	1583
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085		5085	1583	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	1843	0	771	66	250	38
RTOR Reduction (vph)	0	0	0	0	15	0	33
Lane Group Flow (vph)	9	1843	0	771	51	250	5
Turn Type	Prot		Prot		Perm		Perm
Protected Phases	7	4	3	8		6	
Permitted Phases					8		6
Actuated Green, G (s)	1.3	94.8		89.5	89.5	14.3	14.3
Effective Green, g (s)	2.3	98.2		92.9	92.9	15.3	15.3
Actuated g/C Ratio	0.02	0.82		0.77	0.77	0.13	0.13
Clearance Time (s)	4.0	6.0		6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.8		4.8	4.8	2.0	2.0
Lane Grp Cap (vph)	34	4161		3937	1226	438	202
v/s Ratio Prot	0.01	c0.36		0.15		c0.07	
v/s Ratio Perm					0.03		0.00
v/c Ratio	0.26	0.44		0.20	0.04	0.57	0.02
Uniform Delay, d1	58.0	3.1		3.6	3.2	49.3	45.8
Progression Factor	1.34	0.35		0.83	0.63	1.00	1.00
Incremental Delay, d2	1.4	0.3		0.0	0.0	1.1	0.0
Delay (s)	79.1	1.4		3.0	2.0	50.4	45.8
Level of Service	E	A		A	A	D	D
Approach Delay (s)		1.8		3.0		49.8	
Approach LOS		A		A		D	

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



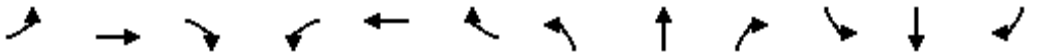
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	1479	256	556	732	256	128	82	215	130	55	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6	2.6	3.0	2.6	2.6	3.0	2.6	3.0	3.0	1.9	1.9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	34	1643	284	618	813	284	142	91	239	144	61	28
RTOR Reduction (vph)	0	0	142	0	0	111	0	0	0	0	0	25
Lane Group Flow (vph)	34	1643	142	618	813	173	142	91	239	144	61	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			2
Actuated Green, G (s)	6.0	54.9	54.9	21.0	69.9	69.9	14.1	12.0	120.0	12.1	10.7	10.7
Effective Green, g (s)	7.0	58.3	58.3	22.0	73.3	73.3	15.1	15.4	120.0	13.1	14.1	14.1
Actuated g/C Ratio	0.06	0.49	0.49	0.18	0.61	0.61	0.13	0.13	1.00	0.11	0.12	0.12
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.4		2.0	6.0	6.0
Lane Grp Cap (vph)	200	2470	769	629	3106	967	432	454	1583	375	416	186
v/s Ratio Prot	0.01	c0.32		c0.18	0.16		0.04	c0.03		c0.04	0.02	
v/s Ratio Perm			0.09			0.11			c0.15			0.00
v/c Ratio	0.17	0.67	0.18	0.98	0.26	0.18	0.33	0.20	0.15	0.38	0.15	0.02
Uniform Delay, d1	53.7	23.4	17.4	48.8	10.8	10.2	47.8	46.8	0.0	49.7	47.5	46.8
Progression Factor	1.10	1.19	1.44	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.9	0.3	31.2	0.2	0.4	0.2	0.3	0.2	0.2	0.5	0.1
Delay (s)	59.1	28.9	25.3	80.0	11.0	10.6	48.0	47.0	0.2	49.9	48.0	46.9
Level of Service	E	C	C	F	B	B	D	D	A	D	D	D
Approach Delay (s)		28.9			35.8			23.6			49.1	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	32.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



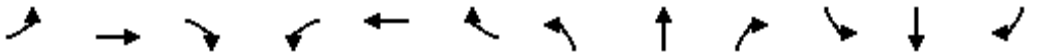
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1522	238	165	495	332	157	0	285	59	228	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	2.0	4.0	2.0	4.0		2.0	4.0	4.0	2.0
Lane Util. Factor		0.86	1.00	0.97	0.95	1.00	0.97		1.00	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		6408	1583	3433	3539	1583	3433		1583	1770	3539	1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		6408	1583	3433	3539	1583	3433		1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1691	264	183	550	369	174	0	317	66	253	287
RTOR Reduction (vph)	0	0	139	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1691	125	183	550	369	174	0	317	66	253	287
Turn Type			Perm	Prot		Free	Prot		Over	Split		Free
Protected Phases		4		3	8		2		3	1	1	
Permitted Phases			4			Free						Free
Actuated Green, G (s)		51.1	51.1	21.0	76.1	120.0	10.5		21.0	15.4	15.4	120.0
Effective Green, g (s)		53.1	53.1	23.0	78.1	120.0	12.5		23.0	17.4	17.4	120.0
Actuated g/C Ratio		0.44	0.44	0.19	0.65	1.00	0.10		0.19	0.14	0.14	1.00
Clearance Time (s)		6.0	6.0	4.0	6.0		6.0		4.0	6.0	6.0	
Vehicle Extension (s)		4.8	4.8	2.0	4.8		2.0		2.0	4.7	4.7	
Lane Grp Cap (vph)		2836	700	658	2303	1583	358		303	257	513	1583
v/s Ratio Prot		c0.26		0.05	0.16		c0.05		c0.20	0.04	c0.07	
v/s Ratio Perm			0.08			0.23						0.18
v/c Ratio		0.60	0.18	0.28	0.24	0.23	0.49		1.05	0.26	0.49	0.18
Uniform Delay, d1		25.3	20.3	41.4	8.7	0.0	50.7		48.5	45.6	47.2	0.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5	0.2	0.1	0.2	0.3	0.4		64.3	1.0	1.4	0.3
Delay (s)		25.8	20.5	41.5	8.9	0.3	51.1		112.8	46.6	48.6	0.3
Level of Service		C	C	D	A	A	D		F	D	D	A
Approach Delay (s)		25.1			11.5			90.9			25.5	
Approach LOS		C			B			F			C	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



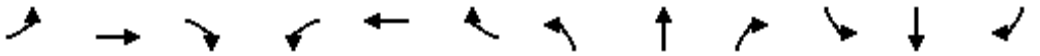
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	160	0	0	0	40	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)						4.0				4.0		
Lane Util. Factor						1.00				1.00		
Frt						0.85				1.00		
Flt Protected						1.00				0.95		
Satd. Flow (prot)						1583				1770		
Flt Permitted						1.00				0.95		
Satd. Flow (perm)						1583				1770		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	0	178	0	0	0	44	0	0
RTOR Reduction (vph)	0	0	0	0	0	141	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	37	0	0	0	44	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)						3.8				0.7		
Effective Green, g (s)						3.8				0.7		
Actuated g/C Ratio						0.21				0.04		
Clearance Time (s)						4.0				4.0		
Vehicle Extension (s)						3.0				3.0		
Lane Grp Cap (vph)						329				68		
v/s Ratio Prot										c0.02		
v/s Ratio Perm						c0.02						
v/c Ratio						0.11				0.65		
Uniform Delay, d1						5.9				8.7		
Progression Factor						1.00				1.00		
Incremental Delay, d2						0.2				19.2		
Delay (s)						6.0				27.9		
Level of Service						A				C		
Approach Delay (s)		0.0			6.0			0.0			27.9	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	18.3	Sum of lost time (s)	13.8
Intersection Capacity Utilization	13.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



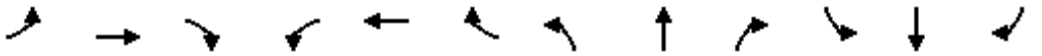
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	0	75	29	75	56	23	96	79	2	41	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.3	4.3		3.0		3.0	4.7		3.0	4.7	4.7
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.95		1.00	0.93		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1759		1770	3300		1770	3539	1583
Flt Permitted		0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1759		1770	3300		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	0	83	32	83	62	26	107	88	2	46	1
RTOR Reduction (vph)	0	0	71	0	15	0	0	64	0	0	0	1
Lane Group Flow (vph)	0	19	12	0	162	0	26	131	0	2	46	0
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	2	2		1	1		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)		7.1	7.1		13.4		0.9	13.5		0.8	13.4	13.4
Effective Green, g (s)		8.1	8.1		14.4		1.9	14.5		1.8	14.4	14.4
Actuated g/C Ratio		0.15	0.15		0.27		0.04	0.27		0.03	0.27	0.27
Clearance Time (s)		5.3	5.3		4.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)		266	238		471		63	889		59	947	424
v/s Ratio Prot		c0.01			c0.09		c0.01	c0.04		0.00	0.01	
v/s Ratio Perm			0.01									0.00
v/c Ratio		0.07	0.05		0.34		0.41	0.15		0.03	0.05	0.00
Uniform Delay, d1		19.6	19.6		15.9		25.4	14.9		25.2	14.6	14.4
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.0	0.0		0.2		1.6	0.1		0.1	0.0	0.0
Delay (s)		19.7	19.6		16.1		27.0	15.1		25.2	14.7	14.4
Level of Service		B	B		B		C	B		C	B	B
Approach Delay (s)		19.6			16.1			16.5			15.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	10.3
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



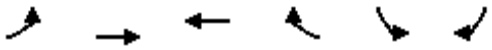
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	10	39	50	3	0	95	193	34	0	317	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9		4.0	4.7	4.7		4.7	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00		0.95	
Frt		0.92			1.00		1.00	1.00	0.85		1.00	
Flt Protected		0.99			0.95		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1696			1778		1770	3539	1583		3529	
Flt Permitted		0.99			0.95		0.95	1.00	1.00		1.00	
Satd. Flow (perm)		1696			1778		1770	3539	1583		3529	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	11	43	56	3	0	106	214	38	0	352	7
RTOR Reduction (vph)	0	38	0	0	0	0	0	0	17	0	1	0
Lane Group Flow (vph)	0	38	0	0	59	0	106	214	21	0	358	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	2	2		1	1		3	8		7	4	
Permitted Phases						1			8			
Actuated Green, G (s)		6.1			5.0		6.9	30.2	30.2		19.3	
Effective Green, g (s)		6.1			5.0		6.9	31.2	31.2		20.3	
Actuated g/C Ratio		0.11			0.09		0.12	0.55	0.55		0.36	
Clearance Time (s)		4.9			4.9		4.0	5.7	5.7		5.7	
Vehicle Extension (s)		2.0			2.0		2.0	4.5	4.5		4.5	
Lane Grp Cap (vph)		182			157		215	1944	870		1261	
v/s Ratio Prot		c0.02			c0.03		c0.06	0.06			c0.10	
v/s Ratio Perm									0.01			
v/c Ratio		0.21			0.38		0.49	0.11	0.02		0.28	
Uniform Delay, d1		23.1			24.4		23.3	6.1	5.8		13.1	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.2			0.6		0.6	0.0	0.0		0.2	
Delay (s)		23.3			25.0		24.0	6.2	5.9		13.3	
Level of Service		C			C		C	A	A		B	
Approach Delay (s)		23.3			25.0			11.4			13.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	18.5
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



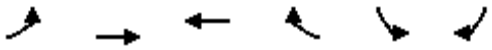
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	216	262	393	100	79	126	490	403	112	687	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5	3.5	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	240	291	437	111	88	140	544	448	124	763	11
RTOR Reduction (vph)	0	0	226	0	0	57	0	0	295	0	0	7
Lane Group Flow (vph)	23	240	65	437	111	31	140	544	153	124	763	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.5	16.6	16.6	15.1	27.9	27.9	8.9	25.9	25.9	8.7	25.7	25.7
Effective Green, g (s)	4.5	19.1	19.1	16.1	30.4	30.4	9.9	29.3	29.3	9.7	29.1	29.1
Actuated g/C Ratio	0.05	0.22	0.22	0.19	0.35	0.35	0.12	0.34	0.34	0.11	0.34	0.34
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	180	786	352	643	1251	560	395	1732	539	387	1197	536
v/s Ratio Prot	0.01	c0.07		c0.13	0.03		c0.04	0.11		0.04	c0.22	
v/s Ratio Perm			0.04			0.02			0.10			0.00
v/c Ratio	0.13	0.31	0.18	0.68	0.09	0.06	0.35	0.31	0.28	0.32	0.64	0.01
Uniform Delay, d1	38.9	27.9	27.1	32.5	18.6	18.3	35.1	20.9	20.7	35.1	24.0	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.4	0.4	2.3	0.0	0.1	0.2	0.2	0.6	0.2	1.5	0.0
Delay (s)	39.0	28.3	27.6	34.8	18.6	18.4	35.3	21.1	21.3	35.3	25.5	18.9
Level of Service	D	C	C	C	B	B	D	C	C	D	C	B
Approach Delay (s)		28.4			29.7			22.9			26.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



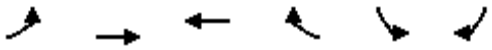
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	735	517	32	63	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	817	574	36	70	26
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	12	817	574	36	70	26
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.0	34.2	29.5	51.1	6.9	51.1
Effective Green, g (s)	2.0	37.2	32.5	51.1	8.4	51.1
Actuated g/C Ratio	0.04	0.73	0.64	1.00	0.16	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	69	2576	2251	1583	291	1583
v/s Ratio Prot	0.01	c0.23	0.16		c0.04	
v/s Ratio Perm				0.02		0.02
v/c Ratio	0.17	0.32	0.25	0.02	0.24	0.02
Uniform Delay, d1	23.8	2.5	4.0	0.0	18.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.1	0.0	0.2	0.0
Delay (s)	24.2	2.6	4.1	0.0	18.7	0.0
Level of Service	C	A	A	A	B	A
Approach Delay (s)		2.9	3.9		13.7	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	4.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	5.5
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	5	789	567	18	50	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.98	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3523		1750	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3523		1750	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	877	630	20	56	10
RTOR Reduction (vph)	0	0	1	0	9	0
Lane Group Flow (vph)	6	877	649	0	57	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.0	35.6	30.6		6.1	
Effective Green, g (s)	2.0	38.3	33.3		7.1	
Actuated g/C Ratio	0.04	0.75	0.65		0.14	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	69	2637	2282		242	
v/s Ratio Prot	0.00	c0.25	0.18		c0.03	
v/s Ratio Perm						
v/c Ratio	0.09	0.33	0.28		0.24	
Uniform Delay, d1	23.8	2.2	3.9		19.7	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.2	0.1	0.1		0.2	
Delay (s)	24.0	2.3	4.0		19.9	
Level of Service	C	A	A		B	
Approach Delay (s)		2.5	4.0		19.9	
Approach LOS		A	A		B	

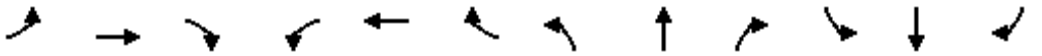
Intersection Summary			
HCM Average Control Delay	3.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	9	827	529	24	104	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0		3.0	3.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3511		1770	1553
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3511		1770	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	919	588	27	116	50
RTOR Reduction (vph)	0	0	3	0	0	40
Lane Group Flow (vph)	10	919	612	0	116	10
Confl. Peds. (#/hr)				10		10
Turn Type	Prot					Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	1.0	30.2	25.2		8.5	8.5
Effective Green, g (s)	2.0	32.9	27.9		9.5	9.5
Actuated g/C Ratio	0.04	0.67	0.56		0.19	0.19
Clearance Time (s)	4.0	6.7	6.7		4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3		2.0	2.0
Lane Grp Cap (vph)	72	2357	1983		340	299
v/s Ratio Prot	0.01	c0.26	0.17		c0.07	
v/s Ratio Perm						0.01
v/c Ratio	0.14	0.39	0.31		0.34	0.03
Uniform Delay, d1	22.9	3.7	5.7		17.2	16.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.2	0.1		0.2	0.0
Delay (s)	23.2	3.9	5.8		17.5	16.2
Level of Service	C	A	A		B	B
Approach Delay (s)		4.1	5.8		17.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	7.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	741	154	175	454	133	88	239	252	301	329	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	3185	1400	3090	3185	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	3185	1400	3090	3185	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	823	171	194	504	148	98	266	280	334	366	206
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	37	823	171	194	504	148	98	266	280	334	366	206
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	3.9	53.7	120.0	13.3	63.1	120.0	8.2	16.2	120.0	17.4	25.4	120.0
Effective Green, g (s)	4.9	56.7	120.0	14.3	66.1	120.0	9.2	19.2	120.0	18.4	28.4	120.0
Actuated g/C Ratio	0.04	0.47	1.00	0.12	0.55	1.00	0.08	0.16	1.00	0.15	0.24	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	126	1505	1400	368	1754	1400	237	510	1400	474	754	1400
v/s Ratio Prot	0.01	c0.26		c0.06	0.16		0.03	c0.08		c0.11	0.11	
v/s Ratio Perm			0.12			0.11			0.20			0.15
v/c Ratio	0.29	0.55	0.12	0.53	0.29	0.11	0.41	0.52	0.20	0.70	0.49	0.15
Uniform Delay, d1	55.9	22.5	0.0	49.7	14.4	0.0	52.8	46.2	0.0	48.2	39.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.4	0.2	0.6	0.2	0.2	0.4	1.5	0.3	3.9	0.9	0.2
Delay (s)	56.3	23.9	0.2	50.3	14.5	0.2	53.3	47.7	0.3	52.1	40.4	0.2
Level of Service	E	C	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		21.2			20.2			28.0			35.6	
Approach LOS		C			C			C			D	

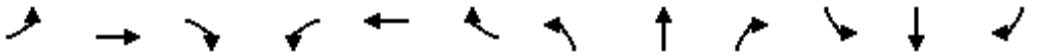
Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1283	31	111	673	57	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	3.6	3.6
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3523		1770	3539	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3523		1770	3539	1770	1542
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1426	34	123	748	63	251
RTOR Reduction (vph)	1	0	0	0	0	225
Lane Group Flow (vph)	1459	0	123	748	63	26
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	81.5		12.7	98.2	11.2	11.2
Effective Green, g (s)	83.5		12.7	100.2	12.5	12.5
Actuated g/C Ratio	0.70		0.11	0.84	0.10	0.10
Clearance Time (s)	5.7		4.0	5.7	4.9	4.9
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2451		187	2955	184	161
v/s Ratio Prot	c0.41		c0.07	0.21	c0.04	
v/s Ratio Perm						0.02
v/c Ratio	0.60		0.66	0.25	0.34	0.16
Uniform Delay, d1	9.5		51.6	2.1	49.9	49.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1		6.2	0.2	0.4	0.2
Delay (s)	10.6		57.8	2.3	50.3	49.2
Level of Service	B		E	A	D	D
Approach Delay (s)	10.6			10.1	49.4	
Approach LOS	B			B	D	

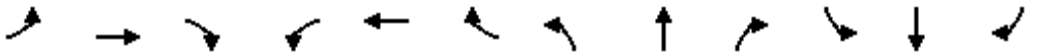
Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



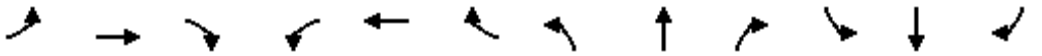
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	189	1255	162	386	589	195	170	513	583	114	337	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	6.0	5.7	4.0	4.0	6.0	4.0	4.0	6.4	4.0
Lane Util. Factor	0.97	0.91	1.00	0.94	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	4990	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	4990	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	210	1394	180	429	654	217	189	570	648	127	374	69
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	210	1394	180	429	654	217	189	570	648	127	374	69
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	11.4	51.1	120.0	14.6	54.6	120.0	11.0	23.8	120.0	8.8	21.2	120.0
Effective Green, g (s)	11.4	51.1	120.0	14.6	54.6	120.0	11.0	23.8	120.0	8.8	21.2	120.0
Actuated g/C Ratio	0.10	0.43	1.00	0.12	0.46	1.00	0.09	0.20	1.00	0.07	0.18	1.00
Clearance Time (s)	5.7	5.7		6.0	5.7		4.0	6.0		4.0	6.4	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	3.7	
Lane Grp Cap (vph)	326	2165	1583	607	1610	1583	315	702	1583	252	898	1583
v/s Ratio Prot	0.06	c0.27		c0.09	0.18		c0.06	c0.16		0.04	0.07	
v/s Ratio Perm			0.11			0.14			c0.41			0.04
v/c Ratio	0.64	0.64	0.11	0.71	0.41	0.14	0.60	0.81	0.41	0.50	0.42	0.04
Uniform Delay, d1	52.3	27.3	0.0	50.6	21.9	0.0	52.4	46.0	0.0	53.5	43.9	0.0
Progression Factor	1.00	1.00	1.00	1.12	1.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.8	0.1	3.0	0.7	0.2	2.1	7.5	0.8	0.6	0.4	0.1
Delay (s)	55.6	28.1	0.1	59.5	23.8	0.2	54.4	53.5	0.8	54.1	44.3	0.1
Level of Service	E	C	A	E	C	A	D	D	A	D	D	A
Approach Delay (s)		28.5			31.6			29.3			41.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



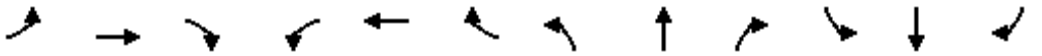
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	1229	190	169	839	61	156	356	223	45	321	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0	3.4	3.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	178	1366	211	188	932	68	173	396	248	50	357	167
RTOR Reduction (vph)	0	0	100	0	0	0	0	0	0	0	0	137
Lane Group Flow (vph)	178	1366	111	188	932	68	173	396	248	50	357	30
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			Free			6
Actuated Green, G (s)	10.5	56.7	56.7	10.9	59.1	120.0	11.1	24.2	120.0	5.8	18.9	18.9
Effective Green, g (s)	11.5	59.7	59.7	14.3	62.5	120.0	12.1	27.6	120.0	6.8	21.9	21.9
Actuated g/C Ratio	0.10	0.50	0.50	0.12	0.52	1.00	0.10	0.23	1.00	0.06	0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1		2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	329	2530	788	409	2648	1583	346	814	1583	195	646	289
v/s Ratio Prot	0.05	c0.27		c0.05	0.18		0.05	c0.11		0.01	c0.10	
v/s Ratio Perm			0.07			0.04			0.16			0.02
v/c Ratio	0.54	0.54	0.14	0.46	0.35	0.04	0.50	0.49	0.16	0.26	0.55	0.11
Uniform Delay, d1	51.7	20.7	16.3	49.2	16.9	0.0	51.1	40.1	0.0	54.2	44.6	40.9
Progression Factor	0.72	1.30	2.83	1.03	1.24	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.7	0.3	0.3	0.1	0.0	0.4	0.7	0.2	0.3	1.4	0.3
Delay (s)	38.0	27.6	46.4	50.9	21.0	0.0	51.5	40.8	0.2	54.4	46.0	41.1
Level of Service	D	C	D	D	C	A	D	D	A	D	D	D
Approach Delay (s)		30.9			24.6			30.7			45.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



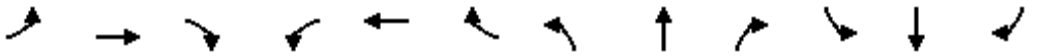
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1455	9	20	943	54	50	42	39	84	4	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	1617	10	22	1048	60	56	47	43	93	4	32
RTOR Reduction (vph)	0	0	3	0	0	21	0	0	40	0	0	30
Lane Group Flow (vph)	29	1617	7	22	1048	39	56	47	3	93	4	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.5	78.7	78.7	4.2	78.4	78.4	9.8	8.6	8.6	10.8	8.7	8.7
Effective Green, g (s)	4.5	78.7	78.7	4.2	78.4	78.4	9.8	8.6	8.6	10.8	8.7	8.7
Actuated g/C Ratio	0.04	0.66	0.66	0.04	0.65	0.65	0.08	0.07	0.07	0.09	0.07	0.07
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.5	2.5	2.0	3.1	3.1
Lane Grp Cap (vph)	66	3335	1038	62	3322	1034	145	134	113	159	135	115
v/s Ratio Prot	0.02	c0.32		0.01	c0.21		0.03	c0.03		c0.05	0.00	
v/s Ratio Perm			0.00			0.02			0.00			0.00
v/c Ratio	0.44	0.48	0.01	0.35	0.32	0.04	0.39	0.35	0.03	0.58	0.03	0.02
Uniform Delay, d1	56.5	10.4	7.1	56.6	9.1	7.4	52.2	53.0	51.8	52.4	51.7	51.7
Progression Factor	1.01	1.14	2.02	0.86	0.52	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.5	0.0	1.2	0.1	0.0	0.6	1.2	0.1	3.5	0.1	0.1
Delay (s)	58.4	12.4	14.4	49.7	4.8	4.7	52.9	54.2	51.9	56.0	51.8	51.8
Level of Service	E	B	B	D	A	A	D	D	D	E	D	D
Approach Delay (s)		13.2			5.7			53.0			54.8	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



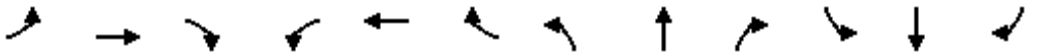
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	804	716	643	637	80	542	259	341	104	385	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.7	3.0	2.0	4.6	3.0	4.7	-0.4	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	4990	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	4990	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	893	796	714	708	89	602	288	379	116	428	26
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	24	893	796	714	708	89	602	288	379	116	428	26
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.5	39.0	120.0	27.2	57.0	120.0	21.0	18.4	120.0	11.7	16.8	120.0
Effective Green, g (s)	10.5	42.0	120.0	28.2	60.0	120.0	22.0	21.8	120.0	12.7	20.2	120.0
Actuated g/C Ratio	0.09	0.35	1.00	0.23	0.50	1.00	0.18	0.18	1.00	0.11	0.17	1.00
Clearance Time (s)	4.0	6.0		4.0	5.7		3.0	8.0		5.7	3.0	
Vehicle Extension (s)	2.0	4.1		3.0	4.5		4.1	4.1		4.1	4.1	
Lane Grp Cap (vph)	300	1780	1583	807	2543	1583	915	643	1583	363	856	1583
v/s Ratio Prot	0.01	0.18		c0.21	0.14		c0.12	0.08		0.03	0.08	
v/s Ratio Perm			c0.50			0.06			0.24			0.02
v/c Ratio	0.08	0.50	0.50	0.88	0.28	0.06	0.66	0.45	0.24	0.32	0.50	0.02
Uniform Delay, d1	50.3	30.7	0.0	44.3	17.4	0.0	45.5	43.7	0.0	49.7	45.3	0.0
Progression Factor	0.93	0.95	1.00	0.85	1.08	1.00	0.91	0.83	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.3	1.0	11.1	0.3	0.1	1.9	0.7	0.4	0.7	0.7	0.0
Delay (s)	46.8	29.6	1.0	48.7	19.0	0.1	43.2	36.8	0.4	50.4	46.0	0.0
Level of Service	D	C	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		16.6			32.0			29.0			44.8	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	151	1	103	41	25	36	121	1070	8	182	1082	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	2.0	3.0	3.0	3.0	3.0	2.6		9.0	2.6	2.6
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	0.97	0.86		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3221	1616	1583	1770	1863	1583	3433	6401		3433	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3221	1616	1583	1770	1863	1583	3433	6401		3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	168	1	114	46	28	40	134	1189	9	202	1202	97
RTOR Reduction (vph)	0	0	103	0	0	37	0	0	0	0	0	35
Lane Group Flow (vph)	113	56	11	46	28	3	134	1198	0	202	1202	62
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8						6
Actuated Green, G (s)	9.9	9.9	9.9	8.3	8.3	8.3	10.0	66.8		9.0	72.8	72.8
Effective Green, g (s)	10.9	11.9	11.9	10.3	10.3	10.3	11.0	70.2		11.0	76.2	76.2
Actuated g/C Ratio	0.09	0.10	0.10	0.09	0.09	0.09	0.09	0.59		0.09	0.64	0.64
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	6.0		11.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	293	160	157	152	160	136	315	3745		315	3229	1005
v/s Ratio Prot	c0.04	0.03		c0.03	0.02		c0.04	0.19		0.06	c0.24	
v/s Ratio Perm			0.01			0.00						0.04
v/c Ratio	0.39	0.35	0.07	0.30	0.17	0.03	0.43	0.32		0.64	0.37	0.06
Uniform Delay, d1	51.4	50.4	49.0	51.5	50.9	50.3	51.5	12.7		52.6	10.5	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.53	0.28		1.27	1.70	3.32
Incremental Delay, d2	0.8	1.3	0.2	1.1	0.5	0.1	0.9	0.2		4.3	0.1	0.0
Delay (s)	52.2	51.8	49.2	52.6	51.4	50.3	79.8	3.8		71.0	17.8	27.6
Level of Service	D	D	D	D	D	D	E	A		E	B	C
Approach Delay (s)		50.9			51.5			11.5			25.6	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	926	10	0	1035	364	0	0	0	73	0	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			0%			0%			0%	
Total Lost time (s)		4.7			4.7	3.0				4.3	5.3	4.3
Lane Util. Factor		0.91			0.91	1.00				0.95	0.91	0.95
Frt		1.00			1.00	0.85				1.00	0.86	0.85
Flt Protected		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		5204			5085	1583				1681	1449	1504
Flt Permitted		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		5204			5085	1583				1681	1449	1504
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1029	11	0	1150	404	0	0	0	81	0	359
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	86	85
Lane Group Flow (vph)	0	1040	0	0	1150	404	0	0	0	73	98	98
Turn Type						Free				Split		Perm
Protected Phases		2			6					4	4	
Permitted Phases						Free						4
Actuated Green, G (s)		96.3			96.3	120.0				12.7	12.7	12.7
Effective Green, g (s)		97.3			97.3	120.0				13.7	12.7	13.7
Actuated g/C Ratio		0.81			0.81	1.00				0.11	0.11	0.11
Clearance Time (s)		5.7			5.7					5.3	5.3	5.3
Vehicle Extension (s)		4.3			3.9					2.0	2.0	2.0
Lane Grp Cap (vph)		4220			4123	1583				192	153	172
v/s Ratio Prot		0.20			c0.23					0.04	c0.07	
v/s Ratio Perm						0.26						0.07
v/c Ratio		0.25			0.28	0.26				0.38	0.64	0.57
Uniform Delay, d1		2.7			2.8	0.0				49.2	51.5	50.4
Progression Factor		0.91			2.75	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1			0.0	0.4				0.5	6.7	2.6
Delay (s)		2.6			7.7	0.4				49.7	58.2	52.9
Level of Service		A			A	A				D	E	D
Approach Delay (s)		2.6			5.8			0.0			54.6	
Approach LOS		A			A			A			D	

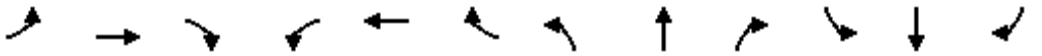
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	691	308	74	1134	318	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	0%	
Total Lost time (s)	4.7	4.7	3.0	4.7	6.3	6.3
Lane Util. Factor	0.91	1.00	1.00	0.91	0.94	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5212	1623	1770	5085	4990	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5212	1623	1770	5085	4990	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	768	342	82	1260	353	302
RTOR Reduction (vph)	0	108	0	0	0	267
Lane Group Flow (vph)	768	234	82	1260	353	35
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	81.1	81.1	8.8	93.9	13.1	13.1
Effective Green, g (s)	82.1	82.1	9.8	94.9	14.1	14.1
Actuated g/C Ratio	0.68	0.68	0.08	0.79	0.12	0.12
Clearance Time (s)	5.7	5.7	4.0	5.7	7.3	7.3
Vehicle Extension (s)	3.8	3.8	2.0	4.3	2.0	2.0
Lane Grp Cap (vph)	3566	1110	145	4021	586	327
v/s Ratio Prot	0.15		c0.05	c0.25	c0.07	
v/s Ratio Perm		0.14				0.01
v/c Ratio	0.22	0.21	0.57	0.31	0.60	0.11
Uniform Delay, d1	7.0	7.0	53.1	3.5	50.3	47.3
Progression Factor	1.69	7.31	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	3.0	0.2	1.2	0.1
Delay (s)	11.9	51.3	56.0	3.7	51.5	47.4
Level of Service	B	D	E	A	D	D
Approach Delay (s)	24.1			6.9	49.6	
Approach LOS	C			A	D	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

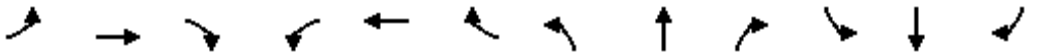
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	145	239	188	100	23	180	540	197	61	742	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-5%			0%	
Total Lost time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	81	161	266	209	111	26	200	600	219	68	824	62
RTOR Reduction (vph)	0	0	229	0	0	21	0	0	79	0	0	35
Lane Group Flow (vph)	81	161	37	209	111	5	200	600	140	68	824	27
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.1	15.4	15.4	11.2	20.9	20.9	16.8	60.3	71.5	5.7	49.2	49.2
Effective Green, g (s)	6.1	15.4	15.4	11.2	20.9	20.9	16.8	60.3	71.5	5.7	49.2	49.2
Actuated g/C Ratio	0.05	0.14	0.14	0.10	0.19	0.19	0.15	0.54	0.64	0.05	0.44	0.44
Clearance Time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	4.3	4.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	187	487	218	343	660	295	528	2806	1036	175	2234	695
v/s Ratio Prot	0.02	c0.05		c0.06	0.03		c0.06	0.12	0.01	0.02	c0.16	
v/s Ratio Perm			0.02			0.00			0.07			0.02
v/c Ratio	0.43	0.33	0.17	0.61	0.17	0.02	0.38	0.21	0.13	0.39	0.37	0.04
Uniform Delay, d1	51.3	43.6	42.6	48.3	38.3	37.2	42.9	13.5	8.0	51.5	21.0	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.5	0.5	2.1	0.2	0.0	0.2	0.2	0.0	0.5	0.5	0.1
Delay (s)	51.9	44.2	43.1	50.4	38.4	37.2	43.1	13.7	8.0	52.0	21.5	18.0
Level of Service	D	D	D	D	D	D	D	B	A	D	C	B
Approach Delay (s)		44.8			45.6			18.2			23.4	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

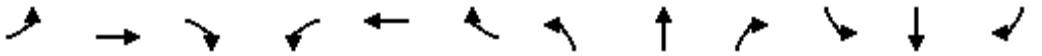


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	22	54	88	15	37	19	408	144	52	766	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1663		1770	1665		1770	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1663		1770	1665		1770	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	24	60	98	17	41	21	453	160	58	851	1
RTOR Reduction (vph)	0	55	0	0	34	0	0	0	58	0	0	0
Lane Group Flow (vph)	11	29	0	98	24	0	21	453	102	58	851	1
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	1.3	8.9		11.0	18.6		2.9	73.7	73.7	7.4	78.2	78.2
Effective Green, g (s)	2.3	10.4		12.0	20.1		3.9	76.7	76.7	8.4	81.2	81.2
Actuated g/C Ratio	0.02	0.09		0.10	0.17		0.03	0.64	0.64	0.07	0.68	0.68
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	34	144		177	279		58	3250	1012	124	2395	1071
v/s Ratio Prot	0.01	c0.02		c0.06	0.01		0.01	0.09		c0.03	c0.24	
v/s Ratio Perm									0.06			0.00
v/c Ratio	0.32	0.20		0.55	0.09		0.36	0.14	0.10	0.47	0.36	0.00
Uniform Delay, d1	58.1	50.9		51.4	42.2		56.8	8.6	8.4	53.7	8.3	6.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.6		2.1	0.1		1.4	0.1	0.2	1.0	0.2	0.0
Delay (s)	60.1	51.5		53.6	42.3		58.2	8.7	8.6	54.7	8.4	6.3
Level of Service	E	D		D	D		E	A	A	D	A	A
Approach Delay (s)		52.5			49.4			10.3			11.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	184	32	363	763	37	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	4.0	6.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	204	36	403	848	41	246
RTOR Reduction (vph)	0	26	0	0	0	105
Lane Group Flow (vph)	204	10	403	848	41	141
Turn Type		Perm	Prot			pt+ov
Protected Phases	4		3	8	2	2 3
Permitted Phases		4				
Actuated Green, G (s)	17.5	17.5	22.4	43.9	10.8	37.2
Effective Green, g (s)	17.5	17.5	22.4	43.9	10.8	37.2
Actuated g/C Ratio	0.27	0.27	0.35	0.68	0.17	0.57
Clearance Time (s)	6.0	6.0	4.0	6.0	4.0	
Vehicle Extension (s)	5.3	5.3	2.0	5.3	2.0	
Lane Grp Cap (vph)	504	428	613	1264	295	910
v/s Ratio Prot	0.11		0.23	c0.46	0.02	c0.09
v/s Ratio Perm		0.01				
v/c Ratio	0.40	0.02	0.66	0.67	0.14	0.16
Uniform Delay, d1	19.3	17.3	17.9	6.1	23.0	6.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0	1.9	1.9	0.1	0.0
Delay (s)	20.6	17.4	19.8	8.1	23.1	6.4
Level of Service	C	B	B	A	C	A
Approach Delay (s)	20.1			11.9	8.8	
Approach LOS	C			B	A	

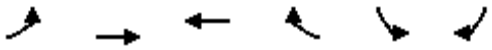
Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	278	63	0	178	314	127	15	543	130	146	593	649
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		2.0	3.7	3.7	2.0	4.0	4.0	3.0	4.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3471		1770	3471	1553	1770	3539	1583	1736	3539	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1736	3471		1770	3471	1553	1770	3539	1583	1736	3539	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	309	70	0	198	349	141	17	603	144	162	659	721
RTOR Reduction (vph)	0	0	0	0	0	118	0	0	100	0	0	142
Lane Group Flow (vph)	309	70	0	198	349	23	17	603	44	162	659	579
Heavy Vehicles (%)	4%	4%	2%	2%	4%	4%	2%	2%	2%	4%	2%	4%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	24.1	22.2		16.4	14.5	14.5	2.4	29.4	29.4	14.2	41.2	65.3
Effective Green, g (s)	25.1	25.2		18.4	16.8	16.8	4.4	31.4	31.4	15.2	43.2	69.3
Actuated g/C Ratio	0.25	0.25		0.18	0.16	0.16	0.04	0.31	0.31	0.15	0.42	0.68
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Vehicle Extension (s)	3.0	4.7		2.0	4.8	4.8	2.0	4.8	4.8	2.0	4.7	3.0
Lane Grp Cap (vph)	426	856		319	571	255	76	1087	486	258	1496	1053
v/s Ratio Prot	c0.18	0.02		0.11	c0.10		0.01	0.17		c0.09	0.19	c0.14
v/s Ratio Perm						0.01			0.03			0.23
v/c Ratio	0.73	0.08		0.62	0.61	0.09	0.22	0.55	0.09	0.63	0.44	0.55
Uniform Delay, d1	35.4	29.6		38.7	39.7	36.2	47.2	29.6	25.2	40.8	20.9	8.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	0.1		2.7	2.7	0.3	0.5	1.0	0.2	3.4	0.4	0.6
Delay (s)	41.4	29.7		41.4	42.3	36.5	47.8	30.6	25.4	44.3	21.3	9.1
Level of Service	D	C		D	D	D	D	C	C	D	C	A
Approach Delay (s)		39.3			40.9			30.0			18.0	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	102.2	Sum of lost time (s)	9.7
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

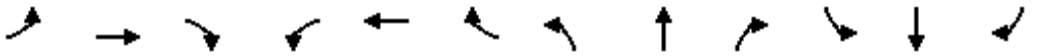
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	76	299	446	60	106	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1478	1770	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	332	496	67	118	302
RTOR Reduction (vph)	0	0	0	45	0	187
Lane Group Flow (vph)	84	332	496	22	118	115
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	10.0	27.9	13.9	13.9	8.0	18.0
Effective Green, g (s)	11.0	30.9	16.9	16.9	9.0	20.0
Actuated g/C Ratio	0.21	0.59	0.32	0.32	0.17	0.38
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	372	1099	1141	477	304	1223
v/s Ratio Prot	0.05	c0.18	c0.14		c0.07	0.02
v/s Ratio Perm				0.01		0.02
v/c Ratio	0.23	0.30	0.43	0.05	0.39	0.09
Uniform Delay, d1	17.2	5.4	14.0	12.2	19.3	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.4	0.1	0.3	0.0
Delay (s)	17.3	5.6	14.4	12.3	19.6	10.4
Level of Service	B	A	B	B	B	B
Approach Delay (s)		8.0	14.1		13.0	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	15.5
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

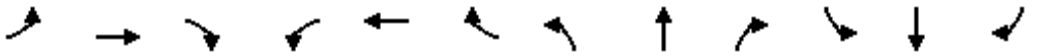
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	419	27	44	397	0	122	0	104	227	0	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0		2.0	4.0		2.0		3.0	3.7		3.7
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Frt	1.00	0.99		1.00	1.00		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	1842		1770	3539		1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	1842		1770	3539		1770		1583	1770		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	52	466	30	49	441	0	136	0	116	252	0	63
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	97	0	0	49
Lane Group Flow (vph)	52	494	0	49	441	0	136	0	19	252	0	14
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot			Prot		Free	Prot		custom	Prot		custom
Protected Phases	7	4		3	8		5			6		
Permitted Phases						Free			5			6
Actuated Green, G (s)	4.4	28.1		4.3	28.0		11.7		11.7	15.7		15.7
Effective Green, g (s)	6.4	30.1		6.3	30.0		13.7		12.7	17.7		17.7
Actuated g/C Ratio	0.08	0.38		0.08	0.38		0.17		0.16	0.22		0.22
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0		4.0	5.7		5.7
Vehicle Extension (s)	2.0	4.8		2.0	4.8		2.0		2.0	2.0		2.0
Lane Grp Cap (vph)	142	697		140	1335		305		253	394		352
v/s Ratio Prot	c0.03	c0.27		0.03	0.12		c0.08			c0.14		
v/s Ratio Perm									0.01			0.01
v/c Ratio	0.37	0.71		0.35	0.33		0.45		0.07	0.64		0.04
Uniform Delay, d1	34.6	21.0		34.7	17.6		29.5		28.4	28.0		24.2
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Incremental Delay, d2	0.6	4.0		0.6	0.3		0.4		0.0	2.5		0.0
Delay (s)	35.2	25.0		35.2	17.9		29.9		28.4	30.5		24.3
Level of Service	D	C		D	B		C		C	C		C
Approach Delay (s)		26.0			19.6			29.2			29.3	
Approach LOS		C			B			C			C	

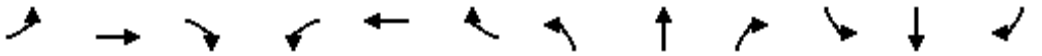
Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	7.7
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	147	517	75	91	53	229	796	45	57	966	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	103	163	574	83	101	59	254	884	50	63	1073	104
RTOR Reduction (vph)	0	0	284	0	0	47	0	0	24	0	0	0
Lane Group Flow (vph)	103	163	290	83	101	12	254	884	26	63	1073	104
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	11.4	23.9	23.9	8.9	22.4	22.4	14.1	59.6	59.6	7.6	53.1	120.0
Effective Green, g (s)	12.4	26.9	26.9	9.9	24.9	24.9	15.1	62.6	62.6	8.6	56.1	120.0
Actuated g/C Ratio	0.10	0.22	0.22	0.08	0.21	0.21	0.13	0.52	0.52	0.07	0.47	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	183	793	355	146	734	328	432	1846	826	127	2377	1583
v/s Ratio Prot	c0.06	0.05		0.05	0.03		c0.07	c0.25		0.04	0.21	
v/s Ratio Perm			c0.18			0.01			0.02			c0.07
v/c Ratio	0.56	0.21	0.82	0.57	0.14	0.04	0.59	0.48	0.03	0.50	0.45	0.07
Uniform Delay, d1	51.2	37.9	44.2	53.0	38.8	38.0	49.5	18.3	14.0	53.6	21.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.2	14.8	3.0	0.2	0.1	2.0	0.9	0.1	1.1	0.2	0.1
Delay (s)	53.6	38.1	59.0	56.0	39.0	38.1	51.6	19.2	14.0	54.7	21.8	0.1
Level of Service	D	D	E	E	D	D	D	B	B	D	C	A
Approach Delay (s)		54.3			44.6			25.9			21.6	
Approach LOS		D			D			C			C	

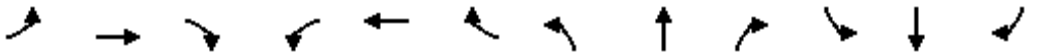
Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	0	2	0	0	0	76	630	0	0	552	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0				3.0	2.6			2.6	3.0
Lane Util. Factor	0.97		1.00				1.00	0.95			0.95	1.00
Frpb, ped/bikes	1.00		0.99				1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	3433		1562				1770	3539			3539	1548
Flt Permitted	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	3433		1562				1770	3539			3539	1548
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	0	2	0	0	0	84	700	0	0	613	133
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	4	0	2	0	0	0	84	700	0	0	613	133
Confl. Peds. (#/hr)			5									5
Turn Type	Prot		Free				Prot					Free
Protected Phases	4						5	2			6	
Permitted Phases			Free									Free
Actuated Green, G (s)	1.2		44.3				4.1	33.1			25.0	44.3
Effective Green, g (s)	2.2		44.3				5.1	36.5			28.4	44.3
Actuated g/C Ratio	0.05		1.00				0.12	0.82			0.64	1.00
Clearance Time (s)	4.0						4.0	6.0			6.0	
Vehicle Extension (s)	2.0						2.0	3.9			3.9	
Lane Grp Cap (vph)	170		1562				204	2916			2269	1548
v/s Ratio Prot	0.00						c0.05	0.20			c0.17	
v/s Ratio Perm			0.00									c0.09
v/c Ratio	0.02		0.00				0.41	0.24			0.27	0.09
Uniform Delay, d1	20.0		0.0				18.2	0.9			3.5	0.0
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	0.0		0.0				0.5	0.1			0.1	0.1
Delay (s)	20.0		0.0				18.7	0.9			3.5	0.1
Level of Service	C		A				B	A			A	A
Approach Delay (s)		13.4			0.0			2.8			2.9	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	2.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	44.3	Sum of lost time (s)	5.6
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

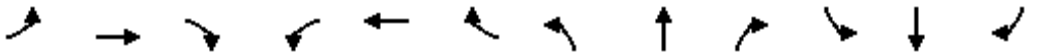
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	0	3	53	0	166	8	302	20	241	645	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0		3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.97		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.94	1.00		0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1495	3433		1562	1770	3539	1562	1770	1863	1540
Flt Permitted		0.95	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1770	1495	3433		1562	1770	3539	1562	1770	1863	1540
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	0	3	59	0	184	9	336	22	268	717	8
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	4	0	59	0	184	9	336	22	268	717	6
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	3	3		4			5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)		1.1	1.1	6.2		62.7	0.9	22.9	62.7	14.5	36.5	36.5
Effective Green, g (s)		2.1	2.1	7.2		62.7	1.9	23.9	62.7	15.5	37.5	37.5
Actuated g/C Ratio		0.03	0.03	0.11		1.00	0.03	0.38	1.00	0.25	0.60	0.60
Clearance Time (s)		4.0	4.0	4.0			4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0	2.0			2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)		59	50	394		1562	54	1349	1562	438	1114	921
v/s Ratio Prot		0.00		0.02			0.01	0.09		c0.15	c0.38	
v/s Ratio Perm			0.00			c0.12			0.01			0.00
v/c Ratio		0.07	0.00	0.15		0.12	0.17	0.25	0.01	0.61	0.64	0.01
Uniform Delay, d1		29.4	29.3	25.0		0.0	29.6	13.3	0.0	20.9	8.2	5.1
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	0.0	0.1		0.2	0.5	0.2	0.0	1.8	1.7	0.0
Delay (s)		29.5	29.3	25.1		0.2	30.2	13.5	0.0	22.7	9.9	5.1
Level of Service		C	C	C		A	C	B	A	C	A	A
Approach Delay (s)		29.4			6.2			13.1			13.3	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	3.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	8	159	20	3	1	66	192	4	3	304	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1793	1478		1778		1770	3539	1583	1770	3539	1583
Flt Permitted		0.96	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1793	1478		1778		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	9	177	22	3	1	73	213	4	3	338	24
RTOR Reduction (vph)	0	0	145	0	1	0	0	0	2	0	0	14
Lane Group Flow (vph)	0	41	32	0	25	0	73	213	2	3	338	10
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		6.1	6.1		1.7		2.4	17.4	17.4	0.5	15.5	15.5
Effective Green, g (s)		8.0	8.0		3.6		3.4	20.4	20.4	1.5	18.5	18.5
Actuated g/C Ratio		0.18	0.18		0.08		0.08	0.46	0.46	0.03	0.42	0.42
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1	2.0	4.1	4.1
Lane Grp Cap (vph)		327	269		146		137	1645	736	60	1491	667
v/s Ratio Prot		c0.02			c0.01		c0.04	0.06		0.00	c0.10	
v/s Ratio Perm			0.02						0.00			0.01
v/c Ratio		0.13	0.12		0.17		0.53	0.13	0.00	0.05	0.23	0.02
Uniform Delay, d1		15.0	15.0		18.8		19.5	6.7	6.3	20.5	8.1	7.4
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1		0.2		2.0	0.1	0.0	0.1	0.1	0.0
Delay (s)		15.1	15.1		19.0		21.5	6.7	6.3	20.6	8.2	7.4
Level of Service		B	B		B		C	A	A	C	A	A
Approach Delay (s)		15.1			19.0			10.4			8.3	
Approach LOS		B			B			B			A	

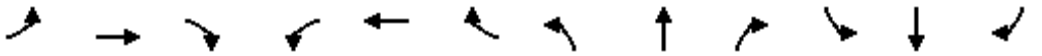
Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	10.4
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1547	53	66	753	40	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.0	3.0	3.0	3.6	3.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1719	59	73	837	44	152
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1719	59	73	837	44	152
Confl. Peds. (#/hr)			1700			
Turn Type		Free	Prot			Free
Protected Phases	4		3	8	2	
Permitted Phases		Free				Free
Actuated Green, G (s)	86.1	120.0	8.2	98.3	11.1	120.0
Effective Green, g (s)	89.1	120.0	9.2	101.3	12.1	120.0
Actuated g/C Ratio	0.74	1.00	0.08	0.84	0.10	1.00
Clearance Time (s)	6.0		4.0	6.0	4.6	
Vehicle Extension (s)	4.1		2.0	4.1	2.0	
Lane Grp Cap (vph)	3776	1583	136	4293	178	1583
v/s Ratio Prot	c0.34		c0.04	0.16	c0.02	
v/s Ratio Perm		0.04				0.10
v/c Ratio	0.46	0.04	0.54	0.19	0.25	0.10
Uniform Delay, d1	6.0	0.0	53.3	1.7	49.8	0.0
Progression Factor	1.85	1.00	0.66	0.65	1.00	1.00
Incremental Delay, d2	0.3	0.0	2.0	0.1	0.3	0.1
Delay (s)	11.4	0.0	37.4	1.2	50.0	0.1
Level of Service	B	A	D	A	D	A
Approach Delay (s)	11.1			4.1	11.3	
Approach LOS	B			A	B	

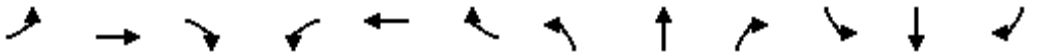
Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



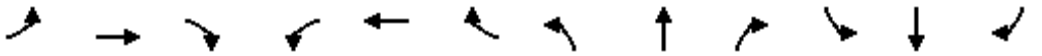
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1683	0	11	783	165	2	0	22	194	1	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.3		3.0	2.3	3.0	6.3	6.3		1.7	1.7	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00		0.91	0.91	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	1770	5085		1770	5085	1583	1770	1583		3221	1615	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	1770	5085		1770	5085	1583	1770	1583		3221	1615	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	1870	0	12	870	183	2	0	24	216	1	34
RTOR Reduction (vph)	0	0	0	0	0	0	0	23	0	0	0	0
Lane Group Flow (vph)	11	1870	0	12	870	183	2	1	0	145	72	34
Turn Type	Prot		Perm	Prot		Free	Split			Split		Free
Protected Phases	7	4		3	8		1	1		2	2	
Permitted Phases			4			Free						Free
Actuated Green, G (s)	1.5	80.5		2.9	81.9	120.0	5.4	5.4		10.2	10.2	120.0
Effective Green, g (s)	2.5	83.9		3.9	85.3	120.0	6.4	6.4		12.5	12.5	120.0
Actuated g/C Ratio	0.02	0.70		0.03	0.71	1.00	0.05	0.05		0.10	0.10	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		7.3	7.3		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	37	3555		58	3615	1583	94	84		336	168	1583
v/s Ratio Prot	c0.01	c0.37		0.01	0.17		0.00	0.00		c0.05	0.04	
v/s Ratio Perm						c0.12						0.02
v/c Ratio	0.30	0.53		0.21	0.24	0.12	0.02	0.02		0.43	0.43	0.02
Uniform Delay, d1	57.9	8.6		56.5	6.1	0.0	53.8	53.8		50.4	50.4	0.0
Progression Factor	1.03	1.37		1.12	1.01	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.1	0.5		1.7	0.0	0.1	0.1	0.1		0.9	1.8	0.0
Delay (s)	63.5	12.3		65.2	6.1	0.1	53.9	53.9		51.3	52.2	0.0
Level of Service	E	B		E	A	A	D	D		D	D	A
Approach Delay (s)		12.6			5.8			53.9			44.6	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



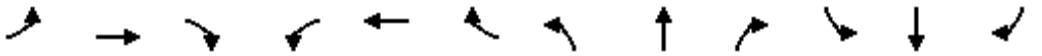
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	0	48	7	0	10	9	958	33	50	1853	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583	1681	1681	1583	1770	5085	1583	3433	5085	1583
Flt Permitted		0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1770	1583	1681	1681	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	0	53	8	0	11	10	1064	37	56	2059	6
RTOR Reduction (vph)	0	0	50	0	0	0	0	0	9	0	0	1
Lane Group Flow (vph)	0	37	3	4	4	11	10	1064	28	56	2059	5
Turn Type	Split		Perm	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	1	1		2	2		3	8		7	4	
Permitted Phases			1			Free			8			4
Actuated Green, G (s)		6.0	6.0	4.4	4.4	120.0	1.3	85.8	85.8	5.4	89.9	89.9
Effective Green, g (s)		7.0	7.0	5.4	5.4	120.0	2.3	89.2	89.2	6.4	93.3	93.3
Actuated g/C Ratio		0.06	0.06	0.05	0.05	1.00	0.02	0.74	0.74	0.05	0.78	0.78
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0	2.8	2.8		2.0	3.7	3.7	2.0	3.7	3.7
Lane Grp Cap (vph)		103	92	76	76	1583	34	3780	1177	183	3954	1231
v/s Ratio Prot		c0.02		c0.00	0.00		0.01	0.21		c0.02	c0.40	
v/s Ratio Perm			0.00			0.01			0.02			0.00
v/c Ratio		0.36	0.03	0.05	0.05	0.01	0.29	0.28	0.02	0.31	0.52	0.00
Uniform Delay, d1		54.3	53.3	54.9	54.9	0.0	58.0	5.0	4.0	54.7	5.0	3.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.04	0.70	0.76	1.13	0.25	0.25
Incremental Delay, d2		0.8	0.1	0.3	0.3	0.0	1.7	0.1	0.0	0.3	0.4	0.0
Delay (s)		55.1	53.4	55.1	55.1	0.0	62.0	3.6	3.1	62.2	1.7	0.8
Level of Service		E	D	E	E	A	E	A	A	E	A	A
Approach Delay (s)		54.1			23.2			4.1			3.3	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



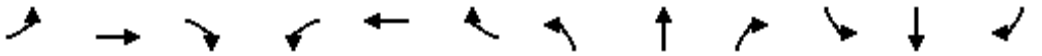
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1620	279	110	829	38	160	15	100	13	3	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1700	1583	1681	1713	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1700	1583	1681	1713	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	1800	310	122	921	42	178	17	111	14	3	7
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	9	1800	310	122	921	42	98	97	111	8	9	7
Turn Type	Prot		Free	Prot		Free	Split		Free	Split		Free
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.4	72.4	120.0	11.9	78.9	120.0	11.6	11.6	120.0	5.7	5.7	120.0
Effective Green, g (s)	6.4	75.8	120.0	12.9	82.3	120.0	12.6	12.6	120.0	6.7	6.7	120.0
Actuated g/C Ratio	0.05	0.63	1.00	0.11	0.69	1.00	0.10	0.10	1.00	0.06	0.06	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.7		2.0	3.7		2.5	2.5		3.0	3.0	
Lane Grp Cap (vph)	183	3212	1583	369	3487	1583	177	179	1583	94	96	1583
v/s Ratio Prot	0.00	c0.35		c0.04	c0.18		c0.06	0.06		0.00	0.01	
v/s Ratio Perm			c0.20			0.03			0.07			0.00
v/c Ratio	0.05	0.56	0.20	0.33	0.26	0.03	0.55	0.54	0.07	0.09	0.09	0.00
Uniform Delay, d1	53.9	12.6	0.0	49.6	7.2	0.0	51.0	51.0	0.0	53.7	53.8	0.0
Progression Factor	0.75	0.67	1.00	0.71	1.62	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.6	0.2	0.2	0.0	0.0	3.0	2.6	0.1	0.4	0.4	0.0
Delay (s)	40.5	9.1	0.2	35.5	11.8	0.0	54.0	53.6	0.1	54.1	54.2	0.0
Level of Service	D	A	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		7.9			14.0			34.3			38.4	
Approach LOS		A			B			C			D	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



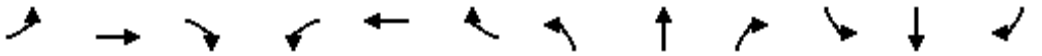
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	1072	496	75	674	480	170	276	52	537	495	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4	4.0	4.0	6.4	4.0	4.0	6.0	4.0	7.7	6.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.94	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	4990	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	4990	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	160	1191	551	83	749	533	189	307	58	597	550	137
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	160	1191	551	83	749	533	189	307	58	597	550	137
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.4	53.1	120.0	6.3	42.6	120.0	11.0	16.1	120.0	20.4	28.5	120.0
Effective Green, g (s)	14.4	53.1	120.0	6.3	42.6	120.0	11.0	16.1	120.0	20.4	28.5	120.0
Actuated g/C Ratio	0.12	0.44	1.00	0.05	0.36	1.00	0.09	0.13	1.00	0.17	0.24	1.00
Clearance Time (s)	6.4	6.4		4.0	6.4		4.0	6.0		7.7	6.7	
Vehicle Extension (s)	2.0	3.7		2.0	4.1		2.0	4.1		3.0	4.5	
Lane Grp Cap (vph)	412	2250	1583	180	1805	1583	315	682	1583	848	841	1583
v/s Ratio Prot	0.05	c0.23		0.02	0.15		c0.06	0.06		0.12	c0.16	
v/s Ratio Perm			c0.35			0.34			0.04			0.09
v/c Ratio	0.39	0.53	0.35	0.46	0.41	0.34	0.60	0.45	0.04	0.70	0.65	0.09
Uniform Delay, d1	48.7	24.4	0.0	55.2	29.3	0.0	52.4	47.9	0.0	47.0	41.3	0.0
Progression Factor	0.64	0.43	1.00	0.96	0.51	1.00	1.00	1.00	1.00	1.00	1.01	1.00
Incremental Delay, d2	0.2	0.2	0.5	0.6	0.7	0.5	2.1	0.7	0.0	2.6	2.2	0.1
Delay (s)	31.5	10.7	0.5	53.8	15.6	0.5	54.4	48.6	0.0	49.4	43.7	0.1
Level of Service	C	B	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		9.5			12.0			45.5			41.7	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	1559	4	16	1215	325	6	3	2	61	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1681	1735	1583	1681	1681	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1681	1735	1583	1681	1681	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	1732	4	18	1350	361	7	3	2	68	0	39
RTOR Reduction (vph)	0	0	1	0	0	122	0	0	2	0	0	36
Lane Group Flow (vph)	84	1732	3	18	1350	239	5	5	0	34	34	3
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	11.5	88.3	88.3	2.8	79.6	79.6	2.2	2.2	2.2	8.1	8.1	8.1
Effective Green, g (s)	11.5	88.3	88.3	2.8	79.6	79.6	2.2	2.2	2.2	8.1	8.1	8.1
Actuated g/C Ratio	0.10	0.74	0.74	0.02	0.66	0.66	0.02	0.02	0.02	0.07	0.07	0.07
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	2.0	2.0	3.6	3.6	3.6
Lane Grp Cap (vph)	170	3742	1165	41	3373	1050	31	32	29	113	113	107
v/s Ratio Prot	c0.05	c0.34		0.01	c0.27		c0.00	0.00		c0.02	0.02	
v/s Ratio Perm			0.00			0.15			0.00			0.00
v/c Ratio	0.49	0.46	0.00	0.44	0.40	0.23	0.16	0.16	0.00	0.30	0.30	0.02
Uniform Delay, d1	51.5	6.3	4.2	57.8	9.3	8.0	58.0	58.0	57.8	53.3	53.3	52.3
Progression Factor	0.92	1.37	2.05	1.09	0.47	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	0.0	2.4	0.3	0.4	0.9	0.8	0.0	1.8	1.8	0.1
Delay (s)	48.2	8.8	8.6	65.3	4.7	5.6	58.9	58.8	57.8	55.1	55.1	52.4
Level of Service	D	A	A	E	A	A	E	E	E	E	E	D
Approach Delay (s)		10.6			5.5			58.7			54.1	
Approach LOS		B			A			E			D	

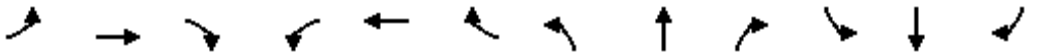
Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.6
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	1445	95	302	1103	180	352	112	228	498	120	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3485	5162	1607	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3485	5162	1607	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	82	1606	106	336	1226	200	391	124	253	553	133	83
RTOR Reduction (vph)	0	0	42	0	0	98	0	0	189	0	0	75
Lane Group Flow (vph)	82	1606	64	336	1226	102	391	124	64	553	133	8
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.8	52.0	72.9	15.8	61.0	61.0	20.9	10.8	10.8	21.4	11.3	11.3
Effective Green, g (s)	6.8	52.0	72.9	15.8	61.0	61.0	20.9	10.8	10.8	21.4	11.3	11.3
Actuated g/C Ratio	0.06	0.43	0.61	0.13	0.51	0.51	0.17	0.09	0.09	0.18	0.09	0.09
Clearance Time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.8	4.8	2.5	2.5	4.8	4.8	2.5	3.4	3.4	2.5	3.4	3.4
Lane Grp Cap (vph)	197	2237	1030	452	2585	805	598	319	142	612	333	149
v/s Ratio Prot	0.02	c0.31	0.01	c0.10	0.24		0.11	0.04		c0.16	0.04	
v/s Ratio Perm			0.03			0.06			c0.04			0.00
v/c Ratio	0.42	0.72	0.06	0.74	0.47	0.13	0.65	0.39	0.45	0.90	0.40	0.05
Uniform Delay, d1	54.7	28.0	9.6	50.1	19.1	15.5	46.2	51.5	51.8	48.3	51.2	49.5
Progression Factor	0.83	0.68	0.36	0.65	0.34	0.11	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.9	0.0	5.6	0.2	0.1	2.3	0.9	2.6	16.7	0.9	0.2
Delay (s)	46.7	20.8	3.4	37.9	6.7	1.9	48.5	52.4	54.4	65.0	52.1	49.6
Level of Service	D	C	A	D	A	A	D	D	D	E	D	D
Approach Delay (s)		20.9			12.1			51.0			61.1	
Approach LOS		C			B			D			E	

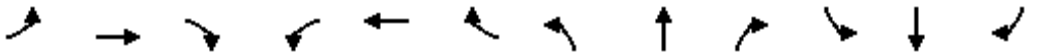
Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	306	1636	257	176	1280	43	126	191	86	17	56	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	6.7	5.7	5.7	4.0	4.6	4.6
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	1.00	1.00	1.00	1.00	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	4990	1863	1583	1770	1863	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	4990	1863	1583	1770	1863	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	340	1818	286	196	1422	48	140	212	96	19	62	136
RTOR Reduction (vph)	0	0	87	0	0	24	0	0	79	0	0	126
Lane Group Flow (vph)	340	1818	199	196	1422	24	140	212	17	19	62	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.6	65.3	65.3	11.2	60.9	60.9	13.8	20.9	20.9	2.9	8.4	8.4
Effective Green, g (s)	15.6	65.3	65.3	11.2	60.9	60.9	13.8	20.9	20.9	2.9	8.4	8.4
Actuated g/C Ratio	0.13	0.54	0.54	0.09	0.51	0.51	0.12	0.17	0.17	0.02	0.07	0.07
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	6.7	5.7	5.7	4.0	4.6	4.6
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.3	4.3	2.0	2.0	2.0
Lane Grp Cap (vph)	446	2767	861	320	2581	803	574	324	276	43	130	195
v/s Ratio Prot	c0.10	c0.36		0.06	0.28		0.03	c0.11		0.01	c0.03	
v/s Ratio Perm			0.13			0.02			0.01			0.00
v/c Ratio	0.76	0.66	0.23	0.61	0.55	0.03	0.24	0.65	0.06	0.44	0.48	0.05
Uniform Delay, d1	50.4	19.4	14.3	52.3	20.2	14.8	48.3	46.2	41.4	57.8	53.7	52.1
Progression Factor	1.33	0.29	0.08	1.15	0.60	0.34	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	0.8	0.4	2.2	0.3	0.0	0.1	5.5	0.1	2.6	1.0	0.0
Delay (s)	71.5	6.4	1.6	62.6	12.5	5.0	48.4	51.7	41.5	60.4	54.7	52.1
Level of Service	E	A	A	E	B	A	D	D	D	E	D	D
Approach Delay (s)		14.9			18.2			48.5			53.6	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

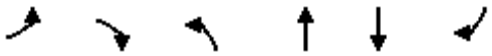


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	330	1386	4	9	1051	90	1	0	0	97	0	554
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	4.0			6.0	6.0	6.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00			0.95	0.95	0.88
Frt	1.00	1.00		1.00	1.00	0.85	1.00			1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95			0.95	0.95	1.00
Satd. Flow (prot)	3433	5083		1770	5085	1583	1770			1681	1681	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95			0.95	0.95	1.00
Satd. Flow (perm)	3433	5083		1770	5085	1583	1770			1681	1681	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	367	1540	4	10	1168	100	1	0	0	108	0	616
RTOR Reduction (vph)	0	0	0	0	0	45	0	0	0	0	0	569
Lane Group Flow (vph)	367	1544	0	10	1168	55	1	0	0	54	54	47
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	21.2	86.4		1.3	66.5	66.5	2.8			9.1	9.1	9.1
Effective Green, g (s)	21.2	86.4		1.3	66.5	66.5	2.8			9.1	9.1	9.1
Actuated g/C Ratio	0.18	0.72		0.01	0.55	0.55	0.02			0.08	0.08	0.08
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	4.0			6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.7		2.0	3.7	3.7	2.0			2.0	2.0	2.0
Lane Grp Cap (vph)	606	3660		19	2818	877	41			127	127	211
v/s Ratio Prot	c0.11	c0.30		0.01	c0.23		c0.00			c0.03	0.03	
v/s Ratio Perm						0.04						0.02
v/c Ratio	0.61	0.42		0.53	0.41	0.06	0.02			0.43	0.43	0.22
Uniform Delay, d1	45.5	6.8		59.0	15.5	12.4	57.3			53.0	53.0	52.1
Progression Factor	0.56	0.39		1.27	0.68	0.31	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1		11.3	0.4	0.1	0.1			0.8	0.8	0.2
Delay (s)	26.5	2.7		86.5	11.0	4.0	57.4			53.8	53.8	52.3
Level of Service	C	A		F	B	A	E			D	D	D
Approach Delay (s)		7.3			11.0			57.4			52.5	
Approach LOS		A			B			E			D	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

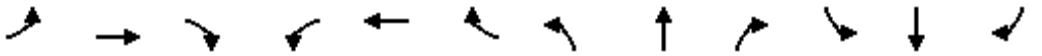
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	110	97	995	59	56	1417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	108	1106	66	62	1574
RTOR Reduction (vph)	0	95	0	21	0	0
Lane Group Flow (vph)	122	13	1106	45	62	1574
Turn Type		Perm		Perm	Prot	
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	14.3	14.3	82.0	82.0	7.6	93.6
Effective Green, g (s)	14.3	14.3	82.0	82.0	7.6	93.6
Actuated g/C Ratio	0.12	0.12	0.68	0.68	0.06	0.78
Clearance Time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Vehicle Extension (s)	2.5	2.5	3.5	3.5	2.0	3.7
Lane Grp Cap (vph)	211	189	3475	1082	112	3966
v/s Ratio Prot	c0.07		0.22		c0.04	c0.31
v/s Ratio Perm		0.01		0.03		
v/c Ratio	0.58	0.07	0.32	0.04	0.55	0.40
Uniform Delay, d1	50.0	46.9	7.7	6.2	54.6	4.2
Progression Factor	1.00	1.00	0.84	0.51	0.89	1.98
Incremental Delay, d2	3.1	0.1	0.2	0.1	3.1	0.3
Delay (s)	53.1	47.0	6.7	3.2	51.6	8.6
Level of Service	D	D	A	A	D	A
Approach Delay (s)	50.3		6.5			10.2
Approach LOS	D		A			B

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



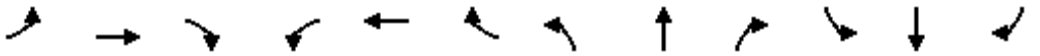
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	114	39	107	942	1282	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	5085	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	127	43	119	1047	1424	248
RTOR Reduction (vph)	0	39	0	0	0	62
Lane Group Flow (vph)	127	4	119	1047	1424	186
Turn Type		Perm	Prot			Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Actuated Green, G (s)	11.4	11.4	14.2	97.2	78.7	78.7
Effective Green, g (s)	11.4	11.4	14.2	97.2	78.7	78.7
Actuated g/C Ratio	0.10	0.10	0.12	0.81	0.66	0.66
Clearance Time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.1	4.1	4.1
Lane Grp Cap (vph)	326	150	209	4119	3335	1038
v/s Ratio Prot	c0.04		c0.07	0.21	c0.28	
v/s Ratio Perm		0.00				0.12
v/c Ratio	0.39	0.03	0.57	0.25	0.43	0.18
Uniform Delay, d1	51.0	49.3	50.0	2.7	9.9	8.1
Progression Factor	1.00	1.00	1.00	1.00	0.41	0.24
Incremental Delay, d2	0.3	0.0	2.1	0.1	0.4	0.4
Delay (s)	51.3	49.3	52.1	2.9	4.4	2.3
Level of Service	D	D	D	A	A	A
Approach Delay (s)	50.8			7.9	4.1	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



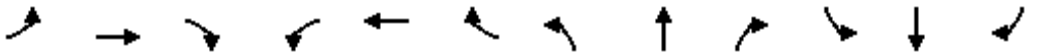
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	5	113	6	30	0	109	1016	6	7	1216	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	6	126	7	33	0	121	1129	7	8	1351	102
RTOR Reduction (vph)	0	0	114	0	0	0	0	0	2	0	0	26
Lane Group Flow (vph)	19	6	12	7	33	0	121	1129	5	8	1351	76
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	2.9	12.4	12.4	1.3	12.8		13.2	95.3	95.3	1.3	83.4	83.4
Effective Green, g (s)	2.9	12.4	12.4	1.3	12.8		13.2	95.3	95.3	1.3	83.4	83.4
Actuated g/C Ratio	0.02	0.10	0.10	0.01	0.10		0.10	0.73	0.73	0.01	0.64	0.64
Clearance Time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	2.5		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	39	178	151	18	183		180	3728	1160	18	3262	1016
v/s Ratio Prot	c0.01	0.00		0.00	c0.02		c0.07	0.22		0.00	c0.27	
v/s Ratio Perm			0.01						0.00			0.05
v/c Ratio	0.49	0.03	0.08	0.39	0.18		0.67	0.30	0.00	0.44	0.41	0.07
Uniform Delay, d1	62.8	53.4	53.6	64.0	53.8		56.3	6.0	4.6	64.0	11.4	8.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.1	0.3	5.0	0.3		7.5	0.2	0.0	6.2	0.1	0.1
Delay (s)	66.3	53.5	53.9	69.0	54.1		63.8	6.2	4.7	70.2	11.5	8.8
Level of Service	E	D	D	E	D		E	A	A	E	B	A
Approach Delay (s)		55.4			56.7			11.7			11.7	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



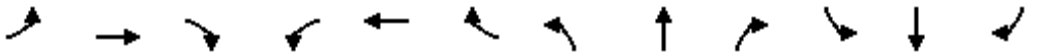
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	7	14	128	232	179	25	944	105	95	1232	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00		1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1676		1770	3539	1583	1770	5085	1583	1770	5060	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1676		1770	3539	1583	1770	5085	1583	1770	5060	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	8	16	142	258	199	28	1049	117	106	1369	47
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	12	9	0	142	258	199	28	1049	117	106	1414	0
Turn Type	Prot			Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						Free			Free			
Actuated Green, G (s)	2.6	8.1		15.7	20.4	120.0	4.5	66.0	120.0	11.6	73.1	
Effective Green, g (s)	2.6	8.1		15.7	20.4	120.0	4.5	66.0	120.0	11.6	73.1	
Actuated g/C Ratio	0.02	0.07		0.13	0.17	1.00	0.04	0.55	1.00	0.10	0.61	
Clearance Time (s)	4.0	4.9		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	5.6		2.0	4.3		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	38	113		232	602	1583	66	2797	1583	171	3082	
v/s Ratio Prot	0.01	0.01		c0.08	c0.07		0.02	0.21		c0.06	c0.28	
v/s Ratio Perm						0.13			0.07			
v/c Ratio	0.32	0.08		0.61	0.43	0.13	0.42	0.38	0.07	0.62	0.46	
Uniform Delay, d1	57.8	52.5		49.3	44.6	0.0	56.5	15.3	0.0	52.1	12.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.05	0.57	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.8		3.3	0.8	0.2	1.3	0.1	0.1	4.6	0.5	
Delay (s)	59.6	53.2		52.6	45.4	0.2	60.6	8.9	0.1	56.7	13.2	
Level of Service	E	D		D	D	A	E	A	A	E	B	
Approach Delay (s)		55.3			32.1			9.2			16.2	
Approach LOS		E			C			A			B	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



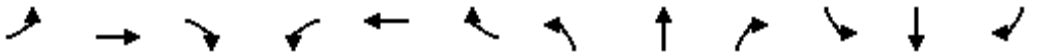
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	951	71	38	1201	543	125	486	47	560	516	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	5.7	5.7	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	86	1057	79	42	1334	603	139	540	52	622	573	148
RTOR Reduction (vph)	0	0	46	0	0	0	0	0	43	0	0	0
Lane Group Flow (vph)	86	1057	33	42	1334	603	139	540	9	622	573	148
Turn Type	Prot		Perm	Prot		Free	Prot		Perm	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			8			Free
Actuated Green, G (s)	6.4	50.5	50.5	5.0	49.1	120.0	13.1	20.3	20.3	24.5	31.7	120.0
Effective Green, g (s)	6.4	50.5	50.5	5.0	49.1	120.0	13.1	20.3	20.3	24.5	31.7	120.0
Actuated g/C Ratio	0.05	0.42	0.42	0.04	0.41	1.00	0.11	0.17	0.17	0.20	0.26	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	3.9	3.9	2.0	3.9		2.0	4.3	4.3	2.0	4.3	
Lane Grp Cap (vph)	183	2140	666	143	2081	1583	193	599	268	701	935	1583
v/s Ratio Prot	0.03	0.21		0.01	c0.26		0.08	c0.15		c0.18	0.16	
v/s Ratio Perm			0.02			c0.38			0.01			0.09
v/c Ratio	0.47	0.49	0.05	0.29	0.64	0.38	0.72	0.90	0.03	0.89	0.61	0.09
Uniform Delay, d1	55.2	25.4	20.6	55.8	28.4	0.0	51.7	48.9	41.6	46.4	38.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.78	1.00
Incremental Delay, d2	0.7	0.8	0.1	0.4	0.8	0.7	10.6	17.3	0.1	11.8	1.4	0.1
Delay (s)	55.8	26.2	20.7	56.2	29.1	0.7	62.3	66.1	41.7	49.9	31.5	0.1
Level of Service	E	C	C	E	C	A	E	E	D	D	C	A
Approach Delay (s)		28.0			21.1			63.7			36.5	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	0	24	31	0	76	25	509	11	13	572	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1770	1583	1770	3528		1770	3531	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1770	1583	1770	3528		1770	3531	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	0	27	34	0	84	28	566	12	14	636	10
RTOR Reduction (vph)	0	0	24	0	0	67	0	1	0	0	1	0
Lane Group Flow (vph)	0	42	3	0	34	17	28	577	0	14	645	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		5.1	5.1		12.2	12.2	2.2	29.5		0.8	28.1	
Effective Green, g (s)		6.1	6.1		13.2	13.2	3.2	32.5		1.8	31.1	
Actuated g/C Ratio		0.09	0.09		0.20	0.20	0.05	0.50		0.03	0.48	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		165	148		358	320	87	1756		49	1682	
v/s Ratio Prot		c0.02			c0.02		c0.02	0.16		0.01	c0.18	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.25	0.02		0.09	0.05	0.32	0.33		0.29	0.38	
Uniform Delay, d1		27.5	26.9		21.2	21.0	30.0	9.8		31.1	11.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.0	0.0	0.8	0.2		1.2	0.3	
Delay (s)		27.8	26.9		21.2	21.0	30.8	10.0		32.3	11.2	
Level of Service		C	C		C	C	C	B		C	B	
Approach Delay (s)		27.4			21.1			11.0			11.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	11.7
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

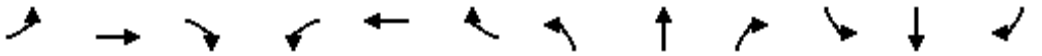


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	177	236	43	243	80	442	497	38	98	459	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1485	1856	3592	1477	3601	3592	1477	1837	3556	1460
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1485	1856	3592	1477	3601	3592	1477	1837	3556	1460
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	197	262	48	270	89	491	552	42	109	510	20
RTOR Reduction (vph)	0	0	132	0	0	65	0	0	25	0	0	14
Lane Group Flow (vph)	26	197	130	48	270	24	491	552	17	109	510	6
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	3.1	15.7	31.6	5.1	17.7	17.7	15.9	26.9	26.9	8.1	19.1	19.1
Effective Green, g (s)	4.1	18.7	33.6	6.1	20.7	20.7	16.9	29.9	29.9	9.1	22.1	22.1
Actuated g/C Ratio	0.05	0.25	0.45	0.08	0.28	0.28	0.22	0.40	0.40	0.12	0.29	0.29
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	101	893	664	151	989	407	809	1428	587	222	1045	429
v/s Ratio Prot	0.01	0.05	0.04	c0.03	c0.08		c0.14	0.15		0.06	c0.14	
v/s Ratio Perm			0.04			0.02			0.01			0.00
v/c Ratio	0.26	0.22	0.20	0.32	0.27	0.06	0.61	0.39	0.03	0.49	0.49	0.01
Uniform Delay, d1	34.1	22.5	12.6	32.6	21.4	20.1	26.2	16.1	13.8	30.9	21.9	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.1	0.4	0.3	0.1	0.9	0.3	0.0	0.6	0.6	0.0
Delay (s)	34.6	22.7	12.7	33.0	21.6	20.2	27.1	16.4	13.8	31.5	22.5	18.8
Level of Service	C	C	B	C	C	C	C	B	B	C	C	B
Approach Delay (s)		17.9			22.6			21.1			23.9	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	8.7
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	690	31	36	837	90	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	1.3	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3517		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3517		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	767	34	40	930	100	104
RTOR Reduction (vph)	3	0	0	0	0	81
Lane Group Flow (vph)	798	0	40	930	100	23
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	25.5		2.5	33.7	10.6	10.6
Effective Green, g (s)	28.2		3.5	36.4	11.6	11.6
Actuated g/C Ratio	0.54		0.07	0.70	0.22	0.22
Clearance Time (s)	5.7		4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1896		118	2463	393	351
v/s Ratio Prot	c0.23		0.02	c0.26	c0.06	
v/s Ratio Perm						0.01
v/c Ratio	0.42		0.34	0.38	0.25	0.07
Uniform Delay, d1	7.2		23.3	3.3	16.8	16.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3		0.6	0.2	0.1	0.0
Delay (s)	7.4		23.9	3.4	16.9	16.1
Level of Service	A		C	A	B	B
Approach Delay (s)	7.4			4.3	16.5	
Approach LOS	A			A	B	

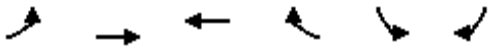
Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	52.3	Sum of lost time (s)	7.3
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	145	532	59	324	135	262	875	21	94	693	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1562	1770	3539	1562	3433	3539	1562	1770	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1562	1770	3539	1562	3433	3539	1562	1770	3539	1562
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	53	161	591	66	360	150	291	972	23	104	770	27
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	53	161	591	66	360	150	291	972	23	104	770	27
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	7.8	17.6	120.0	8.6	18.8	120.0	14.6	62.6	120.0	11.5	59.5	120.0
Effective Green, g (s)	8.8	20.3	120.0	9.6	21.5	120.0	15.6	65.6	120.0	12.5	62.5	120.0
Actuated g/C Ratio	0.07	0.17	1.00	0.08	0.18	1.00	0.13	0.55	1.00	0.10	0.52	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	130	599	1562	142	634	1562	446	1935	1562	184	1843	1562
v/s Ratio Prot	0.03	0.05		0.04	c0.10		c0.08	c0.27		c0.06	0.22	
v/s Ratio Perm			c0.38			0.10			0.01			0.02
v/c Ratio	0.41	0.27	0.38	0.46	0.57	0.10	0.65	0.50	0.01	0.57	0.42	0.02
Uniform Delay, d1	53.1	43.4	0.0	52.7	45.0	0.0	49.6	17.0	0.0	51.2	17.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.4	0.7	0.9	1.7	0.1	2.6	0.9	0.0	2.4	0.2	0.0
Delay (s)	53.9	43.8	0.7	53.6	46.7	0.1	52.2	17.9	0.0	53.5	17.8	0.0
Level of Service	D	D	A	D	D	A	D	B	A	D	B	A
Approach Delay (s)		12.8			35.3			25.4			21.4	
Approach LOS		B			D			C			C	

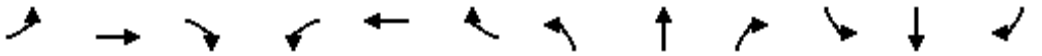
Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	162	429	388	146	315	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1511	1736	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1511	1736	1538
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	180	477	431	162	350	197
RTOR Reduction (vph)	0	0	0	103	0	90
Lane Group Flow (vph)	180	477	431	59	350	107
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	11.3	25.3	21.9	21.9	18.6	29.9
Effective Green, g (s)	12.3	27.3	23.9	23.9	21.6	35.9
Actuated g/C Ratio	0.19	0.41	0.36	0.36	0.33	0.54
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	323	1434	1255	546	567	835
v/s Ratio Prot	c0.10	c0.14	0.12		c0.20	0.03
v/s Ratio Perm				0.04		0.04
v/c Ratio	0.56	0.33	0.34	0.11	0.62	0.13
Uniform Delay, d1	24.4	13.2	15.4	14.0	18.8	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.2	0.1	1.4	0.0
Delay (s)	25.6	13.3	15.5	14.1	20.2	7.4
Level of Service	C	B	B	B	C	A
Approach Delay (s)		16.7	15.2		15.6	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	4.6
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	682	8	3	500	179	8	1	14	146	6	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3433		1787	3438	1487	1787	1616			1695	1470
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3433		1787	3438	1487	1787	1616			1695	1470
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	46	758	9	3	556	199	9	1	16	162	7	59
RTOR Reduction (vph)	0	1	0	0	0	123	0	14	0	0	0	0
Lane Group Flow (vph)	46	766	0	3	556	76	9	3	0	0	169	59
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	3.6	23.9		0.7	21.0	21.0	5.2	5.2			12.9	12.9
Effective Green, g (s)	4.6	25.9		1.7	23.0	23.0	6.2	6.2			13.9	13.9
Actuated g/C Ratio	0.08	0.43		0.03	0.38	0.38	0.10	0.10			0.23	0.23
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	131	1472		50	1309	566	183	166			390	338
v/s Ratio Prot	c0.03	c0.22		0.00	0.16		c0.01	0.00			c0.10	
v/s Ratio Perm						0.05						0.04
v/c Ratio	0.35	0.52		0.06	0.42	0.13	0.05	0.02			0.43	0.17
Uniform Delay, d1	26.5	12.7		28.6	13.8	12.2	24.4	24.4			19.9	18.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.6	0.3		0.2	0.2	0.1	0.0	0.0			0.8	0.2
Delay (s)	27.1	13.0		28.8	14.0	12.3	24.5	24.4			20.7	18.9
Level of Service	C	B		C	B	B	C	C			C	B
Approach Delay (s)		13.8			13.6			24.4			20.2	
Approach LOS		B			B			C			C	

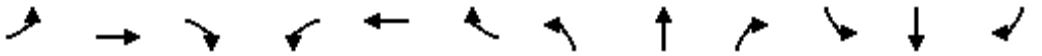
Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	60.4	Sum of lost time (s)	12.7
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	687	189	200	554	136	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1565	1770	3539	1770	1573
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1565	1770	3539	1770	1573
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	763	210	222	616	151	217
RTOR Reduction (vph)	0	99	0	0	0	11
Lane Group Flow (vph)	763	111	222	616	151	206
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	19.6	29.6	16.4	40.0	10.0	26.4
Effective Green, g (s)	21.6	31.6	17.4	42.0	11.0	28.4
Actuated g/C Ratio	0.36	0.53	0.29	0.70	0.18	0.47
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1274	902	513	2477	325	823
v/s Ratio Prot	c0.22	0.02	c0.13	0.17	c0.09	0.07
v/s Ratio Perm		0.05				0.06
v/c Ratio	0.60	0.12	0.43	0.25	0.46	0.25
Uniform Delay, d1	15.7	7.2	17.3	3.3	21.9	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.0	0.2	0.2	0.4	0.1
Delay (s)	16.4	7.2	17.5	3.5	22.3	9.5
Level of Service	B	A	B	A	C	A
Approach Delay (s)	14.4			7.2	14.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

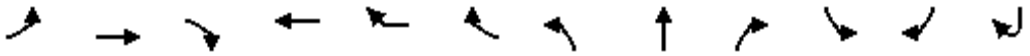
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	692	266	460	401	0	0	0	941	0	0	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	4.0	4.0				4.0			4.0
Lane Util. Factor		0.91	1.00	0.97	0.95				1.00			1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00				1.00			1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00				1.00			1.00
Frt		1.00	0.85	1.00	1.00				0.86			0.86
Flt Protected		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (prot)		5085	1554	3433	3539				1611			1611
Flt Permitted		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (perm)		5085	1554	3433	3539				1611			1611
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	769	296	511	446	0	0	0	1046	0	0	392
RTOR Reduction (vph)	0	0	90	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	769	206	511	446	0	0	0	1046	0	0	392
Confl. Peds. (#/hr)			5									
Turn Type			Perm	Prot					Free			Free
Protected Phases		2		1	6							
Permitted Phases			2						Free			Free
Actuated Green, G (s)		36.8	36.8	13.5	60.0				60.0			60.0
Effective Green, g (s)		36.8	36.8	13.5	60.0				60.0			60.0
Actuated g/C Ratio		0.61	0.61	0.22	1.00				1.00			1.00
Clearance Time (s)		5.7	5.7	4.0	4.0							
Vehicle Extension (s)		3.4	3.4	2.0	3.0							
Lane Grp Cap (vph)		3119	953	772	3539				1611			1611
v/s Ratio Prot		0.15		0.15	0.13							
v/s Ratio Perm			0.13						c0.65			0.24
v/c Ratio		0.25	0.22	0.66	0.13				0.65			0.24
Uniform Delay, d1		5.3	5.2	21.2	0.0				0.0			0.0
Progression Factor		2.20	4.75	1.00	1.00				1.00			1.00
Incremental Delay, d2		0.2	0.5	1.7	0.0				2.0			0.4
Delay (s)		11.8	25.0	22.8	0.0				2.0			0.4
Level of Service		B	C	C	A				A			A
Approach Delay (s)		15.5			12.2			2.0			0.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

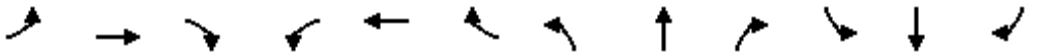
c Critical Lane Group



Movement	EBL	EBT	EBR	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL	SBR	SBR2
Lane Configurations												
Volume (vph)	146	1278	209	392	438	68	169	539	657	144	300	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	5.7	5.7	5.7	4.0	5.3	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	0.86	0.86	1.00	1.00	0.95	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	0.99	0.98	1.00	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	0.95	0.85	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1548	4519	1338	1583	1770	3539	1562	3433	1583	
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1548	4519	1338	1583	1770	3539	1562	3433	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	162	1420	232	436	487	76	188	599	730	160	333	59
RTOR Reduction (vph)	0	0	0	0	0	44	0	0	0	0	6	0
Lane Group Flow (vph)	162	1420	232	680	243	32	188	599	730	160	386	0
Confl. Peds. (#/hr)			5		5				5		5	
Turn Type	Prot		Free		Perm	Perm	Prot		Free	Prot	custom	
Protected Phases	5	2		6			3	8		7	4 5	
Permitted Phases			Free		6	6			Free			
Actuated Green, G (s)	10.4	68.9	130.0	54.5	54.5	54.5	18.5	34.9	130.0	11.2	43.3	
Effective Green, g (s)	10.4	68.9	130.0	54.5	54.5	54.5	18.5	34.9	130.0	11.2	43.3	
Actuated g/C Ratio	0.08	0.53	1.00	0.42	0.42	0.42	0.14	0.27	1.00	0.09	0.33	
Clearance Time (s)	4.0	5.7		5.7	5.7	5.7	4.0	5.3		4.0		
Vehicle Extension (s)	2.0	3.4		3.4	3.4	3.4	4.0	4.0		2.0		
Lane Grp Cap (vph)	275	1876	1548	1895	561	664	252	950	1562	296	527	
v/s Ratio Prot	0.05	c0.40		0.15			c0.11	0.17		0.05	c0.24	
v/s Ratio Perm			0.15		0.18	0.02			0.47			
v/c Ratio	0.59	0.76	0.15	0.36	0.43	0.05	0.75	0.63	0.47	0.54	0.73	
Uniform Delay, d1	57.7	24.0	0.0	25.8	26.8	22.4	53.5	41.9	0.0	56.9	38.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	2.9	0.2	0.1	0.6	0.0	12.1	1.5	1.0	1.1	4.5	
Delay (s)	59.8	26.9	0.2	25.9	27.4	22.4	65.6	43.4	1.0	58.0	42.7	
Level of Service	E	C	A	C	C	C	E	D	A	E	D	
Approach Delay (s)		26.4		26.0				25.8				
Approach LOS		C		C				C				

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

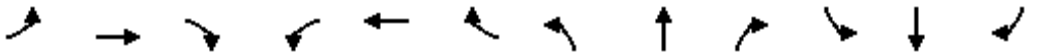
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	223	1430	344	50	670	59	94	151	54	84	228	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.3	4.0	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.94	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	6408	1562	4990	3539	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	6408	1562	4990	3539	1562	3433	5085	1562
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	248	1589	382	56	744	66	104	168	60	93	253	197
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	248	1589	382	56	744	66	104	168	60	93	253	197
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.8	70.5	120.0	7.2	63.9	120.0	10.0	13.3	120.0	10.0	12.9	120.0
Effective Green, g (s)	13.8	70.5	120.0	7.2	63.9	120.0	10.0	13.3	120.0	10.0	12.9	120.0
Actuated g/C Ratio	0.12	0.59	1.00	0.06	0.53	1.00	0.08	0.11	1.00	0.08	0.11	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	3.9		2.0	3.5	
Lane Grp Cap (vph)	395	2987	1562	206	3412	1562	416	392	1562	286	547	1562
v/s Ratio Prot	c0.07	c0.31		0.02	0.12		0.02	c0.05		0.03	c0.05	
v/s Ratio Perm			c0.24			0.04			0.04			0.13
v/c Ratio	0.63	0.53	0.24	0.27	0.22	0.04	0.25	0.43	0.04	0.33	0.46	0.13
Uniform Delay, d1	50.7	14.9	0.0	53.9	14.8	0.0	51.5	49.8	0.0	51.8	50.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.2	0.4	0.3	0.1	0.1	0.1	1.0	0.0	0.2	0.7	0.2
Delay (s)	52.9	15.1	0.4	54.2	15.0	0.1	51.6	50.8	0.0	52.1	51.0	0.2
Level of Service	D	B	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		16.8			16.4			41.9			32.8	
Approach LOS		B			B			D			C	

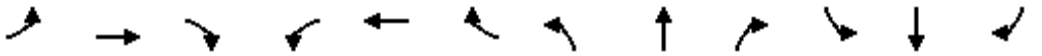
Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.4
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



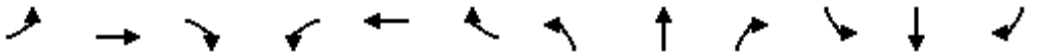
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1184	193	33	570	19	146	154	4	37	181	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	3.2	3.0	3.0	3.5	3.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	89	1316	214	37	633	21	162	171	4	41	201	64
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	89	1316	214	37	633	21	162	171	4	41	201	64
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.3	65.9	120.0	5.0	60.6	120.0	15.2	23.4	120.0	6.3	14.2	120.0
Effective Green, g (s)	11.3	68.4	120.0	6.0	63.1	120.0	16.2	25.9	120.0	7.3	16.7	120.0
Actuated g/C Ratio	0.09	0.57	1.00	0.05	0.53	1.00	0.13	0.22	1.00	0.06	0.14	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	4.3		2.0	4.3		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	167	2898	1583	89	2674	1583	239	764	1583	108	493	1583
v/s Ratio Prot	c0.05	c0.26		c0.02	0.12		c0.09	0.05		0.02	c0.06	
v/s Ratio Perm			0.14			0.01			0.00			0.04
v/c Ratio	0.53	0.45	0.14	0.42	0.24	0.01	0.68	0.22	0.00	0.38	0.41	0.04
Uniform Delay, d1	51.8	15.0	0.0	55.3	15.4	0.0	49.4	38.8	0.0	54.2	47.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.5	0.2	1.1	0.1	0.0	5.9	0.2	0.0	0.8	0.7	0.0
Delay (s)	53.5	15.5	0.2	56.4	15.5	0.0	55.3	39.0	0.0	55.0	47.9	0.0
Level of Service	D	B	A	E	B	A	E	D	A	D	D	A
Approach Delay (s)		15.5			17.2			46.4			38.8	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



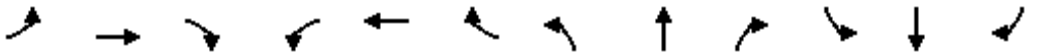
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	64	81	65	73	48	91	533	44	120	873	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	71	90	72	81	53	101	592	49	133	970	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	39	71	90	72	81	53	101	592	49	133	970	22
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.0	9.1	120.0	8.2	12.3	120.0	11.2	69.4	120.0	13.2	71.4	120.0
Effective Green, g (s)	6.0	11.6	120.0	9.2	14.8	120.0	12.2	71.9	120.0	14.2	73.9	120.0
Actuated g/C Ratio	0.05	0.10	1.00	0.08	0.12	1.00	0.10	0.60	1.00	0.12	0.62	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	89	342	1583	136	436	1583	180	3047	1583	209	3132	1583
v/s Ratio Prot	0.02	0.02		c0.04	c0.02		c0.06	0.12		c0.08	c0.19	
v/s Ratio Perm			0.06			0.03			0.03			0.01
v/c Ratio	0.44	0.21	0.06	0.53	0.19	0.03	0.56	0.19	0.03	0.64	0.31	0.01
Uniform Delay, d1	55.4	50.0	0.0	53.3	47.2	0.0	51.3	10.9	0.0	50.4	10.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.4	0.1	1.7	0.3	0.0	2.4	0.1	0.0	4.6	0.1	0.0
Delay (s)	56.6	50.3	0.1	55.0	47.5	0.0	53.7	11.1	0.0	55.0	11.0	0.0
Level of Service	E	D	A	E	D	A	D	B	A	E	B	A
Approach Delay (s)		28.9			37.9			16.1			16.0	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



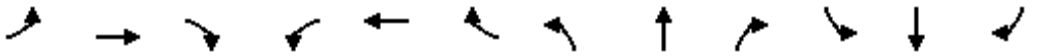
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	1061	432	44	908	333	317	354	24	351	309	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	233	1179	480	49	1009	370	352	393	27	390	343	97
RTOR Reduction (vph)	0	0	203	0	0	0	0	0	23	0	0	0
Lane Group Flow (vph)	233	1179	277	49	1009	370	352	393	4	390	343	97
Turn Type	Prot		Perm	Prot		Free	Prot		Perm	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			8			Free
Actuated Green, G (s)	16.2	59.1	59.1	5.2	48.1	120.0	18.7	17.8	17.8	17.9	17.0	120.0
Effective Green, g (s)	16.2	59.1	59.1	5.2	48.1	120.0	18.7	17.8	17.8	17.9	17.0	120.0
Actuated g/C Ratio	0.13	0.49	0.49	0.04	0.40	1.00	0.16	0.15	0.15	0.15	0.14	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3		2.0	3.9	3.9	2.0	3.9	
Lane Grp Cap (vph)	463	2504	780	149	2038	1583	535	525	235	512	501	1583
v/s Ratio Prot	c0.07	0.23		0.01	c0.20		0.10	c0.11		c0.11	0.10	
v/s Ratio Perm			0.17			c0.23			0.00			0.06
v/c Ratio	0.50	0.47	0.36	0.33	0.50	0.23	0.66	0.75	0.02	0.76	0.68	0.06
Uniform Delay, d1	48.2	20.1	18.7	55.7	26.9	0.0	47.6	49.0	43.6	49.0	49.0	0.0
Progression Factor	0.65	0.54	0.40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.2	0.4	0.5	0.9	0.3	2.2	6.1	0.0	6.0	4.1	0.1
Delay (s)	31.4	11.0	8.0	56.2	27.7	0.3	49.9	55.1	43.7	55.0	53.1	0.1
Level of Service	C	B	A	E	C	A	D	E	D	D	D	A
Approach Delay (s)		12.7			21.6			52.3			47.8	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



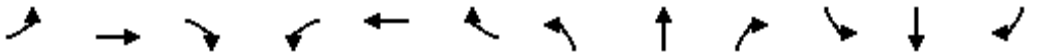
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	381	4	6	705	13	7	0	2	25	5	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7		3.0	4.7		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00		1.00	0.85			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.96	1.00
Satd. Flow (prot)	1770	3534		1770	3530		1770	1583			1789	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.96	1.00
Satd. Flow (perm)	1770	3534		1770	3530		1770	1583			1789	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	31	423	4	7	783	14	8	0	2	28	6	86
RTOR Reduction (vph)	0	0	0	0	1	0	0	2	0	0	0	72
Lane Group Flow (vph)	31	427	0	7	796	0	8	0	0	0	34	14
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	2.3	31.5		0.8	30.0		1.2	1.2			9.0	9.0
Effective Green, g (s)	3.3	32.5		1.8	31.0		2.2	2.2			10.0	10.0
Actuated g/C Ratio	0.05	0.54		0.03	0.51		0.04	0.04			0.17	0.17
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	97	1908		53	1818		65	58			297	263
v/s Ratio Prot	c0.02	0.12		0.00	c0.23		c0.00	0.00			c0.02	
v/s Ratio Perm												0.01
v/c Ratio	0.32	0.22		0.13	0.44		0.12	0.00			0.11	0.05
Uniform Delay, d1	27.4	7.2		28.4	9.1		28.1	27.9			21.3	21.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.7	0.1		0.4	0.3		0.3	0.0			0.1	0.0
Delay (s)	28.1	7.4		28.9	9.4		28.4	27.9			21.4	21.2
Level of Service	C	A		C	A		C	C			C	C
Approach Delay (s)		8.8			9.6			28.3			21.2	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	13.7
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



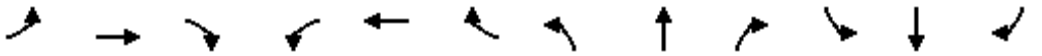
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	229	29	23	326	69	44	4	16	26	21	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97			0.97	1.00
Satd. Flow (prot)	1770	3480		1770	3539	1583		1739			1812	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97			0.97	1.00
Satd. Flow (perm)	1770	3480		1770	3539	1583		1739			1812	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	254	32	26	362	77	49	4	18	29	23	18
RTOR Reduction (vph)	0	8	0	0	0	41	0	13	0	0	0	16
Lane Group Flow (vph)	61	278	0	26	362	36	0	58	0	0	52	2
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	3.7	28.9		2.0	27.2	27.2		5.3			6.2	6.2
Effective Green, g (s)	4.7	31.9		3.0	30.2	28.2		6.3			7.2	7.2
Actuated g/C Ratio	0.08	0.53		0.05	0.50	0.47		0.10			0.12	0.12
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0			4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0			2.0	2.0
Lane Grp Cap (vph)	138	1847		88	1778	743		182			217	190
v/s Ratio Prot	c0.03	0.08		0.01	c0.10			c0.03			c0.03	
v/s Ratio Perm						0.02						0.00
v/c Ratio	0.44	0.15		0.30	0.20	0.05		0.32			0.24	0.01
Uniform Delay, d1	26.4	7.2		27.5	8.3	8.7		24.9			24.0	23.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.8	0.1		0.7	0.2	0.1		0.4			0.2	0.0
Delay (s)	27.3	7.3		28.2	8.5	8.7		25.3			24.2	23.3
Level of Service	C	A		C	A	A		C			C	C
Approach Delay (s)		10.8			9.6			25.3			24.0	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	11.7
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



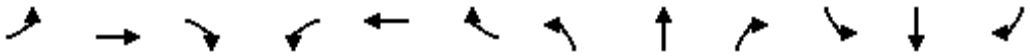
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	187	64	29	201	239	63	916	27	190	768	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	107	208	71	32	223	266	70	1018	30	211	853	161
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	107	208	71	32	223	266	70	1018	30	211	853	161
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	11.9	23.4	120.0	6.0	17.5	120.0	11.3	52.6	120.0	18.6	59.9	120.0
Effective Green, g (s)	12.9	25.9	120.0	7.0	20.0	120.0	12.3	55.6	120.0	19.6	62.9	120.0
Actuated g/C Ratio	0.11	0.22	1.00	0.06	0.17	1.00	0.10	0.46	1.00	0.16	0.52	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	190	402	1583	103	590	1583	181	1640	1583	289	1855	1583
v/s Ratio Prot	c0.06	c0.11		0.02	0.06		0.04	c0.29		c0.12	0.24	
v/s Ratio Perm			0.04			0.17			0.02			0.10
v/c Ratio	0.56	0.52	0.04	0.31	0.38	0.17	0.39	0.62	0.02	0.73	0.46	0.10
Uniform Delay, d1	50.9	41.5	0.0	54.2	44.5	0.0	50.3	24.3	0.0	47.7	17.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	1.9	0.1	0.6	0.7	0.2	0.5	0.9	0.0	7.9	0.8	0.1
Delay (s)	53.1	43.4	0.1	54.8	45.2	0.2	50.8	25.2	0.0	55.6	18.7	0.1
Level of Service	D	D	A	D	D	A	D	C	A	E	B	A
Approach Delay (s)		38.1			22.8			26.1			22.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	242	0	0	233	131	2	2	0	212	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0			3.0	3.0
Lane Util. Factor		0.95			1.00	1.00		1.00			1.00	1.00
Frt		1.00			1.00	0.85		1.00			1.00	0.85
Flt Protected		1.00			1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)		3539			1863	1583		1817			1770	1583
Flt Permitted		1.00			1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)		3539			1863	1583		1863			1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	269	0	0	259	146	2	2	0	236	0	6
RTOR Reduction (vph)	0	0	0	0	0	52	0	0	0	0	0	4
Lane Group Flow (vph)	0	269	0	0	259	94	0	4	0	0	236	2
Turn Type						pt+ov	Perm			Split		Perm
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases							3					4
Actuated Green, G (s)		24.5			18.1	30.7		0.6			12.6	12.6
Effective Green, g (s)		25.5			19.1	32.7		1.6			13.6	13.6
Actuated g/C Ratio		0.50			0.38	0.65		0.03			0.27	0.27
Clearance Time (s)		4.9			4.9			4.0			4.0	4.0
Vehicle Extension (s)		3.1			3.1			2.0			2.0	2.0
Lane Grp Cap (vph)		1783			703	1023		59			476	425
v/s Ratio Prot		c0.08			c0.14	0.06					c0.13	
v/s Ratio Perm								c0.00				0.00
v/c Ratio		0.15			0.37	0.09		0.07			0.50	0.00
Uniform Delay, d1		6.7			11.4	3.4		23.8			15.6	13.5
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.0			0.3	0.0		0.2			0.3	0.0
Delay (s)		6.8			11.7	3.4		24.0			15.9	13.5
Level of Service		A			B	A		C			B	B
Approach Delay (s)		6.8			8.7			24.0			15.8	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	50.6	Sum of lost time (s)	13.8
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

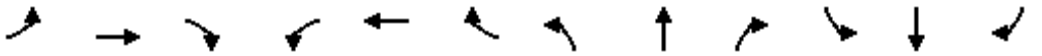


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	454	10	3	369	0	14	0	14	92	3	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9	3.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00			0.93		1.00	0.88	
Flt Protected		1.00	1.00	0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1695		1770	1639	
Flt Permitted		1.00	1.00	0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1695		1770	1639	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	504	11	3	410	0	16	0	16	102	3	12
RTOR Reduction (vph)	0	0	5	0	0	0	0	15	0	0	10	0
Lane Group Flow (vph)	0	504	6	3	410	0	0	17	0	102	5	0
Turn Type			Perm	Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases			2									
Actuated Green, G (s)		20.7	20.7	0.9	25.6			0.9		8.2	8.2	
Effective Green, g (s)		21.7	21.7	1.9	26.6			1.9		9.2	9.2	
Actuated g/C Ratio		0.46	0.46	0.04	0.56			0.04		0.19	0.19	
Clearance Time (s)		4.9	4.9	4.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1	3.1	2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1613	722	71	1978			68		342	317	
v/s Ratio Prot		c0.14		0.00	c0.12			c0.01		c0.06	0.00	
v/s Ratio Perm			0.00									
v/c Ratio		0.31	0.01	0.04	0.21			0.24		0.30	0.02	
Uniform Delay, d1		8.2	7.1	22.0	5.2			22.2		16.4	15.5	
Progression Factor		1.00	1.00	1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0	0.1	0.1			0.7		0.2	0.0	
Delay (s)		8.3	7.1	22.1	5.3			22.8		16.6	15.5	
Level of Service		A	A	C	A			C		B	B	
Approach Delay (s)		8.3			5.4			22.8			16.5	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	47.6	Sum of lost time (s)	13.8
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

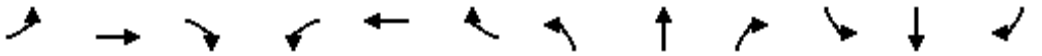
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	561	14	102	141	33	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		3.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3526		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3526		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	623	16	113	157	37	191
RTOR Reduction (vph)	2	0	0	0	0	162
Lane Group Flow (vph)	637	0	113	157	37	29
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	19.9		4.5	28.4	5.4	5.4
Effective Green, g (s)	20.9		5.5	29.4	6.4	6.4
Actuated g/C Ratio	0.49		0.13	0.69	0.15	0.15
Clearance Time (s)	4.9		4.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	1726		228	2437	265	237
v/s Ratio Prot	c0.18		c0.06	0.04	c0.02	
v/s Ratio Perm						0.02
v/c Ratio	0.37		0.50	0.06	0.14	0.12
Uniform Delay, d1	6.8		17.3	2.2	15.8	15.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1		0.6	0.0	0.1	0.1
Delay (s)	6.9		17.9	2.2	15.8	15.8
Level of Service	A		B	A	B	B
Approach Delay (s)	6.9			8.8	15.8	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	42.7	Sum of lost time (s)	9.9
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



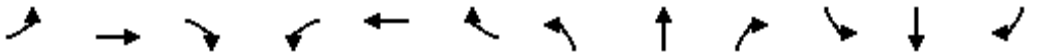
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	671	4	19	621	53	3	2	8	268	4	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3536		1770	3497			1683		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3536		1770	3497			1683		1681	1687	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	746	4	21	690	59	3	2	9	298	4	42
RTOR Reduction (vph)	0	0	0	0	4	0	0	9	0	0	0	36
Lane Group Flow (vph)	32	750	0	21	745	0	0	5	0	152	150	6
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	4.4	63.3		2.8	61.7			2.4		14.0	14.0	14.0
Effective Green, g (s)	5.4	64.3		3.8	62.7			3.4		15.0	15.0	15.0
Actuated g/C Ratio	0.05	0.64		0.04	0.63			0.03		0.15	0.15	0.15
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	96	2274		67	2193			57		252	253	237
v/s Ratio Prot	c0.02	0.21		0.01	c0.21			c0.00		c0.09	0.09	
v/s Ratio Perm												0.00
v/c Ratio	0.33	0.33		0.31	0.34			0.09		0.60	0.59	0.03
Uniform Delay, d1	45.6	8.1		46.8	8.8			46.8		39.7	39.7	36.3
Progression Factor	1.00	1.00		0.64	2.35			1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.4		0.9	0.1			0.3		3.4	3.1	0.0
Delay (s)	46.3	8.5		30.9	20.9			47.1		43.1	42.7	36.3
Level of Service	D	A		C	C			D		D	D	D
Approach Delay (s)		10.0			21.1			47.1			42.1	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



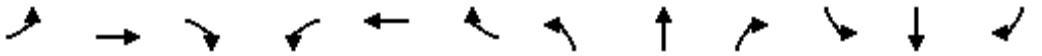
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	854	9	40	634	243	11	7	20	393	7	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	1.00	*0.80		1.00	0.95	1.00	1.00	1.00	1.00	*0.70	*0.70	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	2976		1770	3539	1583	1770	1863	1583	1239	1244	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	2976		1770	3539	1583	1770	1863	1583	1239	1244	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	147	949	10	44	704	270	12	8	22	437	8	136
RTOR Reduction (vph)	0	0	0	0	0	143	0	0	21	0	0	110
Lane Group Flow (vph)	147	959	0	44	704	127	12	8	1	223	222	26
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	12.9	54.9		4.9	46.9	46.9	3.5	3.5	3.5	18.9	18.9	18.9
Effective Green, g (s)	12.9	54.9		4.9	46.9	46.9	3.5	3.5	3.5	18.9	18.9	18.9
Actuated g/C Ratio	0.13	0.55		0.05	0.47	0.47	0.04	0.04	0.04	0.19	0.19	0.19
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.3		2.0	3.5	3.5	2.0	2.0	2.0	2.3	2.3	2.3
Lane Grp Cap (vph)	228	1634		87	1660	742	62	65	55	234	235	299
v/s Ratio Prot	c0.08	c0.32		0.02	0.20		c0.01	0.00		c0.18	0.18	
v/s Ratio Perm						0.08			0.00			0.02
v/c Ratio	0.64	0.59		0.51	0.42	0.17	0.19	0.12	0.01	0.95	0.94	0.09
Uniform Delay, d1	41.4	15.0		46.4	17.6	15.3	46.9	46.8	46.6	40.1	40.0	33.4
Progression Factor	0.91	0.94		1.11	0.70	0.29	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	1.5		1.5	0.2	0.1	0.6	0.3	0.0	45.4	43.1	0.1
Delay (s)	42.0	15.6		53.2	12.5	4.6	47.4	47.1	46.6	85.5	83.1	33.5
Level of Service	D	B		D	B	A	D	D	D	F	F	C
Approach Delay (s)		19.1			12.1			46.9			72.4	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



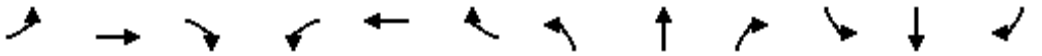
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	780	130	0	817	647	0	0	0	220	521	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3			2.9	3.0				3.7	4.3	3.7
Lane Util. Factor		0.95			0.91	0.91				0.95	*0.85	1.00
Frt		0.98			0.97	0.85				1.00	1.00	0.85
Flt Protected		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3464			3290	1441				1681	1580	1583
Flt Permitted		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3464			3290	1441				1681	1580	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	867	144	0	908	719	0	0	0	244	579	159
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1011	0	0	1111	496	0	0	0	220	603	159
Turn Type						Free				Split		custom
Protected Phases		2			6					4	4	4
Permitted Phases						Free						6
Actuated Green, G (s)		59.1			59.1	100.0				30.7	30.7	89.8
Effective Green, g (s)		60.7			61.1	100.0				32.3	31.7	93.0
Actuated g/C Ratio		0.61			0.61	1.00				0.32	0.32	0.93
Clearance Time (s)		4.9			4.9					5.3	5.3	5.3
Vehicle Extension (s)		3.8			3.8					2.0	2.0	2.0
Lane Grp Cap (vph)		2103			2010	1441				543	501	1531
v/s Ratio Prot		0.29			c0.34					0.13	c0.38	0.03
v/s Ratio Perm						0.34						0.07
v/c Ratio		0.48			0.55	0.34				0.41	1.20	0.10
Uniform Delay, d1		10.9			11.4	0.0				26.4	34.1	0.3
Progression Factor		0.87			1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.6			0.4	0.7				0.2	109.4	0.0
Delay (s)		10.1			11.8	0.7				26.5	143.6	0.3
Level of Service		B			B	A				C	F	A
Approach Delay (s)		10.1			8.4			0.0			94.1	
Approach LOS		B			A			A			F	

Intersection Summary			
HCM Average Control Delay	32.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	872	0	0	1164	153	0	0	1247	0	0	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.9			3.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4797	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4797	1362			1611			2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	142	969	0	0	1293	170	0	0	1386	0	0	333
RTOR Reduction (vph)	0	0	0	0	1	41	0	0	0	0	0	96
Lane Group Flow (vph)	142	969	0	0	1309	112	0	0	1386	0	0	237
Turn Type	Prot					Perm			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						6			Free			
Actuated Green, G (s)	9.2	60.0			41.9	41.9			60.0			9.2
Effective Green, g (s)	11.2	60.0			43.9	43.9			60.0			11.2
Actuated g/C Ratio	0.19	1.00			0.73	0.73			1.00			0.19
Clearance Time (s)	4.0	4.9			4.9	4.9						4.0
Vehicle Extension (s)	2.0	3.9			3.8	3.8						2.0
Lane Grp Cap (vph)	330	3539			3510	997			1611			520
v/s Ratio Prot	0.08	0.27			0.27							0.09
v/s Ratio Perm						0.08			c0.86			
v/c Ratio	0.43	0.27			0.37	0.11			0.86			0.46
Uniform Delay, d1	21.6	0.0			3.0	2.4			0.0			21.7
Progression Factor	1.00	1.00			1.40	3.57			1.00			1.00
Incremental Delay, d2	0.3	0.1			0.3	0.2			6.3			0.2
Delay (s)	21.9	0.1			4.5	8.6			6.3			21.9
Level of Service	C	A			A	A			A			C
Approach Delay (s)		2.8			4.9			6.3			21.9	
Approach LOS		A			A			A			C	

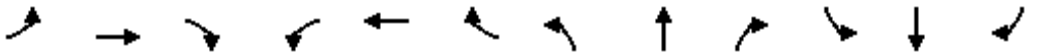
Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	343	1590	186	106	1024	42	173	301	83	45	225	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.0	4.0	4.9	4.9	4.0	4.9		4.0	5.3	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1559	3433	5085	1554	3433	3408		3433	3539	1569
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1559	3433	5085	1554	3433	3408		3433	3539	1569
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	381	1767	207	118	1138	47	192	334	92	50	250	133
RTOR Reduction (vph)	0	0	79	0	0	25	0	21	0	0	0	42
Lane Group Flow (vph)	381	1767	128	118	1138	22	192	405	0	50	250	91
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	17.3	63.3	74.4	10.9	56.9	56.9	11.1	20.6		7.4	16.5	33.8
Effective Green, g (s)	17.3	63.3	74.4	10.9	56.9	56.9	11.1	20.6		7.4	16.5	33.8
Actuated g/C Ratio	0.14	0.53	0.62	0.09	0.47	0.47	0.09	0.17		0.06	0.14	0.28
Clearance Time (s)	4.0	4.9	4.0	4.0	4.9	4.9	4.0	4.9		4.0	5.3	4.0
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5		2.0	5.1	2.0
Lane Grp Cap (vph)	495	2682	967	312	2411	737	318	585		212	487	442
v/s Ratio Prot	c0.11	c0.35	0.01	0.03	c0.22		0.06	c0.12		0.01	c0.07	0.03
v/s Ratio Perm			0.07			0.01						0.03
v/c Ratio	0.77	0.66	0.13	0.38	0.47	0.03	0.60	0.69		0.24	0.51	0.21
Uniform Delay, d1	49.4	20.5	9.4	51.4	21.4	16.8	52.3	46.7		53.6	48.0	32.9
Progression Factor	1.00	1.00	1.00	0.90	0.99	2.40	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.1	1.0	0.0	0.3	0.2	0.0	2.2	4.1		0.2	1.9	0.1
Delay (s)	54.5	21.5	9.5	46.7	21.4	40.4	54.6	50.8		53.8	49.9	32.9
Level of Service	D	C	A	D	C	D	D	D		D	D	C
Approach Delay (s)		25.8			24.4			52.0			45.1	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	30.6	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.9	
Intersection Capacity Utilization	63.7%	ICU Level of Service	B	
Analysis Period (min)	15			

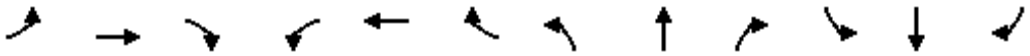
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	1609	27	24	1083	25	18	10	38	35	11	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96		1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1770	5069		1770	5085	1523		1805	1583	1681	1723	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1770	5069		1770	5085	1523		1805	1583	1681	1723	1555
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	79	1788	30	27	1203	28	20	11	42	39	12	40
RTOR Reduction (vph)	0	1	0	0	0	8	0	0	40	0	0	37
Lane Group Flow (vph)	79	1817	0	27	1203	20	0	31	2	25	26	3
Confl. Peds. (#/hr)			5			5						5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	8.6	77.3		9.6	78.3	78.3		6.3	6.3	9.9	9.9	9.9
Effective Green, g (s)	8.6	77.3		9.6	78.3	78.3		6.3	6.3	9.9	9.9	9.9
Actuated g/C Ratio	0.07	0.64		0.08	0.65	0.65		0.05	0.05	0.08	0.08	0.08
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.7		2.0	5.6	5.6		2.5	2.5	2.0	2.0	2.0
Lane Grp Cap (vph)	127	3265		142	3318	994		95	83	139	142	128
v/s Ratio Prot	0.04	c0.36		0.02	c0.24			c0.02		0.01	c0.02	
v/s Ratio Perm						0.01			0.00			0.00
v/c Ratio	0.62	0.56		0.19	0.36	0.02		0.33	0.03	0.18	0.18	0.03
Uniform Delay, d1	54.1	11.8		51.6	9.5	7.3		54.8	53.9	51.3	51.3	50.6
Progression Factor	1.37	0.31		0.82	0.49	0.21		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.5		0.2	0.2	0.0		1.5	0.1	0.2	0.2	0.0
Delay (s)	79.1	4.2		42.6	4.9	1.6		56.3	54.0	51.5	51.5	50.6
Level of Service	E	A		D	A	A		E	D	D	D	D
Approach Delay (s)		7.3			5.6			55.0			51.1	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

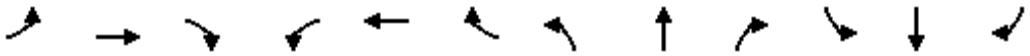
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1573	33	5	1080	24	89	21	20	26	4	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.6	4.6	
Lane Util. Factor	1.00	0.91		1.00	0.91		0.95	0.95		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.98		0.95	0.98	
Satd. Flow (prot)	1770	5060		1770	5058		1681	1657		1681	1628	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.98		0.95	0.98	
Satd. Flow (perm)	1770	5060		1770	5058		1681	1657		1681	1628	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	1748	37	6	1200	27	99	23	22	29	4	6
RTOR Reduction (vph)	0	1	0	0	1	0	0	15	0	0	5	0
Lane Group Flow (vph)	14	1784	0	6	1226	0	73	56	0	20	14	0
Confl. Peds. (#/hr)			20			20						20
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	3.4	72.6		1.4	70.6		10.3	10.3		18.2	18.2	
Effective Green, g (s)	3.4	72.6		1.4	70.6		10.3	10.3		18.2	18.2	
Actuated g/C Ratio	0.03	0.60		0.01	0.59		0.09	0.09		0.15	0.15	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.6	4.6	
Vehicle Extension (s)	2.0	5.6		2.0	5.6		2.5	2.5		2.0	2.0	
Lane Grp Cap (vph)	50	3061		21	2976		144	142		255	247	
v/s Ratio Prot	c0.01	c0.35		0.00	0.24		c0.04	0.03		c0.01	0.01	
v/s Ratio Perm												
v/c Ratio	0.28	0.58		0.29	0.41		0.51	0.40		0.08	0.06	
Uniform Delay, d1	57.1	14.5		58.8	13.4		52.4	51.9		43.7	43.6	
Progression Factor	0.68	0.84		1.21	1.04		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.4		2.6	0.4		2.0	1.3		0.0	0.0	
Delay (s)	40.0	12.6		73.9	14.4		54.5	53.2		43.7	43.6	
Level of Service	D	B		E	B		D	D		D	D	
Approach Delay (s)		12.8			14.7			53.9			43.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

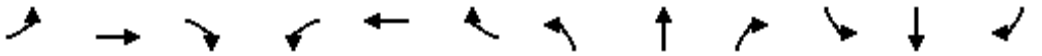
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	1514	31	13	1095	8	9	4	8	16	2	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.90		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5067		1770	5078		1770	1643		1770	1576	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5067		1770	5078		1770	1643		1770	1576	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	49	1682	34	14	1217	9	10	4	9	18	2	19
RTOR Reduction (vph)	0	1	0	0	0	0	0	9	0	0	18	0
Lane Group Flow (vph)	49	1715	0	14	1226	0	10	4	0	18	3	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.8	87.3		6.2	86.7		1.5	4.5		5.1	8.1	
Effective Green, g (s)	6.8	87.3		6.2	86.7		1.5	4.5		5.1	8.1	
Actuated g/C Ratio	0.06	0.73		0.05	0.72		0.01	0.04		0.04	0.07	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	5.8		2.0	5.8		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	100	3686		91	3669		22	62		75	106	
v/s Ratio Prot	0.03	c0.34		0.01	c0.24		c0.01	0.00		c0.01	c0.00	
v/s Ratio Perm												
v/c Ratio	0.49	0.47		0.15	0.33		0.45	0.07		0.24	0.03	
Uniform Delay, d1	54.9	6.7		54.4	6.1		58.8	55.7		55.6	52.3	
Progression Factor	0.97	0.82		0.85	1.41		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.4		0.3	0.1		14.2	0.5		1.7	0.1	
Delay (s)	54.7	5.9		46.5	8.7		73.0	56.2		57.2	52.4	
Level of Service	D	A		D	A		E	E		E	D	
Approach Delay (s)		7.2			9.2			63.5			54.6	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

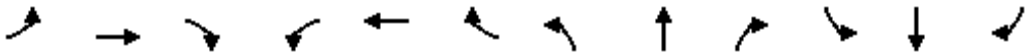
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	181	1221	89	99	976	87	172	512	245	65	281	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.0	4.0	4.9	4.0	5.0	6.7	6.7	5.0	6.3	6.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1562	3433	3539	1555	3433	3539	1556
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1562	3433	3539	1555	3433	3539	1556
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	201	1357	99	110	1084	97	191	569	272	72	312	29
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	219	0	0	25
Lane Group Flow (vph)	201	1357	99	110	1084	97	191	569	53	72	312	4
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			8			4
Actuated Green, G (s)	13.3	58.6	120.0	10.4	55.7	120.0	14.2	23.4	23.4	7.0	16.6	16.6
Effective Green, g (s)	13.3	58.6	120.0	10.4	55.7	120.0	14.2	23.4	23.4	7.0	16.6	16.6
Actuated g/C Ratio	0.11	0.49	1.00	0.09	0.46	1.00	0.12	0.19	0.19	0.06	0.14	0.14
Clearance Time (s)	4.0	4.9		4.0	4.9		5.0	6.7	6.7	5.0	6.3	6.3
Vehicle Extension (s)	2.0	5.6		2.0	5.6		2.0	2.7	2.7	2.0	3.1	3.1
Lane Grp Cap (vph)	380	2483	1562	298	2360	1562	406	690	303	200	490	215
v/s Ratio Prot	c0.06	c0.27		0.03	0.21		c0.06	c0.16		0.02	0.09	
v/s Ratio Perm			0.06			0.06			0.03			0.00
v/c Ratio	0.53	0.55	0.06	0.37	0.46	0.06	0.47	0.82	0.18	0.36	0.64	0.02
Uniform Delay, d1	50.4	21.4	0.0	51.7	21.9	0.0	49.4	46.3	40.3	54.3	48.9	44.7
Progression Factor	1.14	0.60	1.00	0.68	0.29	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.8	0.1	0.3	0.3	0.1	0.3	7.8	0.2	0.4	2.7	0.0
Delay (s)	58.1	13.7	0.1	35.3	6.7	0.1	49.7	54.2	40.5	54.7	51.6	44.7
Level of Service	E	B	A	D	A	A	D	D	D	D	D	D
Approach Delay (s)		18.3			8.6			49.7			51.7	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

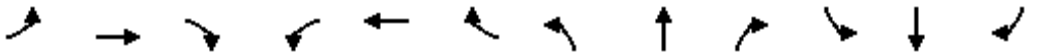


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	950	165	245	1470	150	333	695	136	185	746	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	5.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3319	5085	1545	3319	5085	1560	3319	5085	1560	3319	5023	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3319	5085	1545	3319	5085	1560	3319	5085	1560	3319	5023	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	176	1056	183	272	1633	167	370	772	151	206	829	62
RTOR Reduction (vph)	0	0	120	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	176	1056	63	272	1633	167	370	772	151	206	884	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	11.0	40.0	40.0	14.1	45.1	120.0	17.4	32.0	120.0	12.2	26.8	
Effective Green, g (s)	12.0	43.0	41.0	15.1	48.1	120.0	18.4	35.0	120.0	13.2	29.8	
Actuated g/C Ratio	0.10	0.36	0.34	0.13	0.40	1.00	0.15	0.29	1.00	0.11	0.25	
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.1	4.1	2.0	3.3		2.0	4.2		2.0	4.5	
Lane Grp Cap (vph)	332	1822	528	418	2038	1560	509	1483	1560	365	1247	
v/s Ratio Prot	0.05	c0.21		0.08	c0.32		c0.11	0.15		0.06	c0.18	
v/s Ratio Perm			0.04			0.11			0.10			
v/c Ratio	0.53	0.58	0.12	0.65	0.80	0.11	0.73	0.52	0.10	0.56	0.71	
Uniform Delay, d1	51.3	31.2	27.1	49.9	31.7	0.0	48.4	35.5	0.0	50.7	41.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	1.4	0.5	2.8	2.4	0.1	4.4	0.5	0.1	1.2	2.1	
Delay (s)	52.1	32.5	27.6	52.7	34.1	0.1	52.8	36.0	0.1	51.9	43.3	
Level of Service	D	C	C	D	C	A	D	D	A	D	D	
Approach Delay (s)		34.3			33.8			36.6			44.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

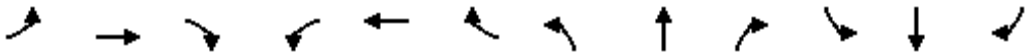
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	235	1005	260	224	1400	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	6.0	5.3	5.3	6.0	6.0
Lane Util. Factor	0.97	0.88	0.95	1.00	0.97	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	2787	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	3539	1583	3433	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	261	1117	289	249	1556	524
RTOR Reduction (vph)	0	84	0	215	0	0
Lane Group Flow (vph)	261	1033	289	34	1556	524
Turn Type		pm+ov		Perm	Prot	
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	14.4	87.0	16.4	16.4	72.6	94.3
Effective Green, g (s)	14.4	87.0	16.4	16.4	72.6	94.3
Actuated g/C Ratio	0.12	0.72	0.14	0.14	0.60	0.79
Clearance Time (s)	5.3	6.0	5.3	5.3	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	412	2021	484	216	2077	1464
v/s Ratio Prot	c0.08	0.31	c0.08		c0.45	0.28
v/s Ratio Perm		0.06		0.02		
v/c Ratio	0.63	0.51	0.60	0.16	0.75	0.36
Uniform Delay, d1	50.3	7.2	48.7	45.7	17.1	3.8
Progression Factor	0.94	2.82	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.2	2.0	0.3	2.5	0.2
Delay (s)	50.3	20.5	50.7	46.0	19.7	4.0
Level of Service	D	C	D	D	B	A
Approach Delay (s)	26.2		48.5			15.7
Approach LOS	C		D			B

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	141	1424	31	135	1017	84	64	95	123	52	110	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3528		3433	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3528		3433	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	157	1582	34	150	1130	93	71	106	137	58	122	186
RTOR Reduction (vph)	0	1	0	0	0	27	0	0	121	0	0	166
Lane Group Flow (vph)	157	1615	0	150	1130	66	71	106	16	58	122	20
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	9.9	69.9		10.4	70.4	70.4	8.1	14.4	14.4	7.4	12.6	12.6
Effective Green, g (s)	9.9	69.9		10.4	70.4	70.4	8.1	14.4	14.4	7.4	12.6	12.6
Actuated g/C Ratio	0.08	0.58		0.09	0.59	0.59	0.07	0.12	0.12	0.06	0.10	0.10
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.9		2.0	3.9	3.9	2.0	4.4	4.4	2.0	3.6	3.6
Lane Grp Cap (vph)	283	2055		298	2076	929	119	224	190	109	196	166
v/s Ratio Prot	0.05	c0.46		0.04	c0.32		c0.04	0.06		0.03	c0.07	
v/s Ratio Perm						0.04			0.01			0.01
v/c Ratio	0.55	0.79		0.50	0.54	0.07	0.60	0.47	0.09	0.53	0.62	0.12
Uniform Delay, d1	52.9	19.3		52.3	15.1	10.7	54.4	49.3	47.0	54.6	51.4	48.7
Progression Factor	1.21	0.33		1.01	1.29	1.78	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	2.2		0.4	0.3	0.0	5.3	2.6	0.3	2.5	6.4	0.4
Delay (s)	64.7	8.5		53.5	19.7	19.0	59.6	51.9	47.3	57.1	57.8	49.0
Level of Service	E	A		D	B	B	E	D	D	E	E	D
Approach Delay (s)		13.5			23.4			51.6			53.3	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

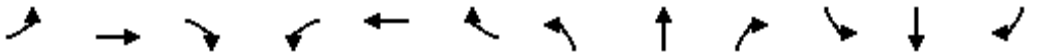


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1651	0	3	1247	7	4	0	28	47	2	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3			11.0			11.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.88			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.96	
Satd. Flow (prot)	1770	3539		1770	3536			1631			1741	
Flt Permitted	0.95	1.00		0.95	1.00			0.95			0.76	
Satd. Flow (perm)	1770	3539		1770	3536			1554			1370	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2	1834	0	3	1386	8	4	0	31	52	2	16
RTOR Reduction (vph)	0	0	0	0	0	0	0	29	0	0	9	0
Lane Group Flow (vph)	2	1834	0	3	1394	0	0	6	0	0	61	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			2	
Permitted Phases							2			2		
Actuated Green, G (s)	1.1	91.6		1.1	91.6			7.0			7.0	
Effective Green, g (s)	1.1	91.6		1.1	91.6			7.0			7.0	
Actuated g/C Ratio	0.01	0.76		0.01	0.76			0.06			0.06	
Clearance Time (s)	4.0	5.3		4.0	5.3			11.0			11.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.9			2.0			2.0	
Lane Grp Cap (vph)	16	2701		16	2699			91			80	
v/s Ratio Prot	0.00	c0.52		c0.00	0.39							
v/s Ratio Perm								0.00			c0.04	
v/c Ratio	0.12	0.68		0.19	0.52			0.06			0.76	
Uniform Delay, d1	59.0	7.0		59.0	5.5			53.4			55.7	
Progression Factor	0.99	0.40		0.90	0.60			1.00			1.00	
Incremental Delay, d2	0.9	1.0		2.0	0.2			0.1			29.8	
Delay (s)	59.4	3.8		55.3	3.5			53.5			85.4	
Level of Service	E	A		E	A			D			F	
Approach Delay (s)		3.9			3.6			53.5			85.4	
Approach LOS		A			A			D			F	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1739	8	162	1259	0	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0	5.3		6.0
Lane Util. Factor	0.91		0.97	0.95		1.00
Frt	1.00		1.00	1.00		0.86
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5082		3433	3539		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5082		3433	3539		1611
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1932	9	180	1399	0	272
RTOR Reduction (vph)	1	0	0	0	0	6
Lane Group Flow (vph)	1940	0	180	1399	0	266
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	34.2		12.5	60.0		12.5
Effective Green, g (s)	34.2		12.5	60.0		12.5
Actuated g/C Ratio	0.57		0.21	1.00		0.21
Clearance Time (s)	7.3		6.0	5.3		6.0
Vehicle Extension (s)	3.5		2.0	3.5		2.0
Lane Grp Cap (vph)	2897		715	3539		336
v/s Ratio Prot	c0.38		0.05	0.40		c0.16
v/s Ratio Perm						
v/c Ratio	0.67		0.25	0.40		0.79
Uniform Delay, d1	9.0		19.8	0.0		22.5
Progression Factor	1.46		1.09	1.00		1.00
Incremental Delay, d2	1.0		0.0	0.2		11.2
Delay (s)	14.1		21.7	0.2		33.7
Level of Service	B		C	A		C
Approach Delay (s)	14.1			2.7	33.7	
Approach LOS	B			A	C	

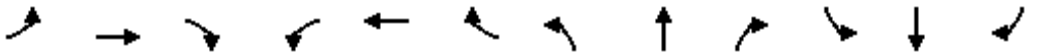
Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	741	1067	430	653	70	726	345	104	156	346	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	4.0	4.0	5.7		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3362	2787	3433	3488		3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3362	2787	3433	3488		3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	196	823	1186	478	726	78	807	383	116	173	384	79
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	82	0	0	69
Lane Group Flow (vph)	196	823	1186	478	797	0	807	383	34	173	384	10
Parking (#/hr)		0										
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free						2			6
Actuated Green, G (s)	14.0	35.5	120.0	20.3	41.4		31.0	35.2	35.2	10.4	14.6	14.6
Effective Green, g (s)	14.0	35.5	120.0	20.3	41.4		31.0	35.2	35.2	10.4	14.6	14.6
Actuated g/C Ratio	0.12	0.30	1.00	0.17	0.34		0.26	0.29	0.29	0.09	0.12	0.12
Clearance Time (s)	4.0	5.3		4.0	5.7		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.9		2.0	3.5		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	401	995	2787	581	1203		887	1038	464	298	619	193
v/s Ratio Prot	0.06	c0.24		c0.14	0.23		c0.24	0.11		0.05	c0.08	
v/s Ratio Perm			c0.43						0.02			0.01
v/c Ratio	0.49	0.83	0.43	0.82	0.66		0.91	0.37	0.07	0.58	0.62	0.05
Uniform Delay, d1	49.6	39.4	0.0	48.1	33.4		43.1	33.6	30.6	52.7	50.1	46.6
Progression Factor	0.79	0.76	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	4.4	0.3	8.8	2.9		12.8	0.3	0.1	1.9	2.2	0.1
Delay (s)	39.6	34.5	0.3	56.9	36.3		55.9	33.9	30.7	54.6	52.2	46.7
Level of Service	D	C	A	E	D		E	C	C	D	D	D
Approach Delay (s)		16.6			43.9			47.2			52.2	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

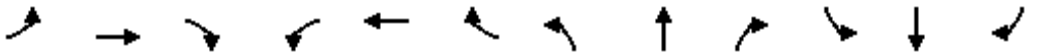


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	873	47	88	1154	4	10	0	261	9	2	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (prot)	1762	3618		1711	3538			1770	1583		1788	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (perm)	1762	3618		1711	3538			1770	1583		1788	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	970	52	98	1282	4	11	0	290	10	2	8
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	214	0	0	8
Lane Group Flow (vph)	6	1021	0	98	1286	0	0	11	76	0	12	0
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	1.2	82.1		11.8	94.4			4.2	16.0		2.5	2.5
Effective Green, g (s)	2.2	84.6		12.8	96.9			5.7	19.0		4.0	4.0
Actuated g/C Ratio	0.02	0.70		0.11	0.81			0.05	0.16		0.03	0.03
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	32	2551		183	2857			84	284		60	49
v/s Ratio Prot	0.00	0.28		c0.06	c0.36			0.01	c0.03		c0.01	
v/s Ratio Perm									0.02			0.00
v/c Ratio	0.19	0.40		0.54	0.45			0.13	0.27		0.20	0.01
Uniform Delay, d1	58.0	7.3		50.8	3.5			54.8	44.4		56.4	56.1
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	0.1		1.5	0.5			0.3	0.2		0.6	0.0
Delay (s)	59.1	7.4		52.3	4.0			55.0	44.6		57.0	56.1
Level of Service	E	A		D	A			E	D		E	E
Approach Delay (s)		7.7			7.4			45.0			56.7	
Approach LOS		A			A			D			E	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

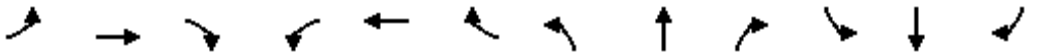
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1145	12	16	1206	37	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3534		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3534		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1272	13	18	1340	41	60
RTOR Reduction (vph)	0	0	0	0	0	56
Lane Group Flow (vph)	1285	0	18	1340	41	4
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	88.0		2.8	94.8	6.7	6.7
Effective Green, g (s)	90.0		4.8	96.8	8.7	8.7
Actuated g/C Ratio	0.76		0.04	0.81	0.07	0.07
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2673		71	2879	129	116
v/s Ratio Prot	c0.36		0.01	c0.38	c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.48		0.25	0.47	0.32	0.04
Uniform Delay, d1	5.6		55.4	3.3	52.3	51.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		0.7	0.5	1.0	0.1
Delay (s)	5.8		56.1	3.9	53.4	51.4
Level of Service	A		E	A	D	D
Approach Delay (s)	5.8			4.6	52.2	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	119.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	195	737	239	123	870	73	265	926	45	187	741	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3493		3433	3539	1551	3433	3539	1551
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3493		3433	3539	1551	3433	3539	1551
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	217	819	266	137	967	81	294	1029	50	208	823	149
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	24	0	0	91
Lane Group Flow (vph)	217	819	266	137	1043	0	294	1029	26	208	823	58
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	11.8	31.7	120.0	18.9	39.2		13.9	33.2	33.2	16.8	36.5	36.5
Effective Green, g (s)	12.8	33.2	120.0	19.9	40.7		14.9	34.7	34.2	17.8	38.0	37.5
Actuated g/C Ratio	0.11	0.28	1.00	0.17	0.34		0.12	0.29	0.29	0.15	0.32	0.31
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	366	979	1561	569	1185		426	1023	442	509	1121	485
v/s Ratio Prot	0.06	c0.23		0.04	c0.30		0.09	c0.29		0.06	c0.23	
v/s Ratio Perm			0.17						0.02			0.04
v/c Ratio	0.59	0.84	0.17	0.24	0.88		0.69	1.01	0.06	0.41	0.73	0.12
Uniform Delay, d1	51.1	40.8	0.0	43.5	37.4		50.3	42.6	31.2	46.3	36.5	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.94	1.15	1.46	1.00	1.00	1.00
Incremental Delay, d2	1.7	6.5	0.2	0.1	8.1		3.2	26.8	0.2	0.2	2.7	0.2
Delay (s)	52.8	47.3	0.2	43.6	45.4		50.3	75.8	45.8	46.5	39.2	29.6
Level of Service	D	D	A	D	D		D	E	D	D	D	C
Approach Delay (s)		38.6			45.2			69.2			39.3	
Approach LOS		D			D			E			D	

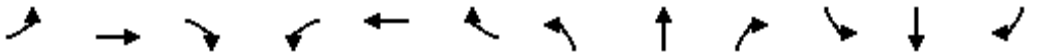
Intersection Summary			
HCM Average Control Delay	48.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	1067	10	12	1068	16	27	12	62	22	11	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3533		1770	3529			1800	1550		1803	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (perm)	1770	3533		1770	3529			1800	1550		1803	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	27	1186	11	13	1187	18	30	13	69	24	12	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	64	0	0	37
Lane Group Flow (vph)	27	1197	0	13	1205	0	0	43	5	0	36	2
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	23.6	85.9		2.6	64.9			8.3	8.3		5.9	5.9
Effective Green, g (s)	24.6	87.9		3.6	66.9			9.3	9.3		6.9	6.9
Actuated g/C Ratio	0.21	0.73		0.03	0.56			0.08	0.08		0.06	0.06
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	363	2588		53	1967			140	120		104	91
v/s Ratio Prot	0.02	c0.34		0.01	c0.34			c0.02			c0.02	
v/s Ratio Perm									0.00			0.00
v/c Ratio	0.07	0.46		0.25	0.61			0.31	0.04		0.35	0.02
Uniform Delay, d1	38.5	6.5		56.9	17.8			52.3	51.2		54.4	53.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.3		0.9	1.4			0.5	0.1		0.7	0.0
Delay (s)	38.5	6.7		57.8	19.3			52.8	51.3		55.1	53.4
Level of Service	D	A		E	B			D	D		E	D
Approach Delay (s)		7.4			19.7			51.9			54.2	
Approach LOS		A			B			D			D	

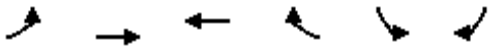
Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



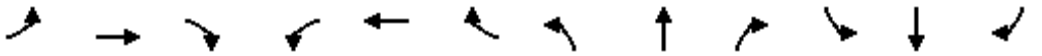
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	1043	0	26	855	13	81	2	32	64	0	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.8		3.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3532			1731			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.72	1.00
Satd. Flow (perm)	1770	3539		1770	3532			1378			1333	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	1159	0	29	950	14	90	2	36	71	0	86
RTOR Reduction (vph)	0	0	0	0	1	0	0	12	0	0	0	66
Lane Group Flow (vph)	39	1159	0	29	963	0	0	116	0	0	71	20
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	2.2	25.4		2.0	25.2			11.3			11.3	11.3
Effective Green, g (s)	3.2	27.9		3.0	27.7			12.3			12.3	12.3
Actuated g/C Ratio	0.06	0.54		0.06	0.53			0.24			0.24	0.24
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	109	1899		102	1881			326			315	374
v/s Ratio Prot	c0.02	c0.33		0.02	0.27							
v/s Ratio Perm								c0.08			0.05	0.01
v/c Ratio	0.36	0.61		0.28	0.51			0.36			0.23	0.05
Uniform Delay, d1	23.4	8.3		23.5	7.8			16.5			16.0	15.4
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.7	0.6		0.6	0.3			0.5			0.3	0.0
Delay (s)	24.1	8.9		24.0	8.1			17.0			16.3	15.4
Level of Service	C	A		C	A			B			B	B
Approach Delay (s)		9.4			8.5			17.0			15.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	494	439	732	235	115	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	0.99	1.00		0.95	1.00
Satd. Flow (prot)	1610	3340	3410		3433	1583
Flt Permitted	0.95	0.99	1.00		0.95	1.00
Satd. Flow (perm)	1610	3340	3410		3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	549	488	813	261	128	379
RTOR Reduction (vph)	0	0	26	0	0	16
Lane Group Flow (vph)	340	697	1048	0	128	363
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	26.5	26.5	28.8		9.3	35.8
Effective Green, g (s)	29.0	29.0	31.3		10.3	40.8
Actuated g/C Ratio	0.37	0.37	0.40		0.13	0.52
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	599	1243	1370		454	886
v/s Ratio Prot	c0.21	0.21	c0.31		0.04	c0.15
v/s Ratio Perm						0.08
v/c Ratio	0.57	0.56	0.76		0.28	0.41
Uniform Delay, d1	19.5	19.4	20.1		30.5	11.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.7	0.8	2.3		0.1	0.5
Delay (s)	21.1	20.2	22.5		30.6	11.7
Level of Service	C	C	C		C	B
Approach Delay (s)		20.5	22.5		16.5	
Approach LOS		C	C		B	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	4.3
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	429	33	17	857	15	75	15	14	11	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3	4.3	3.0	3.3			3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00			0.98			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	3530			1553			1811	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.78			0.85	
Satd. Flow (perm)	1770	1863	1583	1770	3530			1251			1590	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	48	477	37	19	952	17	83	17	16	12	9	0
RTOR Reduction (vph)	0	0	10	0	1	0	0	6	0	0	0	0
Lane Group Flow (vph)	48	477	27	19	968	0	0	110	0	0	21	0
Parking (#/hr)								4				
Turn Type	Prot		Perm	Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases			2				4			4		4
Actuated Green, G (s)	3.8	35.0	35.0	0.9	32.1			8.8			8.8	
Effective Green, g (s)	4.8	37.0	36.0	1.9	34.1			9.8			9.8	
Actuated g/C Ratio	0.08	0.64	0.62	0.03	0.59			0.17			0.17	
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3			4.0			4.0	
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3			2.0			2.0	
Lane Grp Cap (vph)	146	1188	983	58	2075			211			269	
v/s Ratio Prot	c0.03	c0.26		0.01	c0.27							
v/s Ratio Perm			0.02					c0.09			0.01	
v/c Ratio	0.33	0.40	0.03	0.33	0.47			0.52			0.08	
Uniform Delay, d1	25.1	5.1	4.2	27.4	6.8			22.0			20.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.4	0.0	1.2	0.3			1.1			0.0	
Delay (s)	25.6	5.5	4.3	28.6	7.0			23.0			20.3	
Level of Service	C	A	A	C	A			C			C	
Approach Delay (s)		7.1			7.5			23.0			20.3	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

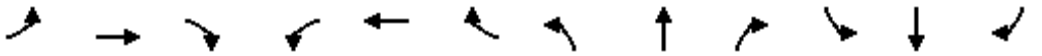
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	235	376	491	337	313	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	3.0	2.8	2.5	3.0	2.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	261	418	546	374	348	193
RTOR Reduction (vph)	0	56	0	93	0	0
Lane Group Flow (vph)	261	362	546	281	348	193
Turn Type		pm+ov		pm+ov	Prot	
Protected Phases	8	5	6	8	5	2
Permitted Phases		8		6		
Actuated Green, G (s)	16.7	36.9	28.8	45.5	20.2	53.0
Effective Green, g (s)	18.2	38.9	31.3	48.5	21.2	55.5
Actuated g/C Ratio	0.23	0.49	0.40	0.61	0.27	0.70
Clearance Time (s)	4.0	4.0	5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0	2.0	4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	408	840	738	972	475	1309
v/s Ratio Prot	c0.15	0.12	c0.29	0.07	c0.20	0.10
v/s Ratio Perm		0.11		0.11		
v/c Ratio	0.64	0.43	0.74	0.29	0.73	0.15
Uniform Delay, d1	27.4	12.9	20.4	7.2	26.3	3.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.1	4.3	0.1	5.0	0.1
Delay (s)	29.9	13.1	24.7	7.2	31.3	4.0
Level of Service	C	B	C	A	C	A
Approach Delay (s)	19.5		17.6			21.6
Approach LOS	B		B			C

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	79.0	Sum of lost time (s)	8.3
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

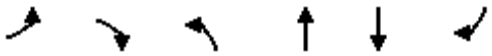
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	380	5	4	404	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3539	1583	1770	3539	1770	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (perm)	3539	1583	1770	3539	1770	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	422	6	4	449	6	0
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	422	4	4	449	6	0
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	26.1	26.1	0.5	32.3	1.8	
Effective Green, g (s)	29.5	29.5	1.5	35.7	2.8	
Actuated g/C Ratio	0.67	0.67	0.03	0.82	0.06	
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	
Lane Grp Cap (vph)	2384	1066	61	2885	113	
v/s Ratio Prot	c0.12		0.00	c0.13	c0.00	
v/s Ratio Perm		0.00				
v/c Ratio	0.18	0.00	0.07	0.16	0.05	
Uniform Delay, d1	2.7	2.3	20.5	0.9	19.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.0	0.2	0.0	0.1	
Delay (s)	2.7	2.3	20.6	0.9	19.3	
Level of Service	A	A	C	A	B	
Approach Delay (s)	2.7			1.1	19.3	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	2.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	43.8	Sum of lost time (s)	7.6
Intersection Capacity Utilization	25.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



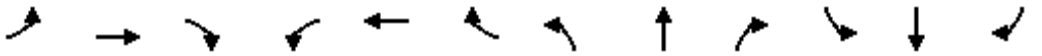
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	244	0	0	256	2	0	0	0	2	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0			5.0	5.0				3.0		3.0
Lane Util. Factor	1.00	0.95			0.95	1.00				1.00		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1593	3185			3185	1425				1593		1425
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1593	3185			3185	1425				1593		1425
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	271	0	0	284	2	0	0	0	2	0	39
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	0	0	0	32
Lane Group Flow (vph)	32	271	0	0	284	1	0	0	0	2	0	7
Turn Type	Prot		Perm	Perm		Perm	Perm			Prot		Perm
Protected Phases	5	2			6			8		7	4	
Permitted Phases			2	6		6	8					4
Actuated Green, G (s)	0.9	32.3			27.4	27.4				1.0		7.9
Effective Green, g (s)	1.9	33.3			28.4	28.4				2.0		8.9
Actuated g/C Ratio	0.04	0.66			0.57	0.57				0.04		0.18
Clearance Time (s)	4.0	6.0			6.0	6.0				4.0		4.0
Vehicle Extension (s)	2.0	4.7			4.7	4.7				2.0		2.0
Lane Grp Cap (vph)	60	2113			1802	806				63		253
v/s Ratio Prot	c0.02	0.09			c0.09					0.00		
v/s Ratio Perm						0.00						c0.00
v/c Ratio	0.53	0.13			0.16	0.00				0.03		0.03
Uniform Delay, d1	23.7	3.1			5.2	4.7				23.2		17.1
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	4.5	0.1			0.1	0.0				0.1		0.0
Delay (s)	28.2	3.2			5.3	4.7				23.2		17.1
Level of Service	C	A			A	A				C		B
Approach Delay (s)		5.8			5.3			0.0			17.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	50.2	Sum of lost time (s)	11.0
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



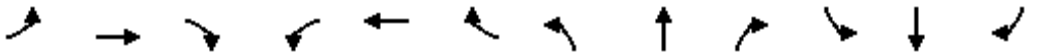
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	107	140	58	491	515	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	119	156	64	546	572	51
RTOR Reduction (vph)	0	118	0	0	0	27
Lane Group Flow (vph)	119	38	64	546	572	24
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	11.0	11.0	4.0	28.2	20.2	20.2
Effective Green, g (s)	12.0	12.0	5.0	31.6	23.6	23.6
Actuated g/C Ratio	0.24	0.24	0.10	0.64	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	432	386	180	2273	1698	759
v/s Ratio Prot	c0.07		c0.04	0.15	c0.16	
v/s Ratio Perm		0.02				0.02
v/c Ratio	0.28	0.10	0.36	0.24	0.34	0.03
Uniform Delay, d1	15.1	14.4	20.6	3.7	7.9	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.4	0.1	0.2	0.0
Delay (s)	15.2	14.5	21.0	3.8	8.2	6.8
Level of Service	B	B	C	A	A	A
Approach Delay (s)	14.8			5.6	8.1	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	8.6
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



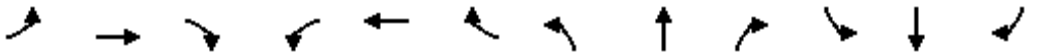
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	21	111	53	0	18	74	225	25	6	572	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9		3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583		1770	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583		1770	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	23	123	59	0	20	82	250	28	7	636	60
RTOR Reduction (vph)	0	0	107	0	0	18	0	0	13	0	0	32
Lane Group Flow (vph)	72	23	16	0	59	2	82	250	15	7	636	28
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	8.2	8.2	8.2		6.1	6.1	6.6	34.3	34.3	1.1	28.8	28.8
Effective Green, g (s)	9.8	9.8	9.2		7.7	7.7	7.6	37.7	37.7	2.1	32.2	32.2
Actuated g/C Ratio	0.14	0.14	0.13		0.11	0.11	0.11	0.54	0.54	0.03	0.46	0.46
Clearance Time (s)	4.9	4.9	4.9		5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1		2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	248	261	208		195	174	192	1909	854	53	1630	729
v/s Ratio Prot	c0.04	0.01			c0.03		c0.05	0.07		0.00	c0.18	
v/s Ratio Perm			0.01			0.00			0.01			0.02
v/c Ratio	0.29	0.09	0.08		0.30	0.01	0.43	0.13	0.02	0.13	0.39	0.04
Uniform Delay, d1	26.9	26.2	26.6		28.6	27.7	29.1	8.0	7.5	33.0	12.4	10.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	0.2		0.3	0.0	0.6	0.1	0.0	0.4	0.3	0.0
Delay (s)	27.6	26.3	26.8		28.9	27.7	29.7	8.0	7.5	33.4	12.7	10.4
Level of Service	C	C	C		C	C	C	A	A	C	B	B
Approach Delay (s)		27.0			28.6			12.9			12.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	12.6
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



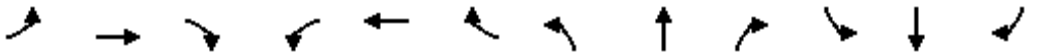
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	2	59	21	7	27	46	273	7	9	279	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4	3.4	3.0	3.4	3.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1776	1583		1796	1583	1770	1863	1583	1770	1863	1583
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1776	1583		1796	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	82	2	66	23	8	30	51	303	8	10	310	94
RTOR Reduction (vph)	0	0	55	0	0	27	0	0	3	0	0	33
Lane Group Flow (vph)	0	84	11	0	31	3	51	303	5	10	310	61
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)		8.5	8.5		4.3	4.3	3.5	23.9	23.9	0.7	21.1	21.1
Effective Green, g (s)		9.5	9.5		5.3	5.3	4.5	26.2	26.2	1.7	23.4	23.4
Actuated g/C Ratio		0.17	0.17		0.10	0.10	0.08	0.48	0.48	0.03	0.42	0.42
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8	3.8	2.0	3.8	3.8
Lane Grp Cap (vph)		306	273		173	152	145	886	753	55	791	672
v/s Ratio Prot		c0.05			c0.02		c0.03	c0.16		0.01	c0.17	
v/s Ratio Perm			0.01			0.00			0.00			0.04
v/c Ratio		0.27	0.04		0.18	0.02	0.35	0.34	0.01	0.18	0.39	0.09
Uniform Delay, d1		19.8	19.0		22.9	22.5	23.9	9.1	7.6	26.0	10.9	9.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	0.0		0.2	0.0	0.5	0.3	0.0	0.6	0.4	0.1
Delay (s)		20.0	19.0		23.1	22.6	24.5	9.4	7.6	26.6	11.4	9.6
Level of Service		B	B		C	C	C	A	A	C	B	A
Approach Delay (s)		19.6			22.8			11.4			11.3	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	15.8
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



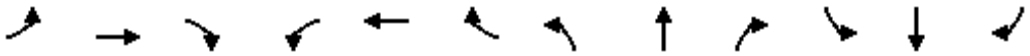
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	29	76	37	4	28	29	276	18	4	407	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.94		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1583		1714		1770	1846		1770	1844	
Flt Permitted		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1797	1583		1714		1770	1846		1770	1844	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	89	32	84	41	4	31	32	307	20	4	452	33
RTOR Reduction (vph)	0	0	73	0	29	0	0	2	0	0	2	0
Lane Group Flow (vph)	0	121	11	0	47	0	32	325	0	4	483	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		7.7	7.7		4.6		2.1	28.7		0.8	27.4	
Effective Green, g (s)		7.7	7.7		4.6		2.1	28.7		0.8	27.4	
Actuated g/C Ratio		0.13	0.13		0.08		0.04	0.48		0.01	0.46	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		233	205		133		62	890		24	849	
v/s Ratio Prot		c0.07			c0.03		c0.02	0.18		0.00	c0.26	
v/s Ratio Perm			0.01									
v/c Ratio		0.52	0.05		0.36		0.52	0.37		0.17	0.57	
Uniform Delay, d1		24.2	22.7		26.0		28.2	9.7		29.0	11.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.0		0.6		3.0	0.3		1.2	1.0	
Delay (s)		25.0	22.7		26.6		31.2	10.0		30.2	12.7	
Level of Service		C	C		C		C	A		C	B	
Approach Delay (s)		24.1			26.6			11.9			12.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	17.7
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	8	151	17	15	14	84	322	13	5	578	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1789	1583		1815	1583	1770	1852		1770	1863	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1789	1583		1815	1583	1770	1852		1770	1863	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	9	168	19	17	16	93	358	14	6	642	0
RTOR Reduction (vph)	0	0	146	0	0	15	0	1	0	0	0	0
Lane Group Flow (vph)	0	51	22	0	36	1	93	371	0	6	642	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		9.6	9.6		6.7	6.7	7.3	47.9		0.9	41.5	
Effective Green, g (s)		10.6	10.6		7.7	7.7	8.3	50.6		1.9	44.2	
Actuated g/C Ratio		0.13	0.13		0.09	0.09	0.10	0.61		0.02	0.53	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		229	203		169	147	177	1132		41	995	
v/s Ratio Prot		c0.03			c0.02		c0.05	0.20		0.00	c0.34	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.22	0.11		0.21	0.01	0.53	0.33		0.15	0.65	
Uniform Delay, d1		32.4	31.9		34.7	34.1	35.4	7.8		39.7	13.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.2		0.6	0.0	1.3	0.2		0.6	1.6	
Delay (s)		32.9	32.1		35.4	34.1	36.7	8.1		40.3	15.3	
Level of Service		C	C		D	C	D	A		D	B	
Approach Delay (s)		32.3			35.0			13.8			15.5	
Approach LOS		C			C			B			B	

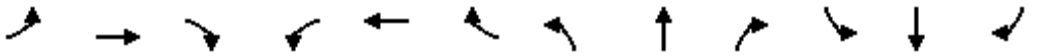
Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	82.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	34	36	152	73	75	64	457	17	90	442	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.97	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1539	1770	1863	1583	1770	3514		1770	3461	
Flt Permitted		0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799	1539	1770	1863	1583	1770	3514		1770	3461	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	94	38	40	169	81	83	71	508	19	100	491	62
RTOR Reduction (vph)	0	0	33	0	0	66	0	2	0	0	8	0
Lane Group Flow (vph)	0	132	7	169	81	17	71	525	0	100	545	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		11.8	11.8	13.3	13.3	13.3	6.0	19.8		6.7	20.5	
Effective Green, g (s)		12.8	12.8	14.3	14.3	14.3	8.0	21.8		8.7	22.5	
Actuated g/C Ratio		0.18	0.18	0.20	0.20	0.20	0.11	0.31		0.12	0.32	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		326	279	359	377	321	201	1085		218	1103	
v/s Ratio Prot		c0.07		c0.10	0.04		0.04	0.15		c0.06	c0.16	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.40	0.03	0.47	0.21	0.05	0.35	0.48		0.46	0.49	
Uniform Delay, d1		25.5	23.8	24.8	23.5	22.7	28.9	19.8		28.8	19.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.0	0.7	0.2	0.0	0.4	0.4		0.6	0.5	
Delay (s)		26.1	23.8	25.5	23.7	22.7	29.3	20.3		29.3	19.9	
Level of Service		C	C	C	C	C	C	C		C	B	
Approach Delay (s)		25.6			24.4			21.3			21.3	
Approach LOS		C			C			C			C	

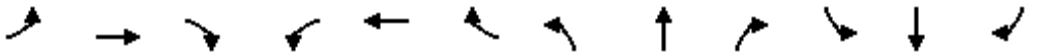
Intersection Summary				
HCM Average Control Delay	22.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.43			
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	9.3	
Intersection Capacity Utilization	50.2%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



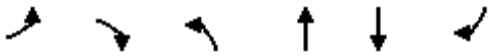
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	0	134	45	0	74	125	484	33	56	406	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3505		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3505		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	99	0	149	50	0	82	139	538	37	62	451	61
RTOR Reduction (vph)	0	0	124	0	0	72	0	4	0	0	0	42
Lane Group Flow (vph)	99	0	25	50	0	10	139	571	0	62	451	19
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	10.3		10.3	6.6		6.6	7.8	22.1		4.3	18.6	18.6
Effective Green, g (s)	10.3		10.3	7.6		7.6	7.8	23.1		5.3	19.6	18.6
Actuated g/C Ratio	0.17		0.17	0.12		0.12	0.13	0.38		0.09	0.32	0.30
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	299		267	221		197	226	1327		154	1137	483
v/s Ratio Prot	c0.06			c0.03			c0.08	c0.16		0.04	0.13	
v/s Ratio Perm			0.02			0.01						0.01
v/c Ratio	0.33		0.09	0.23		0.05	0.62	0.43		0.40	0.40	0.04
Uniform Delay, d1	22.3		21.4	24.1		23.5	25.2	14.1		26.4	16.1	14.9
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2		0.1	0.2		0.0	3.5	0.4		0.6	0.4	0.1
Delay (s)	22.6		21.5	24.2		23.6	28.6	14.5		27.0	16.5	15.0
Level of Service	C		C	C		C	C	B		C	B	B
Approach Delay (s)		21.9			23.8			17.2			17.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



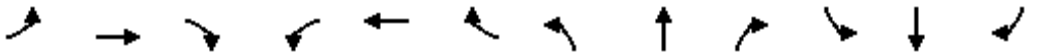
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	3	6	59	0	3	140	497	16	11	629	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1735	1583		1770	1583	1770	5085	1583	1770	3539	1583
Flt Permitted	0.95	0.98	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1735	1583		1770	1583	1770	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	3	7	66	0	3	156	552	18	12	699	230
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	114
Lane Group Flow (vph)	5	5	7	0	66	3	156	552	18	12	699	116
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	3.8	3.8	71.6		5.3	71.6	11.7	43.6	71.6	0.9	32.8	32.8
Effective Green, g (s)	4.8	4.8	71.6		6.3	71.6	12.7	47.0	71.6	1.9	36.2	36.2
Actuated g/C Ratio	0.07	0.07	1.00		0.09	1.00	0.18	0.66	1.00	0.03	0.51	0.51
Clearance Time (s)	4.0	4.0			4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5			3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	113	116	1583		156	1583	314	3338	1583	47	1789	800
v/s Ratio Prot	c0.00	0.00			c0.04		c0.09	0.11		0.01	c0.20	
v/s Ratio Perm			0.00			0.00			0.01			0.07
v/c Ratio	0.04	0.04	0.00		0.42	0.00	0.50	0.17	0.01	0.26	0.39	0.15
Uniform Delay, d1	31.3	31.3	0.0		30.9	0.0	26.6	4.7	0.0	34.2	10.9	9.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0		1.8	0.0	0.5	0.0	0.0	2.9	0.3	0.2
Delay (s)	31.4	31.4	0.0		32.8	0.0	27.0	4.8	0.0	37.0	11.2	9.6
Level of Service	C	C	A		C	A	C	A	A	D	B	A
Approach Delay (s)		18.5			31.4			9.4			11.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	11.6
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



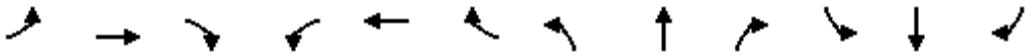
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)						
Effective Green, g (s)						
Actuated g/C Ratio						
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)						
v/s Ratio Prot						
v/s Ratio Perm						
v/c Ratio						
Uniform Delay, d1						
Progression Factor						
Incremental Delay, d2						
Delay (s)						
Level of Service						
Approach Delay (s)	0.0			0.0	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	0.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	24.5	Sum of lost time (s)	0.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	0	47	6	0	0	5	762	55	48	397	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0		3.0	2.6	2.6	3.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.91	
Frt		1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00	0.95	0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	1583	1681	1681		1770	3539	1583	1770	5080	
Flt Permitted		0.95	1.00	0.95	0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1770	1583	1681	1681		1770	3539	1583	1770	5080	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	0	52	7	0	0	6	847	61	53	441	3
RTOR Reduction (vph)	0	0	45	0	0	0	0	0	28	0	0	0
Lane Group Flow (vph)	0	26	7	3	4	0	6	847	33	53	444	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			
Actuated Green, G (s)		7.6	7.6	2.5	2.5		0.7	29.6	29.6	4.0	32.9	
Effective Green, g (s)		8.6	8.6	3.5	3.5		1.7	33.0	33.0	5.0	36.3	
Actuated g/C Ratio		0.14	0.14	0.06	0.06		0.03	0.53	0.53	0.08	0.59	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2		2.0	3.9	3.9	2.0	3.9	
Lane Grp Cap (vph)		247	221	95	95		49	1893	847	143	2989	
v/s Ratio Prot		c0.01		0.00	c0.00		0.00	c0.24		c0.03	0.09	
v/s Ratio Perm			0.00						0.02			
v/c Ratio		0.11	0.03	0.03	0.04		0.12	0.45	0.04	0.37	0.15	
Uniform Delay, d1		23.2	23.0	27.5	27.5		29.3	8.8	6.8	26.9	5.7	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.0	0.0	0.1		0.4	0.2	0.0	0.6	0.0	
Delay (s)		23.3	23.0	27.5	27.6		29.7	9.0	6.8	27.5	5.8	
Level of Service		C	C	C	C		C	A	A	C	A	
Approach Delay (s)		23.1			27.6			9.0			8.1	
Approach LOS		C			C			A			A	

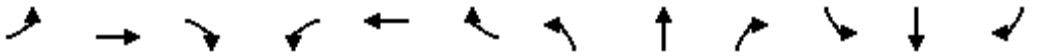
Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	11.6
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	7	95	84	8	49	80	949	19	6	844	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780	1547		1782	1583	1770	5066		1770	5061	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1780	1547		1782	1583	1770	5066		1770	5061	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	104	8	106	93	9	54	89	1054	21	7	938	24
RTOR Reduction (vph)	0	0	88	0	0	47	0	1	0	0	2	0
Lane Group Flow (vph)	0	112	18	0	102	7	89	1074	0	7	960	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		10.0	10.0		7.2	7.2	6.8	36.4		0.9	30.5	
Effective Green, g (s)		12.3	12.3		9.5	9.5	7.8	39.4		1.9	33.5	
Actuated g/C Ratio		0.17	0.17		0.13	0.13	0.11	0.53		0.03	0.45	
Clearance Time (s)		5.3	5.3		4.0	4.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		297	258		229	204	187	2705		46	2297	
v/s Ratio Prot		c0.06			c0.06		c0.05	c0.21		0.00	0.19	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.38	0.07		0.45	0.03	0.48	0.40		0.15	0.42	
Uniform Delay, d1		27.3	25.9		29.7	28.1	31.1	10.2		35.2	13.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.5	0.0	0.7	0.2		0.6	0.3	
Delay (s)		27.6	26.0		30.2	28.2	31.8	10.4		35.7	13.8	
Level of Service		C	C		C	C	C	B		D	B	
Approach Delay (s)		26.8			29.5			12.0			14.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	7.7
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

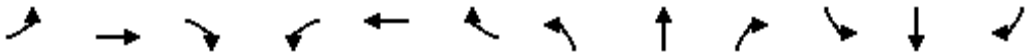
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	294	118	147	106	124	43	817	96	119	750	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1535	1770	3539	1534	1770	5085	1560	1770	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1535	1770	3539	1534	1770	5085	1560	1770	5085	1560
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	200	327	131	163	118	138	48	908	107	132	833	110
RTOR Reduction (vph)	0	0	109	0	0	118	0	0	0	0	0	0
Lane Group Flow (vph)	200	327	22	163	118	20	48	908	107	132	833	110
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	17.9	17.0	17.0	15.4	14.5	14.5	6.9	54.9	120.0	13.3	61.0	120.0
Effective Green, g (s)	18.9	20.0	20.0	16.4	17.5	17.5	7.9	57.9	120.0	14.3	64.0	120.0
Actuated g/C Ratio	0.16	0.17	0.17	0.14	0.15	0.15	0.07	0.48	1.00	0.12	0.53	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	279	590	256	242	516	224	117	2454	1560	211	2712	1560
v/s Ratio Prot	c0.11	c0.09		0.09	0.03		0.03	c0.18		c0.07	0.16	
v/s Ratio Perm			0.01			0.01			0.07			c0.07
v/c Ratio	0.72	0.55	0.09	0.67	0.23	0.09	0.41	0.37	0.07	0.63	0.31	0.07
Uniform Delay, d1	48.0	45.9	42.3	49.3	45.3	44.4	53.8	19.6	0.0	50.3	15.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	1.3	0.2	5.7	0.3	0.2	0.9	0.2	0.1	4.1	0.3	0.1
Delay (s)	55.1	47.2	42.4	55.0	45.6	44.6	54.7	19.7	0.1	54.4	15.9	0.1
Level of Service	E	D	D	D	D	D	D	B	A	D	B	A
Approach Delay (s)		48.7			48.9			19.3			19.0	
Approach LOS		D			D			B			B	

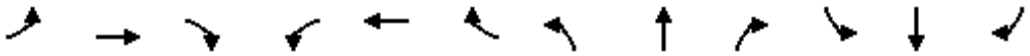
Intersection Summary			
HCM Average Control Delay	29.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	1	33	32	1	19	18	941	0	5	1026	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.91	
Frt		0.93			0.95		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1696			1718		1770	3539		1770	5079	
Flt Permitted		0.84			0.74		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1456			1312		1770	3539		1770	5079	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	1	37	36	1	21	20	1046	0	6	1140	9
RTOR Reduction (vph)	0	34	0	0	19	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	40	0	0	39	0	20	1046	0	6	1149	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		9.3			9.3		7.9	95.8		1.2	89.1	
Effective Green, g (s)		10.3			10.3		8.9	98.5		2.2	91.8	
Actuated g/C Ratio		0.09			0.09		0.07	0.82		0.02	0.76	
Clearance Time (s)		4.0			4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		125			113		131	2905		32	3885	
v/s Ratio Prot							0.01	c0.30		0.00	c0.23	
v/s Ratio Perm		0.03			c0.03							
v/c Ratio		0.32			0.34		0.15	0.36		0.19	0.30	
Uniform Delay, d1		51.6			51.7		52.0	2.7		58.0	4.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.5			1.8		0.2	0.3		1.0	0.1	
Delay (s)		53.1			53.5		52.2	3.1		59.1	4.3	
Level of Service		D			D		D	A		E	A	
Approach Delay (s)		53.1			53.5			4.0			4.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	76	129	108	59	37	77	953	48	88	1428	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	1863	1562	1770	5085	1562	1770	5073	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	1863	1562	1770	5085	1562	1770	5073	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	84	143	120	66	41	86	1059	53	98	1587	24
RTOR Reduction (vph)	0	0	125	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	84	84	18	120	66	41	86	1059	53	98	1610	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	8.9	12.0	12.0	8.6	11.7	120.0	8.9	68.8	120.0	10.9	70.8	
Effective Green, g (s)	9.9	15.0	15.0	9.6	14.7	120.0	9.9	71.8	120.0	11.9	73.8	
Actuated g/C Ratio	0.08	0.12	0.12	0.08	0.12	1.00	0.08	0.60	1.00	0.10	0.61	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	146	442	193	275	228	1562	146	3043	1562	176	3120	
v/s Ratio Prot	c0.05	0.02		0.03	c0.04		c0.05	0.21		0.06	c0.32	
v/s Ratio Perm			0.01			0.03			c0.03			
v/c Ratio	0.58	0.19	0.09	0.44	0.29	0.03	0.59	0.35	0.03	0.56	0.52	
Uniform Delay, d1	53.0	47.1	46.5	52.6	47.9	0.0	53.1	12.2	0.0	51.5	13.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.4	0.3	0.3	0.4	0.9	0.0	3.9	0.1	0.0	2.2	0.6	
Delay (s)	56.4	47.3	46.7	53.0	48.8	0.0	57.0	12.3	0.0	53.7	13.6	
Level of Service	E	D	D	D	D	A	E	B	A	D	B	
Approach Delay (s)		49.5			42.2			15.0			15.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

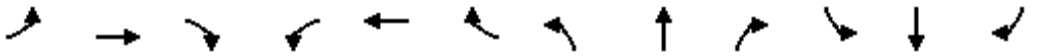
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	257	106	1074	206	88	1621
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	3.0	2.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	286	118	1193	229	98	1801
RTOR Reduction (vph)	0	0	0	44	0	0
Lane Group Flow (vph)	286	118	1193	185	98	1801
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	22.6	89.2	40.2	40.2	10.4	56.6
Effective Green, g (s)	23.6	89.2	42.2	42.2	11.4	58.6
Actuated g/C Ratio	0.26	1.00	0.47	0.47	0.13	0.66
Clearance Time (s)	6.0		6.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	468	1583	1674	749	226	2325
v/s Ratio Prot	c0.16		0.34		0.06	c0.51
v/s Ratio Perm		0.07		0.12		
v/c Ratio	0.61	0.07	0.71	0.25	0.43	0.77
Uniform Delay, d1	28.8	0.0	18.7	14.0	35.9	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.1	1.5	0.2	0.5	1.7
Delay (s)	31.1	0.1	20.2	14.2	36.4	12.4
Level of Service	C	A	C	B	D	B
Approach Delay (s)	22.1		19.2			13.6
Approach LOS	C		B			B

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	89.2	Sum of lost time (s)	7.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	80	25	306	130	14	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	89	28	340	144	16	422
RTOR Reduction (vph)	0	22	0	62	0	0
Lane Group Flow (vph)	89	6	340	82	16	422
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.0	9.0	24.2	24.2	0.8	29.0
Effective Green, g (s)	10.5	10.5	27.2	27.2	1.8	32.0
Actuated g/C Ratio	0.22	0.22	0.57	0.57	0.04	0.67
Clearance Time (s)	4.0	4.0	6.0	6.0	4.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	387	346	2005	897	66	1242
v/s Ratio Prot	c0.05		0.10		0.01	c0.23
v/s Ratio Perm		0.00		0.05		
v/c Ratio	0.23	0.02	0.17	0.09	0.24	0.34
Uniform Delay, d1	15.4	14.7	5.0	4.8	22.4	3.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.1	0.1	0.7	0.3
Delay (s)	15.7	14.7	5.1	4.8	23.1	3.8
Level of Service	B	B	A	A	C	A
Approach Delay (s)	15.5		5.0			4.5
Approach LOS	B		A			A

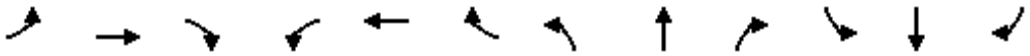
Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	5.5
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	5	13	66	0	155	4	571	30	145	522	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	2.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.93			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.99			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1710			1770	1558	1770	3509		1770	1863	1540
Flt Permitted		0.94			0.74	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1635			1378	1558	1770	3509		1770	1863	1540
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	6	14	73	0	172	4	634	33	161	580	29
RTOR Reduction (vph)	0	11	0	0	0	132	0	4	0	0	0	9
Lane Group Flow (vph)	0	16	0	0	73	40	4	663	0	161	580	20
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		Perm
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						6
Actuated Green, G (s)		11.1			11.1	11.1	0.9	19.3		7.7	26.1	26.1
Effective Green, g (s)		12.1			12.1	12.1	1.9	22.3		8.7	29.1	29.1
Actuated g/C Ratio		0.23			0.23	0.23	0.04	0.43		0.17	0.56	0.56
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)		382			322	364	65	1511		297	1047	865
v/s Ratio Prot							0.00	0.19		c0.09	c0.31	
v/s Ratio Perm		0.01			c0.05	0.03						0.01
v/c Ratio		0.04			0.23	0.11	0.06	0.44		0.54	0.55	0.02
Uniform Delay, d1		15.4			16.1	15.6	24.1	10.4		19.7	7.2	5.0
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.0			0.1	0.0	0.1	0.4		1.1	0.9	0.0
Delay (s)		15.4			16.2	15.7	24.2	10.7		20.8	8.2	5.1
Level of Service		B			B	B	C	B		C	A	A
Approach Delay (s)		15.4			15.8			10.8			10.7	
Approach LOS		B			B			B			B	

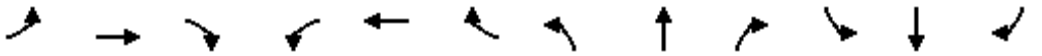
Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	1	58	18	1	13	30	538	48	17	578	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1775	1531		1778	1478	1770	3539	1544	1770	3517	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1775	1531		1778	1478	1770	3539	1544	1770	3517	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	1	64	20	1	14	33	598	53	19	642	24
RTOR Reduction (vph)	0	0	58	0	0	13	0	0	16	0	2	0
Lane Group Flow (vph)	0	73	6	0	21	1	33	598	37	19	664	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		8.1	8.1		3.8	3.8	8.6	57.8	57.8	2.6	51.8	
Effective Green, g (s)		9.1	9.1		4.8	4.8	9.6	60.8	58.8	3.6	54.8	
Actuated g/C Ratio		0.10	0.10		0.05	0.05	0.11	0.68	0.65	0.04	0.61	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		179	155		95	79	189	2391	1009	71	2141	
v/s Ratio Prot		c0.04			c0.01		0.02	c0.17		0.01	c0.19	
v/s Ratio Perm			0.00			0.00			0.02			
v/c Ratio		0.41	0.04		0.22	0.01	0.17	0.25	0.04	0.27	0.31	
Uniform Delay, d1		37.9	36.5		40.8	40.3	36.6	5.7	5.5	41.9	8.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6	0.0		0.4	0.0	0.2	0.1	0.0	0.7	0.4	
Delay (s)		38.5	36.6		41.2	40.4	36.8	5.8	5.6	42.7	8.9	
Level of Service		D	D		D	D	D	A	A	D	A	
Approach Delay (s)		37.6			40.9			7.3			9.8	
Approach LOS		D			D			A			A	

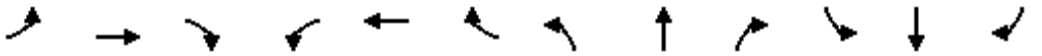
Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	208	0	494	3	3	1	153	404	0	2	556	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	231	0	549	3	3	1	170	449	0	2	618	128
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	54
Lane Group Flow (vph)	115	116	549	3	3	0	170	449	0	2	618	74
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	11.6	11.6	90.0	4.2	4.2		8.8	55.1		1.4	49.7	49.7
Effective Green, g (s)	13.6	13.6	90.0	6.2	6.2		10.8	57.1		3.4	51.7	51.7
Actuated g/C Ratio	0.15	0.15	1.00	0.07	0.07		0.12	0.63		0.04	0.57	0.57
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.9		2.0	4.3	4.3
Lane Grp Cap (vph)	254	254	1478	122	124		412	2245		67	2033	849
v/s Ratio Prot	0.07	c0.07		0.00	0.00		c0.05	0.13		0.00	0.17	
v/s Ratio Perm			c0.37									0.05
v/c Ratio	0.45	0.46	0.37	0.02	0.02		0.41	0.20		0.03	0.30	0.09
Uniform Delay, d1	34.8	34.8	0.0	39.1	39.1		36.7	6.9		41.7	9.9	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.7	0.0	0.0		0.2	0.2		0.1	0.1	0.1
Delay (s)	35.3	35.3	0.7	39.1	39.1		36.9	7.1		41.8	10.0	8.6
Level of Service	D	D	A	D	D		D	A		D	B	A
Approach Delay (s)		11.0			39.1			15.3			9.9	
Approach LOS		B			D			B			A	

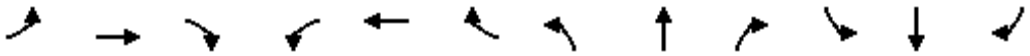
Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	2.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



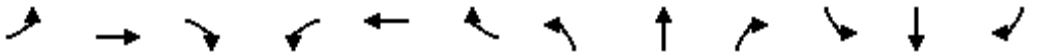
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	0	22	45	0	40	16	239	8	37	318	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583	1770	1583		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1583	1770	1583		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	63	0	24	50	0	44	18	266	9	41	353	7
RTOR Reduction (vph)	0	0	21	0	38	0	0	0	5	0	0	4
Lane Group Flow (vph)	31	32	3	50	6	0	18	266	4	41	353	3
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	6.1	6.1	6.1	7.2	7.2		0.8	21.5	21.5	2.2	22.9	22.9
Effective Green, g (s)	6.1	6.1	6.1	7.2	7.2		0.8	21.5	21.5	2.2	22.9	22.9
Actuated g/C Ratio	0.11	0.11	0.11	0.13	0.13		0.01	0.40	0.40	0.04	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	189	189	178	235	210		26	1401	627	72	1493	668
v/s Ratio Prot	0.02	c0.02		c0.03	0.00		0.01	0.08		c0.02	c0.10	
v/s Ratio Perm			0.00						0.00			0.00
v/c Ratio	0.16	0.17	0.02	0.21	0.03		0.69	0.19	0.01	0.57	0.24	0.00
Uniform Delay, d1	21.8	21.8	21.4	21.0	20.5		26.6	10.7	9.9	25.6	10.1	9.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.0	0.2	0.0		48.6	0.1	0.0	6.0	0.1	0.0
Delay (s)	21.9	22.0	21.4	21.2	20.5		75.3	10.8	9.9	31.6	10.2	9.1
Level of Service	C	C	C	C	C		E	B	A	C	B	A
Approach Delay (s)		21.8			20.9			14.7			12.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	333	9	38	206	12	29	7	19	7	49	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1718	1583		1843	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1718	1583		1843	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	370	10	42	229	13	32	8	21	8	54	2
RTOR Reduction (vph)	0	0	5	0	0	6	0	0	19	0	1	0
Lane Group Flow (vph)	3	370	5	42	229	7	20	20	2	0	63	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	0.6	22.9	22.9	2.1	24.4	24.4	3.7	3.7	3.7		3.7	
Effective Green, g (s)	2.6	24.9	24.9	3.1	26.4	26.4	4.7	4.7	4.7		5.7	
Actuated g/C Ratio	0.05	0.50	0.50	0.06	0.53	0.53	0.09	0.09	0.09		0.11	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	92	1759	787	110	1865	834	158	161	149		210	
v/s Ratio Prot	0.00	c0.10		c0.02	0.06		c0.01	0.01			c0.03	
v/s Ratio Perm			0.00			0.00			0.00			
v/c Ratio	0.03	0.21	0.01	0.38	0.12	0.01	0.13	0.12	0.01		0.30	
Uniform Delay, d1	22.6	7.1	6.4	22.6	6.0	5.6	20.8	20.8	20.6		20.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.8	0.0	0.0	0.1	0.1	0.0		0.3	
Delay (s)	22.6	7.2	6.4	23.4	6.0	5.6	20.9	20.9	20.6		20.7	
Level of Service	C	A	A	C	A	A	C	C	C		C	
Approach Delay (s)		7.3			8.6			20.8			20.7	
Approach LOS		A			A			C			C	

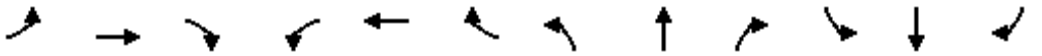
Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	50.1	Sum of lost time (s)	11.7
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	266	57	28	163	13	27	6	16	22	25	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1715	1478	1681	1764	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1715	1478	1681	1764	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	296	63	31	181	14	30	7	18	24	28	67
RTOR Reduction (vph)	0	0	34	0	0	8	0	0	17	0	0	58
Lane Group Flow (vph)	36	296	29	31	181	6	18	19	1	22	30	9
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	1.9	17.2	17.2	1.8	17.1	17.1	1.7	1.7	1.7	4.0	4.0	4.0
Effective Green, g (s)	2.9	19.9	19.9	2.8	19.8	19.8	2.7	2.7	2.7	5.0	5.9	5.9
Actuated g/C Ratio	0.07	0.46	0.46	0.07	0.46	0.46	0.06	0.06	0.06	0.12	0.14	0.14
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	119	1638	684	115	1630	681	106	108	93	195	242	203
v/s Ratio Prot	c0.02	c0.08		0.02	0.05		0.01	c0.01		0.01	c0.02	
v/s Ratio Perm			0.02			0.00			0.00			0.01
v/c Ratio	0.30	0.18	0.04	0.27	0.11	0.01	0.17	0.18	0.01	0.11	0.12	0.05
Uniform Delay, d1	19.1	6.8	6.3	19.1	6.6	6.3	19.1	19.1	18.9	17.0	16.3	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.0	0.5	0.0	0.0	0.3	0.3	0.0	0.4	0.3	0.1
Delay (s)	19.6	6.8	6.4	19.6	6.6	6.3	19.4	19.4	18.9	17.4	16.6	16.2
Level of Service	B	A	A	B	A	A	B	B	B	B	B	B
Approach Delay (s)		7.9			8.4			19.2			16.5	
Approach LOS		A			A			B			B	

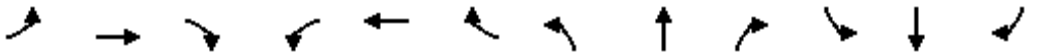
Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	43.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



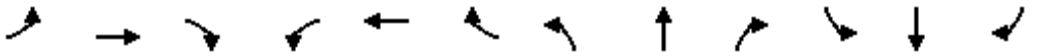
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	268	29	17	150	3	28	7	2	0	7	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97			1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1700			1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97			1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1700			1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	298	32	19	167	3	31	8	2	0	8	7
RTOR Reduction (vph)	0	0	15	0	0	1	0	2	0	0	0	7
Lane Group Flow (vph)	20	298	17	19	167	2	20	19	0	0	8	0
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8						1
Actuated Green, G (s)	0.6	21.2	21.2	0.6	21.2	21.2	3.8	3.8			0.6	0.6
Effective Green, g (s)	1.6	23.2	23.2	1.6	23.2	23.2	4.8	4.8			1.6	1.6
Actuated g/C Ratio	0.04	0.54	0.54	0.04	0.54	0.54	0.11	0.11			0.04	0.04
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3	3.5	3.5			2.0	2.0
Lane Grp Cap (vph)	66	1901	850	66	1901	850	187	189			69	59
v/s Ratio Prot	c0.01	c0.08		0.01	0.05		c0.01	0.01			c0.00	
v/s Ratio Perm			0.01			0.00						0.00
v/c Ratio	0.30	0.16	0.02	0.29	0.09	0.00	0.11	0.10			0.12	0.00
Uniform Delay, d1	20.3	5.1	4.7	20.2	4.9	4.6	17.3	17.3			20.1	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.9	0.1	0.0	0.9	0.0	0.0	0.3	0.3			0.3	0.0
Delay (s)	21.2	5.1	4.7	21.1	4.9	4.6	17.6	17.5			20.4	20.0
Level of Service	C	A	A	C	A	A	B	B			C	C
Approach Delay (s)		6.0			6.5			17.6			20.2	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	154	106	3	99	53	54	12	5	14	56	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	1.00
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1513	1543	1425		1659	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	1.00
Satd. Flow (perm)	1593	3185	1425	1593	3185	1425	1513	1543	1425		1659	1425
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	171	118	3	110	59	60	13	6	16	62	14
RTOR Reduction (vph)	0	0	51	0	0	36	0	0	5	0	0	12
Lane Group Flow (vph)	29	171	67	3	110	23	36	37	1	0	78	2
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	0.8	16.5	24.1	0.5	16.2	16.2	7.6	7.6	7.6		4.3	4.3
Effective Green, g (s)	1.8	18.5	26.1	1.5	18.2	18.2	8.6	8.6	8.6		5.3	5.3
Actuated g/C Ratio	0.04	0.40	0.57	0.03	0.40	0.40	0.19	0.19	0.19		0.12	0.12
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	62	1284	810	52	1263	565	283	289	267		192	165
v/s Ratio Prot	c0.02	c0.05	0.02	0.00	c0.03		0.02	c0.02			c0.05	
v/s Ratio Perm			0.03			0.02			0.00			0.00
v/c Ratio	0.47	0.13	0.08	0.06	0.09	0.04	0.13	0.13	0.00		0.41	0.01
Uniform Delay, d1	21.6	8.6	4.5	21.5	8.7	8.5	15.5	15.5	15.2		18.8	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	0.1	0.1	0.2	0.0	0.0	0.2	0.2	0.0		0.5	0.0
Delay (s)	23.6	8.7	4.5	21.7	8.7	8.5	15.8	15.8	15.2		19.4	18.0
Level of Service	C	A	A	C	A	A	B	B	B		B	B
Approach Delay (s)		8.5			8.9			15.7			19.1	
Approach LOS		A			A			B			B	

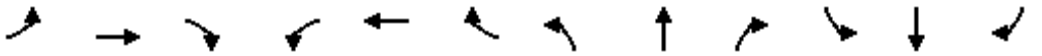
Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	25.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	34	86	50	15	7	21	494	73	25	909	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1637		3433	1765		1676	4984	1413	1745	5187	1472
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1637		3433	1765		1676	4984	1413	1745	5187	1472
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	113	38	96	56	17	8	23	549	81	28	1010	56
RTOR Reduction (vph)	0	77	0	0	7	0	0	0	38	0	0	26
Lane Group Flow (vph)	113	57	0	56	18	0	23	549	43	28	1010	30
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	14.0	11.9		5.6	4.8		2.2	38.0	38.0	2.3	38.1	38.1
Effective Green, g (s)	15.0	12.9		6.6	5.8		3.2	41.4	41.4	3.3	41.5	41.5
Actuated g/C Ratio	0.19	0.17		0.09	0.08		0.04	0.54	0.54	0.04	0.54	0.54
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	343	274		294	133		70	2676	759	75	2792	792
v/s Ratio Prot	c0.06	0.03		c0.02	0.01		0.01	0.11		c0.02	c0.19	
v/s Ratio Perm									0.03			0.02
v/c Ratio	0.33	0.21		0.19	0.13		0.33	0.21	0.06	0.37	0.36	0.04
Uniform Delay, d1	26.7	27.7		32.8	33.3		35.9	9.3	8.5	35.9	10.2	8.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3		0.1	0.2		1.0	0.1	0.1	1.1	0.2	0.0
Delay (s)	26.9	28.0		32.9	33.5		36.9	9.4	8.6	37.0	10.4	8.4
Level of Service	C	C		C	C		D	A	A	D	B	A
Approach Delay (s)		27.5			33.1			10.2			10.9	
Approach LOS		C			C			B			B	

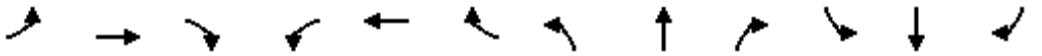
Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	77.1	Sum of lost time (s)	6.0
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



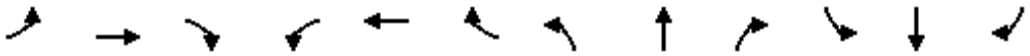
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	87	75	167	75	10	46	561	55	31	1001	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00		0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	1830		3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	1830		3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	97	83	186	83	11	51	623	61	34	1112	37
RTOR Reduction (vph)	0	0	75	0	4	0	0	0	23	0	0	15
Lane Group Flow (vph)	38	97	8	186	90	0	51	623	38	34	1112	22
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	3.9	11.2	11.2	10.9	18.2		5.3	75.5	75.5	3.8	72.9	72.9
Effective Green, g (s)	3.9	11.2	11.2	10.9	18.2		5.3	75.5	75.5	3.8	72.9	72.9
Actuated g/C Ratio	0.03	0.09	0.09	0.09	0.15		0.04	0.63	0.63	0.03	0.61	0.61
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	5.6	5.6	2.0	4.3	4.3
Lane Grp Cap (vph)	112	330	148	312	278		152	2227	996	109	3089	962
v/s Ratio Prot	0.01	0.03		c0.05	c0.05		c0.01	0.18		0.01	c0.22	
v/s Ratio Perm			0.00						0.02			0.01
v/c Ratio	0.34	0.29	0.05	0.60	0.32		0.34	0.28	0.04	0.31	0.36	0.02
Uniform Delay, d1	56.8	50.7	49.6	52.4	45.4		55.6	10.0	8.5	56.8	11.8	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.6	0.2	2.0	0.9		0.5	0.3	0.1	0.6	0.1	0.0
Delay (s)	57.4	51.4	49.8	54.5	46.3		56.1	10.3	8.5	57.4	11.9	9.4
Level of Service	E	D	D	D	D		E	B	A	E	B	A
Approach Delay (s)		51.8			51.7			13.4			13.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



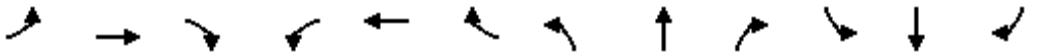
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	21	120	145	25	11	121	686	145	40	1209	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1763	1583	1610	3232		3433	5085	1583	3433	5085	1583
Flt Permitted	0.37	0.39	1.00	0.74	0.78		0.15	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	649	685	1583	1255	2605		525	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	23	133	161	28	12	134	762	161	44	1343	31
RTOR Reduction (vph)	0	0	118	0	10	0	0	0	90	0	0	12
Lane Group Flow (vph)	18	25	15	80	111	0	134	762	71	44	1343	19
Turn Type	Perm		Perm	Perm			Perm		Perm	Prot		Perm
Protected Phases		8			7			2		1	6	
Permitted Phases	8		8	7			2		2			6
Actuated Green, G (s)	10.9	10.9	10.9	12.0	12.0		41.9	41.9	41.9	10.6	57.5	57.5
Effective Green, g (s)	10.9	10.9	10.9	12.0	12.0		41.9	41.9	41.9	10.6	57.5	57.5
Actuated g/C Ratio	0.11	0.11	0.11	0.13	0.13		0.44	0.44	0.44	0.11	0.61	0.61
Clearance Time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	4.3	4.3
Lane Grp Cap (vph)	74	79	182	159	329		232	2243	698	383	3078	958
v/s Ratio Prot								0.15		0.01	c0.26	
v/s Ratio Perm	0.03	c0.04	0.01	c0.06	0.04		c0.26		0.04			0.01
v/c Ratio	0.24	0.32	0.08	0.50	0.34		0.58	0.34	0.10	0.11	0.44	0.02
Uniform Delay, d1	38.3	38.6	37.6	38.7	37.9		19.9	17.5	15.5	38.0	10.1	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	2.3	0.2	2.5	0.6		10.1	0.4	0.3	0.1	0.2	0.0
Delay (s)	40.0	40.9	37.8	41.2	38.5		30.0	17.9	15.8	38.1	10.2	7.5
Level of Service	D	D	D	D	D		C	B	B	D	B	A
Approach Delay (s)		38.5			39.6			19.1			11.0	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



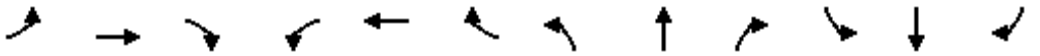
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	109	0	0	469	400	483	0	0	1439	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0			4.0	3.0	5.3			5.3	
Lane Util. Factor			1.00			1.00	1.00	0.95			0.91	
Frt			0.86			0.86	1.00	1.00			1.00	
Flt Protected			1.00			1.00	0.95	1.00			1.00	
Satd. Flow (prot)			1611			1611	1770	3539			5063	
Flt Permitted			1.00			1.00	0.95	1.00			1.00	
Satd. Flow (perm)			1611			1611	1770	3539			5063	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	121	0	0	521	444	537	0	0	1599	48
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	0	121	0	0	521	444	537	0	0	1643	0
Turn Type			Free			Free	Prot					
Protected Phases							5	2			6	
Permitted Phases			Free			Free						
Actuated Green, G (s)			60.0			60.0	20.0	60.0			30.7	
Effective Green, g (s)			60.0			60.0	21.0	60.0			30.7	
Actuated g/C Ratio			1.00			1.00	0.35	1.00			0.51	
Clearance Time (s)							4.0	5.3			5.3	
Vehicle Extension (s)							3.0	3.0			3.0	
Lane Grp Cap (vph)			1611			1611	620	3539			2591	
v/s Ratio Prot							c0.25	0.15			c0.32	
v/s Ratio Perm			0.08			0.32						
v/c Ratio			0.08			0.32	0.72	0.15			0.63	
Uniform Delay, d1			0.0			0.0	16.9	0.0			10.6	
Progression Factor			1.00			1.00	0.93	1.00			1.00	
Incremental Delay, d2			0.1			0.5	3.7	0.1			1.2	
Delay (s)			0.1			0.5	19.5	0.1			11.8	
Level of Service			A			A	B	A			B	
Approach Delay (s)		0.1			0.5			8.9			11.8	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.3
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



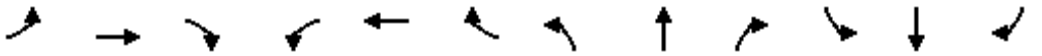
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	520	0	0	99	0	784	118	666	882	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.3			3.0		4.7	4.7	4.7	4.7	
Lane Util. Factor			0.88			1.00		0.91	1.00	0.97	0.91	
Frt			0.85			0.86		1.00	0.85	1.00	1.00	
Flt Protected			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			2787			1611		5085	1583	3433	5085	
Flt Permitted			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			2787			1611		5085	1583	3433	5085	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	578	0	0	110	0	871	131	740	980	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	62	0	0	0
Lane Group Flow (vph)	0	0	578	0	0	110	0	871	69	740	980	0
Turn Type			custom			Free			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases			5			Free			2			
Actuated Green, G (s)			17.8			60.0		24.3	24.3	24.3	31.2	
Effective Green, g (s)			17.8			60.0		25.3	25.3	25.3	32.2	
Actuated g/C Ratio			0.30			1.00		0.42	0.42	0.42	0.54	
Clearance Time (s)			5.3					5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)			827			1611		2144	667	1448	2729	
v/s Ratio Prot								c0.17		c0.22	0.19	
v/s Ratio Perm			c0.21			0.07			0.04			
v/c Ratio			0.70			0.07		0.41	0.10	0.51	0.36	
Uniform Delay, d1			18.7			0.0		12.1	10.5	12.8	8.0	
Progression Factor			1.00			1.00		0.49	0.38	0.17	0.10	
Incremental Delay, d2			2.6			0.1		0.6	0.3	0.2	0.3	
Delay (s)			21.3			0.1		6.5	4.3	2.4	1.1	
Level of Service			C			A		A	A	A	A	
Approach Delay (s)		21.3			0.1			6.3			1.7	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



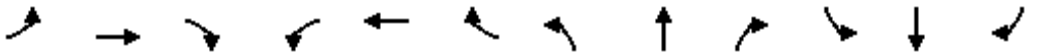
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	2	1	5	4	5	16	19	0	1	8	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.97			0.95		1.00	1.00		1.00	0.92	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1778			1736		1770	3539		1770	1716	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1800			1768		1770	3539		1770	1716	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	2	1	6	4	6	18	21	0	1	9	10
RTOR Reduction (vph)	0	1	0	0	6	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	3	0	0	10	0	18	21	0	1	14	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		0.7			0.8		0.8	19.8		0.6	19.6	
Effective Green, g (s)		0.7			0.8		0.8	19.8		0.6	19.6	
Actuated g/C Ratio		0.02			0.02		0.02	0.52		0.02	0.52	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		33			37		37	1849		28	887	
v/s Ratio Prot							c0.01	0.01		0.00	c0.01	
v/s Ratio Perm		c0.00			c0.01							
v/c Ratio		0.09			0.27		0.49	0.01		0.04	0.02	
Uniform Delay, d1		18.3			18.3		18.3	4.3		18.4	4.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			1.5		3.6	0.0		0.2	0.0	
Delay (s)		18.7			19.7		22.0	4.4		18.6	4.5	
Level of Service		B			B		C	A		B	A	
Approach Delay (s)		18.7			19.7			12.5			5.2	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.04		
Actuated Cycle Length (s)	37.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



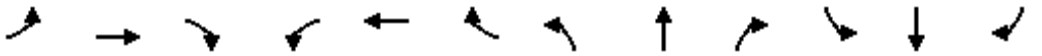
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	4	5	26	7	74	14	798	47	151	1119	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.4	3.4	3.0	2.5	3.2	3.0	2.5	3.2	3.2
Lane Util. Factor	0.86	0.86	1.00	0.86	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3044	3101	1583	3044	3117	1583	3335	4940	1538	3335	4940	1495
Flt Permitted	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3044	3101	1583	3044	3117	1583	3335	4940	1538	3335	4940	1495
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	4	6	29	8	82	16	887	52	168	1243	31
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	7
Lane Group Flow (vph)	15	12	6	19	18	82	16	887	52	168	1243	24
Confl. Peds. (#/hr)												10
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	4.4	4.4	120.0	3.7	3.7	120.0	2.3	82.9	120.0	10.4	91.0	91.0
Effective Green, g (s)	5.9	5.9	120.0	5.2	5.2	120.0	3.8	85.4	120.0	11.9	93.5	93.5
Actuated g/C Ratio	0.05	0.05	1.00	0.04	0.04	1.00	0.03	0.71	1.00	0.10	0.78	0.78
Clearance Time (s)	4.0	4.0		4.9	4.9		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.9	3.9		2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	150	152	1583	132	135	1583	106	3516	1538	331	3849	1165
v/s Ratio Prot	c0.00	0.00		c0.01	0.01		0.00	0.18		c0.05	c0.25	
v/s Ratio Perm			0.00			0.05			0.03			0.02
v/c Ratio	0.10	0.08	0.00	0.14	0.13	0.05	0.15	0.25	0.03	0.51	0.32	0.02
Uniform Delay, d1	54.5	54.5	0.0	55.3	55.2	0.0	56.5	6.1	0.0	51.3	3.9	3.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.59	1.00	1.01	1.00	1.26
Incremental Delay, d2	0.3	0.2	0.0	0.7	0.6	0.1	0.2	0.1	0.0	0.4	0.2	0.0
Delay (s)	54.8	54.7	0.0	55.9	55.8	0.1	55.0	3.6	0.0	52.2	4.1	3.8
Level of Service	D	D	A	E	E	A	D	A	A	D	A	A
Approach Delay (s)		44.8			17.4			4.3			9.7	
Approach LOS		D			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	0	165	4	1	3	121	513	2	6	914	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1791	1583	1770	3537		1770	3539	1583
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1791	1583	1770	3537		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	97	0	183	4	1	3	134	570	2	7	1016	129
RTOR Reduction (vph)	0	0	151	0	0	3	0	0	0	0	0	50
Lane Group Flow (vph)	0	97	32	0	5	0	134	572	0	7	1016	79
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)		11.9	11.9		1.2	1.2	10.1	41.3		0.8	32.0	32.0
Effective Green, g (s)		12.9	12.9		2.2	2.2	13.1	43.3		1.8	35.0	35.0
Actuated g/C Ratio		0.17	0.17		0.03	0.03	0.18	0.58		0.02	0.47	0.47
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		308	276		53	47	313	2067		43	1672	748
v/s Ratio Prot		c0.05			c0.00		c0.08	0.16		0.00	c0.29	
v/s Ratio Perm			0.02			0.00						0.05
v/c Ratio		0.31	0.12		0.09	0.00	0.43	0.28		0.16	0.61	0.11
Uniform Delay, d1		26.7	25.8		35.0	34.9	27.2	7.6		35.4	14.5	10.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2	0.1		0.3	0.0	0.3	0.1		0.7	0.8	0.1
Delay (s)		27.0	25.9		35.3	34.9	27.5	7.7		36.1	15.2	10.9
Level of Service		C	C		D	C	C	A		D	B	B
Approach Delay (s)		26.2			35.1			11.5			14.9	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	10.9
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

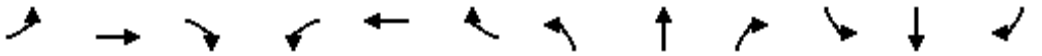


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	4	238	2	4	3	172	479	1	2	850	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1832	1583	3433	3538		1770	3539	1583
Flt Permitted	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1689	1583		1832	1583	3433	3538		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	4	264	2	4	3	191	532	1	2	944	264
RTOR Reduction (vph)	0	0	184	0	0	3	0	0	0	0	0	72
Lane Group Flow (vph)	85	86	80	0	6	0	191	533	0	2	944	192
Turn Type	Split		pm+ov	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4	5	3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)	11.8	11.8	21.1		0.7	0.7	9.3	45.2		0.6	36.5	36.5
Effective Green, g (s)	12.8	12.8	23.1		1.7	1.7	10.3	47.7		1.6	39.0	39.0
Actuated g/C Ratio	0.17	0.17	0.30		0.02	0.02	0.14	0.63		0.02	0.51	0.51
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	284	285	545		41	36	466	2226		37	1821	814
v/s Ratio Prot	0.05	c0.05	0.02		c0.00		c0.06	0.15		0.00	c0.27	
v/s Ratio Perm			0.03			0.00						0.12
v/c Ratio	0.30	0.30	0.15		0.15	0.00	0.41	0.24		0.05	0.52	0.24
Uniform Delay, d1	27.6	27.6	19.2		36.3	36.2	30.0	6.1		36.4	12.2	10.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.6	0.0		0.6	0.0	0.2	0.1		0.2	0.5	0.3
Delay (s)	28.2	28.2	19.2		36.9	36.2	30.2	6.3		36.6	12.7	10.5
Level of Service	C	C	B		D	D	C	A		D	B	B
Approach Delay (s)		22.7			36.7			12.6			12.3	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

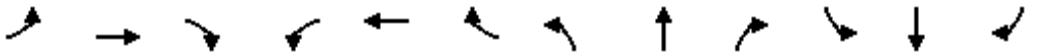
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	151	296	373	220	522	434
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	4.3
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	168	329	414	244	580	482
RTOR Reduction (vph)	0	139	0	161	0	0
Lane Group Flow (vph)	168	190	414	83	580	482
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	9.3	23.8	15.7	15.7	14.5	34.2
Effective Green, g (s)	10.3	28.4	18.0	18.0	16.8	35.2
Actuated g/C Ratio	0.20	0.54	0.34	0.34	0.32	0.67
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	5.3
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	670	902	1206	540	1092	2359
v/s Ratio Prot	c0.05	0.07	c0.12		c0.17	0.14
v/s Ratio Perm		0.05		0.05		
v/c Ratio	0.25	0.21	0.34	0.15	0.53	0.20
Uniform Delay, d1	18.0	6.4	13.0	12.1	14.8	3.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.2	0.2	0.2	0.1
Delay (s)	18.1	6.4	13.2	12.3	15.0	3.4
Level of Service	B	A	B	B	B	A
Approach Delay (s)	10.3		12.9			9.8
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	7.7
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	261	7	28	32	14	31	27	329	0	39	445	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.97			0.95		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1656			1727		1770	3539		1770	3472	
Flt Permitted	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1656			1727		1770	3539		1770	3472	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	290	8	31	36	16	34	30	366	0	43	494	72
RTOR Reduction (vph)	0	8	0	0	22	0	0	0	0	0	11	0
Lane Group Flow (vph)	165	156	0	0	64	0	30	366	0	43	555	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	10.9	10.9			5.6		2.1	18.0		3.5	19.0	
Effective Green, g (s)	10.9	10.9			5.6		2.1	18.0		3.5	19.0	
Actuated g/C Ratio	0.20	0.20			0.10		0.04	0.33		0.06	0.35	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Vehicle Extension (s)	2.0	2.0			2.0		2.0	4.2		2.0	3.2	
Lane Grp Cap (vph)	334	329			176		68	1160		113	1202	
v/s Ratio Prot	c0.10	0.09			c0.04		0.02	0.10		c0.02	c0.16	
v/s Ratio Perm												
v/c Ratio	0.49	0.47			0.37		0.44	0.32		0.38	0.46	
Uniform Delay, d1	19.5	19.5			23.0		25.8	13.8		24.7	14.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4			0.5		1.7	0.2		0.8	0.3	
Delay (s)	20.0	19.9			23.5		27.5	14.1		25.4	14.3	
Level of Service	B	B			C		C	B		C	B	
Approach Delay (s)		19.9			23.5			15.1			15.1	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	54.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

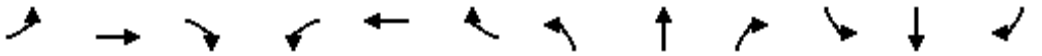


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	7	19	32	2	7	25	351	7	12	456	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786	1583		1779	1583	1770	3529		1770	3511	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1786	1583		1779	1583	1770	3529		1770	3511	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	8	21	36	2	8	28	390	8	13	507	28
RTOR Reduction (vph)	0	0	19	0	0	8	0	1	0	0	3	0
Lane Group Flow (vph)	0	59	2	0	38	0	28	397	0	13	532	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		5.0	5.0		3.3	3.3	2.0	27.7		0.8	26.5	
Effective Green, g (s)		5.0	5.0		3.3	3.3	2.0	27.7		0.8	26.5	
Actuated g/C Ratio		0.09	0.09		0.06	0.06	0.04	0.52		0.01	0.49	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)		166	147		109	97	66	1820		26	1733	
v/s Ratio Prot		c0.03			c0.02		c0.02	0.11		0.01	c0.15	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.36	0.01		0.35	0.01	0.42	0.22		0.50	0.31	
Uniform Delay, d1		22.8	22.1		24.2	23.7	25.3	7.1		26.3	8.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		0.7	0.0	1.6	0.1		5.4	0.2	
Delay (s)		23.3	22.1		24.9	23.7	26.9	7.2		31.7	8.3	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		23.0			24.7			8.5			8.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	16.9
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

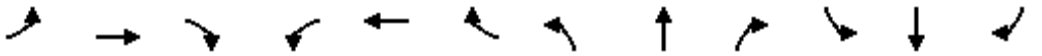
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	7	352	16	52	469
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	8	391	18	58	521
RTOR Reduction (vph)	0	7	0	7	0	0
Lane Group Flow (vph)	4	1	391	11	58	521
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	2.0	2.0	24.3	24.3	2.4	30.7
Effective Green, g (s)	4.0	4.0	27.0	27.0	4.4	33.4
Actuated g/C Ratio	0.09	0.09	0.64	0.64	0.10	0.79
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	324	149	3238	1008	184	4006
v/s Ratio Prot	c0.00		0.08		c0.03	c0.10
v/s Ratio Perm		0.00		0.01		
v/c Ratio	0.01	0.01	0.12	0.01	0.32	0.13
Uniform Delay, d1	17.4	17.4	3.0	2.8	17.6	1.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.0	0.0	0.4	0.0
Delay (s)	17.4	17.4	3.1	2.8	18.0	1.1
Level of Service	B	B	A	A	B	A
Approach Delay (s)	17.4		3.0			2.8
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	3.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	42.4	Sum of lost time (s)	4.0
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	87	12	276	262	74	29	4	12	87	4	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	4995		1770	5085	1583		1783	1583	1681	1692	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	4995		1770	5085	1583		1783	1583	1681	1692	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	97	13	307	291	82	32	4	13	97	4	13
RTOR Reduction (vph)	0	9	0	0	0	44	0	0	12	0	0	11
Lane Group Flow (vph)	38	101	0	307	291	38	0	36	1	50	51	2
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	5.4	15.8		16.3	26.7	26.7		4.9	4.9	8.9	8.9	8.9
Effective Green, g (s)	6.4	18.1		17.3	29.0	29.0		5.9	5.9	9.9	9.9	9.9
Actuated g/C Ratio	0.10	0.29		0.27	0.46	0.46		0.09	0.09	0.16	0.16	0.16
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	179	1431		485	2333	726		166	148	263	265	248
v/s Ratio Prot	0.02	0.02		c0.17	c0.06			c0.02		0.03	c0.03	
v/s Ratio Perm						0.02			0.00			0.00
v/c Ratio	0.21	0.07		0.63	0.12	0.05		0.22	0.01	0.19	0.19	0.01
Uniform Delay, d1	26.1	16.4		20.2	9.8	9.5		26.5	26.0	23.2	23.2	22.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0		2.0	0.0	0.1		0.2	0.0	0.1	0.1	0.0
Delay (s)	26.3	16.5		22.1	9.9	9.5		26.8	26.0	23.3	23.3	22.5
Level of Service	C	B		C	A	A		C	C	C	C	C
Approach Delay (s)		19.0			15.4			26.6			23.2	
Approach LOS		B			B			C			C	

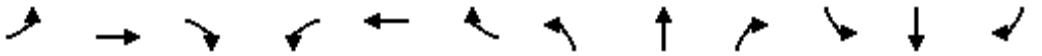
Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	424	221	35	204	59	167	292	42	44	230	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3472		1832	3663	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3472		1832	3663	1639
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	80	471	246	39	227	66	186	324	47	49	256	57
RTOR Reduction (vph)	0	0	174	0	0	49	0	10	0	0	0	43
Lane Group Flow (vph)	80	471	72	39	227	17	186	361	0	49	256	14
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	6.9	17.9	17.9	4.3	14.9	14.9	12.5	23.0		4.4	14.9	14.9
Effective Green, g (s)	7.9	19.9	19.9	5.3	17.6	17.6	13.5	25.3		5.4	17.2	17.2
Actuated g/C Ratio	0.12	0.29	0.29	0.08	0.26	0.26	0.20	0.37		0.08	0.25	0.25
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	206	1039	465	138	919	411	352	1296		146	929	416
v/s Ratio Prot	c0.05	c0.13		0.02	0.06		c0.11	c0.10		0.03	0.07	
v/s Ratio Perm			0.05			0.01						0.01
v/c Ratio	0.39	0.45	0.16	0.28	0.25	0.04	0.53	0.28		0.34	0.28	0.03
Uniform Delay, d1	27.7	19.5	17.7	29.5	19.9	18.8	24.3	14.9		29.5	20.3	19.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.6	0.3	0.4	0.2	0.1	0.7	0.2		0.5	0.3	0.1
Delay (s)	28.2	20.2	18.0	29.9	20.1	18.9	25.0	15.1		30.0	20.6	19.1
Level of Service	C	C	B	C	C	B	C	B		C	C	B
Approach Delay (s)		20.3			21.0			18.4			21.6	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	8.9
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

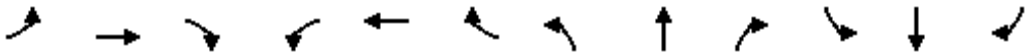


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	0	2	21	1	60	25	507	36	93	313	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1804	1599	1770	3723		1832	4029	1639
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1804	1599	1770	3723		1832	4029	1639
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	0	2	23	1	67	28	563	40	103	348	8
RTOR Reduction (vph)	0	0	2	0	0	51	0	4	0	0	0	4
Lane Group Flow (vph)	0	3	0	0	24	16	28	599	0	103	348	4
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		0.9	0.9		3.6	10.2	0.8	22.5		6.6	28.3	28.3
Effective Green, g (s)		0.9	0.9		3.6	12.2	0.8	24.8		7.6	30.6	28.3
Actuated g/C Ratio		0.02	0.02		0.07	0.24	0.02	0.49		0.15	0.60	0.56
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		31	28		128	478	28	1814		274	2422	911
v/s Ratio Prot		c0.00			c0.01	0.01	0.02	c0.16		c0.06	0.09	
v/s Ratio Perm			0.00			0.01						0.00
v/c Ratio		0.10	0.00		0.19	0.03	1.00	0.33		0.38	0.14	0.00
Uniform Delay, d1		24.6	24.6		22.3	14.8	25.1	8.0		19.5	4.4	5.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.5	0.0		0.3	0.0	170.1	0.2		0.3	0.1	0.0
Delay (s)		25.1	24.6		22.5	14.8	195.1	8.2		19.8	4.5	5.0
Level of Service		C	C		C	B	F	A		B	A	A
Approach Delay (s)		24.9			16.9			16.5			7.9	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

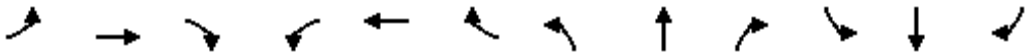
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	9	19	505	9	34	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	2.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3530		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3530		1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	21	561	10	38	383
RTOR Reduction (vph)	0	19	1	0	0	0
Lane Group Flow (vph)	10	2	570	0	38	383
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	3.9	3.9	25.1		2.2	31.2
Effective Green, g (s)	4.9	4.9	27.1		3.2	33.2
Actuated g/C Ratio	0.11	0.11	0.62		0.07	0.75
Clearance Time (s)	4.0	4.0	4.8		4.0	4.9
Vehicle Extension (s)	2.0	2.0	3.9		2.0	2.9
Lane Grp Cap (vph)	197	176	2174		129	2670
v/s Ratio Prot	c0.01		c0.16		c0.02	0.11
v/s Ratio Perm		0.00				
v/c Ratio	0.05	0.01	0.26		0.29	0.14
Uniform Delay, d1	17.5	17.4	3.9		19.3	1.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.0	0.1		0.5	0.0
Delay (s)	17.5	17.4	4.0		19.8	1.5
Level of Service	B	B	A		B	A
Approach Delay (s)	17.4		4.0			3.2
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	4.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	44.0	Sum of lost time (s)	8.8
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	14	0	21	0	1239	26	12	1175	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		3.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3528		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3528		1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	16	0	23	0	1377	29	13	1306	0
RTOR Reduction (vph)	0	0	0	0	0	22	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	16	0	1	0	1405	0	13	1306	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				3.1		3.1		54.3		1.0	59.3	
Effective Green, g (s)				4.1		4.1		56.3		2.0	61.3	
Actuated g/C Ratio				0.05		0.05		0.71		0.03	0.78	
Clearance Time (s)				4.0		4.0		4.9		4.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				92		82		2517		45	2750	
v/s Ratio Prot				c0.01				c0.40		0.01	c0.37	
v/s Ratio Perm						0.00						
v/c Ratio				0.17		0.01		0.56		0.29	0.47	
Uniform Delay, d1				35.8		35.5		5.4		37.8	3.1	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.3		0.0		0.5		1.3	0.3	
Delay (s)				36.1		35.5		5.9		39.0	3.4	
Level of Service				D		D		A		D	A	
Approach Delay (s)		0.0			35.8			5.9			3.8	
Approach LOS		A			D			A			A	

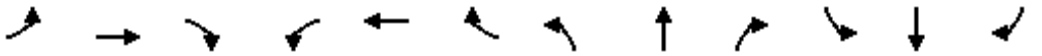
Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	78.9	Sum of lost time (s)	16.4
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	20	33	41	8	64	16	1202	35	45	1082	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.87		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1688		1770	1575		1770	3519		1770	3529	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1688		1770	1575		1770	3519		1770	3529	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	34	22	37	46	9	71	18	1336	39	50	1202	18
RTOR Reduction (vph)	0	34	0	0	64	0	0	1	0	0	1	0
Lane Group Flow (vph)	34	25	0	46	16	0	18	1374	0	50	1219	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split			Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	6.0	6.0		7.0	7.0		2.3	48.4		5.8	52.3	
Effective Green, g (s)	7.0	7.0		8.0	8.0		3.3	50.4		6.8	54.3	
Actuated g/C Ratio	0.08	0.08		0.09	0.09		0.04	0.60		0.08	0.64	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7		2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	147	140		168	149		69	2099		142	2268	
v/s Ratio Prot	c0.02	0.01		c0.03	0.01		0.01	c0.39		c0.03	0.35	
v/s Ratio Perm												
v/c Ratio	0.23	0.18		0.27	0.11		0.26	0.65		0.35	0.54	
Uniform Delay, d1	36.2	36.1		35.6	35.0		39.4	11.3		36.8	8.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.5		0.7	0.3		0.7	0.9		0.6	0.3	
Delay (s)	36.9	36.6		36.3	35.2		40.2	12.2		37.3	8.6	
Level of Service	D	D		D	D		D	B		D	A	
Approach Delay (s)		36.7			35.6			12.5			9.7	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	12.3
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

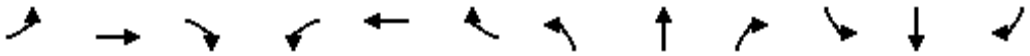
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	23	5	60	19	52	7	1283	13	17	1022	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		2044	1554		2034	1557	1770	3466		1770	3471	1545
Flt Permitted		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		2044	1554		2034	1557	1770	3466		1770	3471	1545
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	26	6	67	21	58	8	1426	14	19	1136	52
RTOR Reduction (vph)	0	0	5	0	0	51	0	1	0	0	0	23
Lane Group Flow (vph)	0	76	1	0	88	7	8	1439	0	19	1136	29
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases			1			2						8
Actuated Green, G (s)		4.4	4.4		5.8	5.8	1.1	30.8		1.3	31.0	31.0
Effective Green, g (s)		5.4	5.4		6.8	6.8	2.1	33.5		2.3	33.7	33.7
Actuated g/C Ratio		0.09	0.09		0.11	0.11	0.04	0.56		0.04	0.56	0.56
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	3.8
Lane Grp Cap (vph)		184	140		231	176	62	1935		68	1950	868
v/s Ratio Prot		c0.04			c0.04		0.00	c0.42		c0.01	0.33	
v/s Ratio Perm			0.00			0.00						0.02
v/c Ratio		0.41	0.00		0.38	0.04	0.13	0.74		0.28	0.58	0.03
Uniform Delay, d1		25.8	24.9		24.6	23.7	28.1	10.0		28.0	8.6	5.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.15	1.20	1.77
Incremental Delay, d2		0.5	0.0		0.4	0.0	0.3	2.6		0.7	0.4	0.0
Delay (s)		26.4	24.9		25.0	23.7	28.4	12.6		33.1	10.7	10.4
Level of Service		C	C		C	C	C	B		C	B	B
Approach Delay (s)		26.2			24.5			12.7			11.1	
Approach LOS		C			C			B			B	

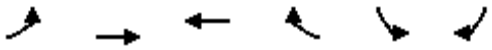
Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



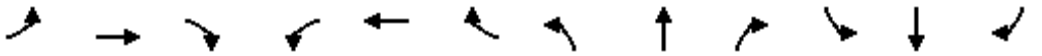
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	0	19	61	0	33	6	1270	13	8	1051	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00		0.97	1.00		0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1540	1770		1540	1770	3533		1770	3537	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1540	1770		1540	1770	3533		1770	3537	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	0	21	68	0	37	7	1411	14	9	1168	4
RTOR Reduction (vph)	0	0	19	0	0	33	0	1	0	0	0	0
Lane Group Flow (vph)	11	0	2	68	0	4	7	1424	0	9	1172	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	5.4		5.4	5.4		5.4	1.1	35.4		1.1	35.4	
Effective Green, g (s)	6.4		6.4	6.4		6.4	2.1	36.9		3.1	36.9	
Actuated g/C Ratio	0.10		0.10	0.10		0.10	0.03	0.60		0.05	0.60	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	186		162	186		162	61	2137		90	2140	
v/s Ratio Prot	0.01			c0.04			0.00	c0.40		c0.01	0.33	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.06		0.01	0.37		0.02	0.11	0.67		0.10	0.55	
Uniform Delay, d1	24.6		24.5	25.4		24.5	28.5	8.0		27.6	7.1	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0		0.0	0.4		0.0	0.3	1.7		0.2	0.3	
Delay (s)	24.6		24.5	25.9		24.5	28.9	9.6		27.8	7.5	
Level of Service	C		C	C		C	C	A		C	A	
Approach Delay (s)		24.5			25.4			9.7			7.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



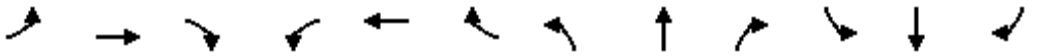
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	16	177	268	19	4	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	3.9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	18	197	298	21	4	12
RTOR Reduction (vph)	0	0	0	8	0	11
Lane Group Flow (vph)	18	197	298	13	4	1
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	32.2	27.5	27.5	2.3	2.3
Effective Green, g (s)	1.7	33.2	28.5	28.5	3.3	3.3
Actuated g/C Ratio	0.04	0.74	0.63	0.63	0.07	0.07
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	2.0
Lane Grp Cap (vph)	67	2605	2236	1000	130	116
v/s Ratio Prot	c0.01	0.06	c0.08		c0.00	
v/s Ratio Perm				0.01		0.00
v/c Ratio	0.27	0.08	0.13	0.01	0.03	0.01
Uniform Delay, d1	21.1	1.7	3.3	3.1	19.4	19.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.0	0.0	0.0	0.0	0.0
Delay (s)	21.9	1.7	3.4	3.1	19.4	19.4
Level of Service	C	A	A	A	B	B
Approach Delay (s)		3.4	3.4		19.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	3.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	45.1	Sum of lost time (s)	11.6
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



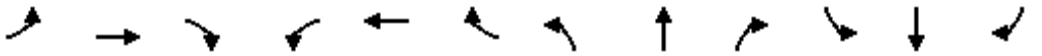
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	133	212	23	110	5	248	320	51	4	308	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	148	236	26	122	6	276	356	57	4	342	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	36	148	236	26	122	6	276	356	57	4	342	56
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	3.6	13.2	68.5	2.3	12.3	68.5	15.2	33.1	68.5	0.9	18.8	68.5
Effective Green, g (s)	4.6	15.9	68.5	3.3	15.0	68.5	16.2	35.4	68.5	1.9	21.1	68.5
Actuated g/C Ratio	0.07	0.23	1.00	0.05	0.22	1.00	0.24	0.52	1.00	0.03	0.31	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	119	821	1583	85	775	1583	419	1829	1583	49	1090	1583
v/s Ratio Prot	c0.02	c0.04		0.01	0.03		c0.16	0.10		0.00	c0.10	
v/s Ratio Perm			c0.15			0.00			0.04			0.04
v/c Ratio	0.30	0.18	0.15	0.31	0.16	0.00	0.66	0.19	0.04	0.08	0.31	0.04
Uniform Delay, d1	30.4	21.1	0.0	31.5	21.6	0.0	23.6	8.9	0.0	32.4	18.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.2	0.7	0.2	0.0	2.8	0.1	0.0	0.3	0.3	0.0
Delay (s)	30.9	21.2	0.2	32.2	21.8	0.0	26.5	9.0	0.0	32.7	18.5	0.0
Level of Service	C	C	A	C	C	A	C	A	A	C	B	A
Approach Delay (s)		10.3			22.7			15.3			16.1	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	68.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	35	41	36	7	24	18	962	26	81	371	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1788	1583	1770	3525		1770	3534	
Flt Permitted		0.93	1.00		0.73	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1736	1583		1355	1583	1770	3525		1770	3534	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	39	46	40	8	27	20	1069	29	90	412	4
RTOR Reduction (vph)	0	0	40	0	0	23	0	2	0	0	1	0
Lane Group Flow (vph)	0	49	6	0	48	4	20	1096	0	90	415	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		6.3	6.3		6.3	6.3	2.4	32.6		6.5	36.7	
Effective Green, g (s)		7.9	7.9		7.9	7.9	3.4	35.3		7.5	39.4	
Actuated g/C Ratio		0.13	0.13		0.13	0.13	0.06	0.59		0.12	0.66	
Clearance Time (s)		4.9	4.9		4.9	4.9	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		229	208		178	208	100	2074		221	2321	
v/s Ratio Prot							0.01	c0.31		c0.05	0.12	
v/s Ratio Perm		0.03	0.00		c0.04	0.00						
v/c Ratio		0.21	0.03		0.27	0.02	0.20	0.53		0.41	0.18	
Uniform Delay, d1		23.3	22.7		23.5	22.7	27.0	7.4		24.2	4.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.6	0.0	0.4	0.3		0.4	0.2	
Delay (s)		23.6	22.7		24.0	22.7	27.4	7.7		24.6	4.2	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		23.2			23.6			8.0			7.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

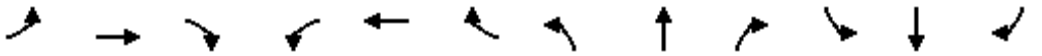


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	3	5	5	0	7	3	972	31	40	392	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.96			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1741			1770	1583	1770	3523		1770	3532	
Flt Permitted		0.88			0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1575			1385	1583	1770	3523		1770	3532	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	3	6	6	0	8	3	1080	34	44	436	6
RTOR Reduction (vph)	0	5	0	0	0	7	0	1	0	0	0	0
Lane Group Flow (vph)	0	16	0	0	6	1	3	1113	0	44	442	0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4		4						
Actuated Green, G (s)		9.8			9.8	9.8	1.0	61.8		4.7	65.5	
Effective Green, g (s)		10.8			10.8	10.8	2.0	64.8		5.7	68.5	
Actuated g/C Ratio		0.12			0.12	0.12	0.02	0.72		0.06	0.76	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)		189			166	190	39	2537		112	2688	
v/s Ratio Prot							0.00	c0.32		c0.02	0.13	
v/s Ratio Perm		c0.01			0.00	0.00						
v/c Ratio		0.08			0.04	0.01	0.08	0.44		0.39	0.16	
Uniform Delay, d1		35.2			35.0	34.9	43.1	5.2		40.5	2.9	
Progression Factor		1.00			1.00	1.00	1.06	1.16		1.00	1.00	
Incremental Delay, d2		0.1			0.0	0.0	0.3	0.2		0.8	0.1	
Delay (s)		35.3			35.0	34.9	46.1	6.2		41.3	3.1	
Level of Service		D			D	C	D	A		D	A	
Approach Delay (s)		35.3			34.9			6.3			6.5	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

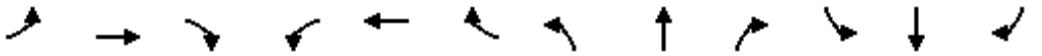
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	53	86	930	20	36	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3528		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3528		1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	59	96	1033	22	40	422
RTOR Reduction (vph)	0	84	1	0	0	0
Lane Group Flow (vph)	59	12	1054	0	40	422
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	10.7	10.7	61.0		4.6	69.6
Effective Green, g (s)	11.7	11.7	64.0		5.6	72.6
Actuated g/C Ratio	0.13	0.13	0.71		0.06	0.81
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	230	206	2509		110	2855
v/s Ratio Prot	c0.03		c0.30		c0.02	0.12
v/s Ratio Perm		0.01				
v/c Ratio	0.26	0.06	0.42		0.36	0.15
Uniform Delay, d1	35.2	34.3	5.4		40.5	1.9
Progression Factor	1.00	1.00	1.00		0.87	0.98
Incremental Delay, d2	0.2	0.0	0.1		0.7	0.1
Delay (s)	35.5	34.4	5.5		36.0	2.0
Level of Service	D	C	A		D	A
Approach Delay (s)	34.8		5.5			4.9
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



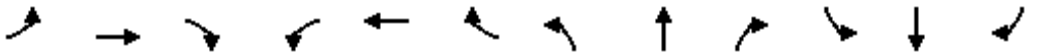
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	0	201	0	2	0	139	559	1	1	729	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5	3.5		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1665	1665	1438		1863		1660	3417	1544	1814	3491	1500
Flt Permitted	0.95	0.95	1.00		1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1665	1665	1438		1863		1660	3417	1544	1814	3491	1500
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	137	0	223	0	2	0	154	621	1	1	810	142
RTOR Reduction (vph)	0	0	180	0	0	0	0	0	0	0	0	83
Lane Group Flow (vph)	68	69	43	0	2	0	154	621	1	1	810	59
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.2	11.2	11.2		1.1		11.7	36.6	36.6	1.0	25.9	25.9
Effective Green, g (s)	13.7	13.7	13.7		2.1		12.7	40.0	40.0	2.0	29.3	29.3
Actuated g/C Ratio	0.19	0.19	0.19		0.03		0.18	0.57	0.57	0.03	0.42	0.42
Clearance Time (s)	6.0	6.0	6.0		4.0		4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)	4.1	4.1	4.1		2.0		2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	324	324	280		56		300	1944	879	52	1455	625
v/s Ratio Prot	0.04	c0.04			c0.00		c0.09	0.18		0.00	c0.23	
v/s Ratio Perm			0.03						0.00			0.04
v/c Ratio	0.21	0.21	0.16		0.04		0.51	0.32	0.00	0.02	0.56	0.09
Uniform Delay, d1	23.8	23.8	23.5		33.1		26.0	8.0	6.5	33.2	15.6	12.4
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.4		0.1		0.6	0.2	0.0	0.1	0.6	0.1
Delay (s)	24.2	24.2	23.9		33.2		26.6	8.1	6.5	33.3	16.2	12.6
Level of Service	C	C	C		C		C	A	A	C	B	B
Approach Delay (s)		24.0			33.2			11.8			15.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	12.5
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



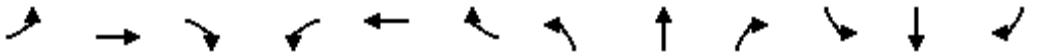
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	0	4	2	0	2	11	687	0	5	923	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4		4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539		1770	3539	1583
Flt Permitted		0.95	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	0	4	2	0	2	12	763	0	6	1026	6
RTOR Reduction (vph)	0	0	4	0	0	2	0	0	0	0	0	1
Lane Group Flow (vph)	0	4	0	0	2	0	12	763	0	6	1026	5
Turn Type	Split		Perm	Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2			6		3	8		7	4	
Permitted Phases			2	6		6			8			4
Actuated Green, G (s)		1.0	1.0		2.0	2.0	0.6	36.9		0.6	36.9	36.9
Effective Green, g (s)		1.0	2.0		2.0	2.0	1.6	37.9		0.6	37.9	37.9
Actuated g/C Ratio		0.02	0.03		0.03	0.03	0.03	0.64		0.01	0.64	0.64
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)		30	54		63	54	48	2277		18	2277	1019
v/s Ratio Prot		c0.00					c0.01	0.22		0.00	c0.29	
v/s Ratio Perm			0.00		c0.00	0.00						0.00
v/c Ratio		0.13	0.00		0.03	0.00	0.25	0.34		0.33	0.45	0.00
Uniform Delay, d1		28.5	27.5		27.5	27.5	28.1	4.8		29.0	5.3	3.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.7	0.0		0.1	0.0	1.0	0.1		3.9	0.2	0.0
Delay (s)		29.3	27.5		27.6	27.5	29.1	4.9		32.9	5.5	3.8
Level of Service		C	C		C	C	C	A		C	A	A
Approach Delay (s)		28.4			27.5			5.3			5.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	16.4
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



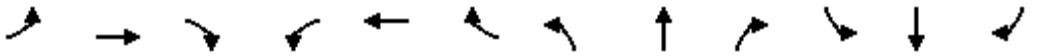
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1	322	22	17	3	298	639	31	1	829	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1688	1583	1610	3293		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1688	1583	1610	3293		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	1	358	24	19	3	331	710	34	1	921	106
RTOR Reduction (vph)	0	0	295	0	3	0	0	0	15	0	0	71
Lane Group Flow (vph)	34	34	63	15	28	0	331	710	19	1	921	35
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.5	11.5	11.5	4.5	4.5		19.6	42.9	42.9	0.8	23.7	23.7
Effective Green, g (s)	14.2	14.2	14.2	5.5	5.5		20.6	46.3	46.3	1.8	27.1	27.1
Actuated g/C Ratio	0.18	0.18	0.18	0.07	0.07		0.25	0.57	0.57	0.02	0.33	0.33
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	294	296	277	109	223		450	2020	904	39	1699	529
v/s Ratio Prot	0.02	0.02		c0.01	0.01		c0.19	0.20		0.00	c0.18	
v/s Ratio Perm			c0.04						0.01			0.02
v/c Ratio	0.12	0.11	0.23	0.14	0.13		0.74	0.35	0.02	0.03	0.54	0.07
Uniform Delay, d1	28.2	28.2	28.7	35.6	35.5		27.8	9.3	7.6	38.8	22.0	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.7	0.9	0.4		5.3	0.2	0.0	0.1	0.5	0.1
Delay (s)	28.4	28.4	29.4	36.5	35.9		33.1	9.5	7.6	38.9	22.5	18.5
Level of Service	C	C	C	D	D		C	A	A	D	C	B
Approach Delay (s)		29.2			36.1			16.7			22.1	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	13.7
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



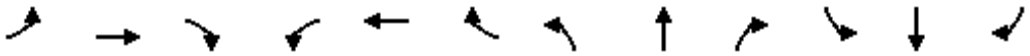
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	4	133	42	3	12	76	1084	55	67	939	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1690	1583		1779	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1690	1583		1779	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	149	4	148	47	3	13	84	1204	61	74	1043	26
RTOR Reduction (vph)	0	0	131	0	0	12	0	0	22	0	0	10
Lane Group Flow (vph)	76	77	17	0	50	1	84	1204	39	74	1043	16
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	13.1	13.1	13.1		10.8	10.8	8.9	69.7	69.7	8.7	69.5	69.5
Effective Green, g (s)	14.1	14.1	14.1		11.8	11.8	9.9	72.7	70.7	9.7	72.5	72.5
Actuated g/C Ratio	0.12	0.12	0.12		0.10	0.10	0.08	0.61	0.59	0.08	0.60	0.60
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	5.3
Lane Grp Cap (vph)	198	199	186		175	156	146	3081	933	143	3072	956
v/s Ratio Prot	0.05	c0.05			c0.03		c0.05	c0.24		c0.04	0.21	
v/s Ratio Perm			0.01			0.00			0.02			0.01
v/c Ratio	0.38	0.39	0.09		0.29	0.01	0.58	0.39	0.04	0.52	0.34	0.02
Uniform Delay, d1	48.9	49.0	47.2		50.2	48.8	53.0	12.2	10.4	52.9	11.8	9.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.1		0.3	0.0	3.4	0.4	0.1	1.3	0.2	0.0
Delay (s)	49.4	49.4	47.3		50.5	48.8	56.4	12.6	10.5	54.2	12.0	9.5
Level of Service	D	D	D		D	D	E	B	B	D	B	A
Approach Delay (s)		48.4			50.2			15.2			14.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



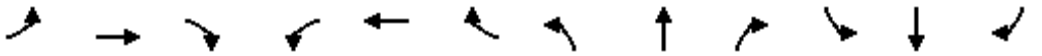
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	204	114	336	69	137	0	187	1159	36	13	1085	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	227	127	373	77	152	0	208	1288	40	14	1206	194
RTOR Reduction (vph)	0	0	284	0	0	0	0	0	12	0	0	73
Lane Group Flow (vph)	227	127	89	77	152	0	208	1288	28	14	1206	121
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.6	25.9	25.9	9.0	15.3		11.6	61.8	61.8	3.6	53.8	53.8
Effective Green, g (s)	20.6	28.6	28.6	10.0	18.0		12.6	64.8	64.8	4.6	56.8	56.8
Actuated g/C Ratio	0.17	0.24	0.24	0.08	0.15		0.10	0.54	0.54	0.04	0.47	0.47
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3		2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	304	444	377	148	279		360	1911	855	68	1675	749
v/s Ratio Prot	c0.13	0.07		0.04	c0.08		c0.06	0.36		0.01	c0.34	
v/s Ratio Perm			0.06						0.02			0.08
v/c Ratio	0.75	0.29	0.24	0.52	0.54		0.58	0.67	0.03	0.21	0.72	0.16
Uniform Delay, d1	47.2	37.4	36.9	52.7	47.2		51.2	20.0	12.9	55.9	25.2	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.5	0.6	0.5	1.5	3.0		1.4	1.9	0.1	0.5	1.8	0.2
Delay (s)	55.7	37.9	37.4	54.2	50.2		52.6	21.9	13.0	56.5	27.0	18.2
Level of Service	E	D	D	D	D		D	C	B	E	C	B
Approach Delay (s)		43.2			51.6			25.8			26.1	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



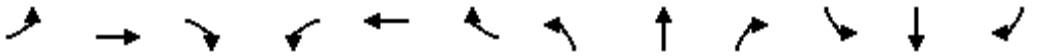
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	206	16	52	183	5	44	3	44	9	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	3501		1770	3524			1700			1704	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (perm)	1770	3501		1770	3524			1700			1704	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	229	18	58	203	6	49	3	49	10	0	8
RTOR Reduction (vph)	0	4	0	0	1	0	0	35	0	0	8	0
Lane Group Flow (vph)	1	243	0	58	208	0	0	66	0	0	10	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.8	19.9		2.6	21.7			6.3			0.9	
Effective Green, g (s)	1.8	22.6		3.6	24.4			7.3			1.9	
Actuated g/C Ratio	0.04	0.48		0.08	0.51			0.15			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	67	1669		134	1814			262			68	
v/s Ratio Prot	0.00	c0.07		c0.03	0.06			c0.04			c0.01	
v/s Ratio Perm												
v/c Ratio	0.01	0.15		0.43	0.11			0.25			0.15	
Uniform Delay, d1	21.9	7.0		20.9	5.9			17.7			22.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.1		0.8	0.0			0.2			0.4	
Delay (s)	22.0	7.0		21.7	6.0			17.8			22.4	
Level of Service	C	A		C	A			B			C	
Approach Delay (s)		7.1			9.4			17.8			22.4	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	47.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



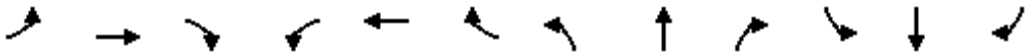
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	185	2	11	310	7	10	1	23	30	0	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.91			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1667			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1667			1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	82	206	2	12	344	8	11	1	26	33	0	272
RTOR Reduction (vph)	0	0	1	0	0	5	0	24	0	0	0	201
Lane Group Flow (vph)	82	206	1	12	344	3	0	14	0	0	33	71
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	4.3	17.7	17.7	0.7	14.1	14.1		2.5			11.6	11.6
Effective Green, g (s)	5.3	20.7	20.7	1.7	17.1	17.1		3.5			13.6	13.6
Actuated g/C Ratio	0.10	0.40	0.40	0.03	0.33	0.33		0.07			0.26	0.26
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	180	1403	628	58	1159	519		112			461	412
v/s Ratio Prot	c0.05	0.06		0.01	c0.10			c0.01			0.02	
v/s Ratio Perm			0.00			0.00						c0.04
v/c Ratio	0.46	0.15	0.00	0.21	0.30	0.01		0.12			0.07	0.17
Uniform Delay, d1	22.1	10.1	9.5	24.6	13.1	11.8		22.9			14.5	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.7	0.1	0.0	0.6	0.2	0.0		0.2			0.0	0.1
Delay (s)	22.8	10.1	9.5	25.2	13.2	11.8		23.1			14.6	15.0
Level of Service	C	B	A	C	B	B		C			B	B
Approach Delay (s)		13.7			13.6			23.1			15.0	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	52.2	Sum of lost time (s)	12.7
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



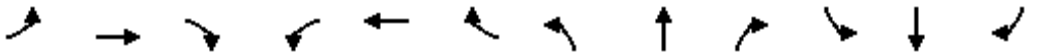
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	302	0	273	0	1118	217	0	773	1070
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	0.88
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3433		1583		3539	1583		3539	2787
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		1583		3539	1583		3539	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	336	0	303	0	1242	241	0	859	1189
RTOR Reduction (vph)	0	0	0	0	0	53	0	0	88	0	0	432
Lane Group Flow (vph)	0	0	0	336	0	250	0	1242	153	0	859	757
Turn Type				custom		custom			Perm			Perm
Protected Phases								2			6	
Permitted Phases				8		8			2			6
Actuated Green, G (s)				16.6		16.6		47.7	47.7		47.7	47.7
Effective Green, g (s)				16.6		16.6		47.7	47.7		47.7	47.7
Actuated g/C Ratio				0.22		0.22		0.64	0.64		0.64	0.64
Clearance Time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Vehicle Extension (s)				2.0		2.0		3.8	3.8		3.9	3.9
Lane Grp Cap (vph)				761		351		2254	1008		2254	1775
v/s Ratio Prot								c0.35			0.24	
v/s Ratio Perm				0.10		c0.16			0.10			0.27
v/c Ratio				0.44		0.71		0.55	0.15		0.38	0.43
Uniform Delay, d1				25.2		26.9		7.6	5.5		6.5	6.8
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.1		5.6		0.3	0.1		0.1	0.2
Delay (s)				25.3		32.5		8.0	5.6		6.7	7.0
Level of Service				C		C		A	A		A	A
Approach Delay (s)		0.0			28.7			7.6			6.9	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	10.6
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



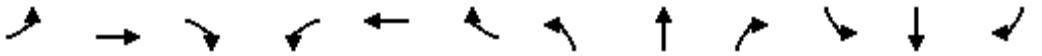
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	215	137	56	0	112	0	989	0	53	656	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3	4.0		4.0		4.9		4.0	4.9	
Lane Util. Factor		0.95	1.00	0.97		1.00		0.95		1.00	0.95	
Frt		1.00	0.85	1.00		0.85		1.00		1.00	1.00	
Flt Protected		1.00	1.00	0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	3433		1583		3539		1770	3539	
Flt Permitted		1.00	1.00	0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)		3539	1583	3433		1583		3539		1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	239	152	62	0	124	0	1099	0	59	729	0
RTOR Reduction (vph)	0	0	129	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	239	23	62	0	124	0	1099	0	59	729	0
Turn Type			Perm	Prot		custom			Perm	Prot		
Protected Phases		4		3		3 1		2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		13.1	13.1	10.0		18.4		37.2		8.4	49.6	
Effective Green, g (s)		13.1	13.1	10.0		18.4		37.2		8.4	49.6	
Actuated g/C Ratio		0.15	0.15	0.12		0.21		0.43		0.10	0.57	
Clearance Time (s)		5.3	5.3	4.0				4.9		4.0	4.9	
Vehicle Extension (s)		2.8	2.8	2.0				3.6		2.0	3.6	
Lane Grp Cap (vph)		533	239	395		335		1515		171	2020	
v/s Ratio Prot		c0.07		0.02		c0.08		c0.31		0.03	c0.21	
v/s Ratio Perm			0.01									
v/c Ratio		0.45	0.10	0.16		0.37		0.73		0.35	0.36	
Uniform Delay, d1		33.6	31.8	34.7		29.3		20.6		36.7	10.1	
Progression Factor		1.00	1.00	1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.2	0.1		0.3		1.8		0.4	0.1	
Delay (s)		34.1	32.0	34.7		29.5		22.4		37.1	10.2	
Level of Service		C	C	C		C		C		D	B	
Approach Delay (s)		33.3			31.3			22.4			12.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	19.1
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



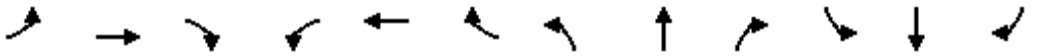
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	100	4	6	203	124	7	30	13	160	14	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1845	1583		1781	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1845	1583		1781	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	46	111	4	7	226	138	8	33	14	178	16	90
RTOR Reduction (vph)	0	0	3	0	0	100	0	0	12	0	0	52
Lane Group Flow (vph)	46	111	1	7	226	38	0	41	2	0	194	38
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	2.2	13.2	13.2	0.6	11.6	11.6		5.3	5.3		15.4	15.4
Effective Green, g (s)	3.2	16.2	16.2	1.6	14.6	14.6		6.3	6.3		16.4	16.4
Actuated g/C Ratio	0.06	0.31	0.31	0.03	0.28	0.28		0.12	0.12		0.31	0.31
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	108	1092	488	54	984	440		221	190		556	494
v/s Ratio Prot	c0.03	0.03		0.00	c0.06			c0.02			c0.11	
v/s Ratio Perm			0.00			0.02			0.00			0.02
v/c Ratio	0.43	0.10	0.00	0.13	0.23	0.09		0.19	0.01		0.35	0.08
Uniform Delay, d1	23.8	13.0	12.6	24.8	14.6	14.0		20.8	20.3		13.9	12.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	0.0	0.0	0.4	0.1	0.1		0.1	0.0		0.1	0.0
Delay (s)	24.7	13.0	12.6	25.2	14.8	14.1		20.9	20.4		14.1	12.7
Level of Service	C	B	B	C	B	B		C	C		B	B
Approach Delay (s)		16.3			14.7			20.8			13.6	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



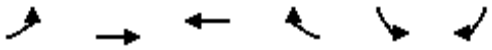
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	286	278	72	40	211	120	31	227	59	138	246	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	318	309	80	44	234	133	34	252	66	153	273	213
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	318	309	80	44	234	133	34	252	66	153	273	213
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.7	21.7	68.5	4.5	12.5	68.5	2.7	11.1	68.5	11.5	20.2	68.5
Effective Green, g (s)	14.7	24.7	68.5	5.5	15.5	68.5	3.7	13.8	68.5	12.5	22.9	68.5
Actuated g/C Ratio	0.21	0.36	1.00	0.08	0.23	1.00	0.05	0.20	1.00	0.18	0.33	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	737	1276	1583	276	801	1583	185	713	1583	626	1183	1583
v/s Ratio Prot	c0.09	0.09		0.01	c0.07		0.01	c0.07		0.04	c0.08	
v/s Ratio Perm			0.05			0.08			0.04			0.13
v/c Ratio	0.43	0.24	0.05	0.16	0.29	0.08	0.18	0.35	0.04	0.24	0.23	0.13
Uniform Delay, d1	23.3	15.3	0.0	29.3	22.0	0.0	31.0	23.5	0.0	24.0	16.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.1	0.1	0.4	0.1	0.2	0.4	0.0	0.1	0.2	0.2
Delay (s)	23.4	15.5	0.1	29.4	22.3	0.1	31.1	23.9	0.0	24.0	16.6	0.2
Level of Service	C	B	A	C	C	A	C	C	A	C	B	A
Approach Delay (s)		17.3			15.9			20.2			12.9	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	68.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



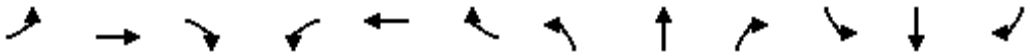
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	347	18	18	187	26	20	152	34	165	131	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3513		1770	3474		1770	1811		1770	1743	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3513		1770	3474		1770	1811		1770	1743	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	166	386	20	20	208	29	22	169	38	183	146	110
RTOR Reduction (vph)	0	4	0	0	12	0	0	9	0	0	25	0
Lane Group Flow (vph)	166	402	0	20	225	0	22	198	0	183	231	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	11.0	26.2		2.0	17.2		2.4	18.9		10.8	27.3	
Effective Green, g (s)	12.0	28.9		3.0	19.9		3.4	21.2		11.8	29.6	
Actuated g/C Ratio	0.16	0.38		0.04	0.26		0.04	0.28		0.15	0.39	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	278	1327		69	904		79	502		273	674	
v/s Ratio Prot	c0.09	c0.11		0.01	0.06		0.01	c0.11		c0.10	0.13	
v/s Ratio Perm												
v/c Ratio	0.60	0.30		0.29	0.25		0.28	0.40		0.67	0.34	
Uniform Delay, d1	30.0	16.7		35.7	22.4		35.4	22.4		30.5	16.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	0.2		0.8	0.2		0.7	0.7		5.0	0.4	
Delay (s)	32.3	16.9		36.6	22.6		36.1	23.1		35.5	17.0	
Level of Service	C	B		D	C		D	C		D	B	
Approach Delay (s)		21.4			23.7			24.4			24.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	76.5	Sum of lost time (s)	8.6
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



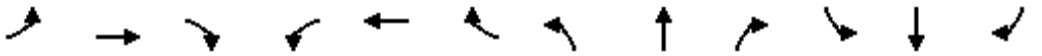
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	9	566	228	16	78	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	1770	3539	3504		1770	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	1770	3539	3504		1770	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	629	253	18	87	0
RTOR Reduction (vph)	0	0	4	0	0	0
Lane Group Flow (vph)	10	629	267	0	87	0
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	0.8	30.9	26.1		8.6	
Effective Green, g (s)	1.8	33.6	28.8		9.6	
Actuated g/C Ratio	0.04	0.70	0.60		0.20	
Clearance Time (s)	4.0	5.7	5.7		3.0	
Vehicle Extension (s)	2.0	3.8	3.8		2.0	
Lane Grp Cap (vph)	66	2467	2094		353	
v/s Ratio Prot	0.01	c0.18	0.08		c0.05	
v/s Ratio Perm						
v/c Ratio	0.15	0.25	0.13		0.25	
Uniform Delay, d1	22.5	2.7	4.2		16.3	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.1	0.0		0.1	
Delay (s)	22.8	2.8	4.3		16.4	
Level of Service	C	A	A		B	
Approach Delay (s)		3.1	4.3		16.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	4.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	48.2	Sum of lost time (s)	5.0
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



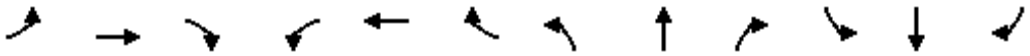
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	590	55	69	179	0	113	0	79	0	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7		2.0	2.7			2.0	2.0		2.0	
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00		1.00	
Frt		0.99		1.00	1.00			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)		3494		1770	3539			1770	1583		1863	
Flt Permitted		1.00		0.95	1.00			0.95	1.00		1.00	
Satd. Flow (perm)		3494		1770	3539			1770	1583		1863	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	656	61	77	199	0	126	0	88	0	1	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	68	0	0	0
Lane Group Flow (vph)	0	712	0	77	199	0	0	126	20	0	1	0
Turn Type	Prot			Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)		21.8		6.3	32.1			11.3	11.3		1.0	
Effective Green, g (s)		24.8		8.3	35.1			13.3	13.3		3.0	
Actuated g/C Ratio		0.43		0.14	0.60			0.23	0.23		0.05	
Clearance Time (s)		5.7		4.0	5.7			4.0	4.0		4.0	
Vehicle Extension (s)		3.8		2.0	3.7			2.0	2.0		2.0	
Lane Grp Cap (vph)		1491		253	2138			405	362		96	
v/s Ratio Prot		c0.20		c0.04	0.06			c0.07			c0.00	
v/s Ratio Perm									0.01			
v/c Ratio		0.48		0.30	0.09			0.31	0.06		0.01	
Uniform Delay, d1		12.0		22.3	4.8			18.6	17.5		26.1	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.3		0.2	0.0			0.2	0.0		0.0	
Delay (s)		12.3		22.6	4.8			18.8	17.5		26.2	
Level of Service		B		C	A			B	B		C	
Approach Delay (s)		12.3			9.8			18.2			26.2	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	8.7
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



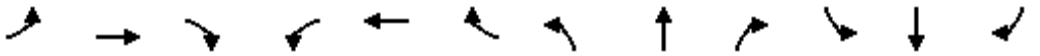
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	544	18	48	248	3	17	7	109	24	14	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3522		1770	3534			1799	1583		1806	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.84	1.00		0.85	1.00
Satd. Flow (perm)	1770	3522		1770	3534			1572	1583		1588	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	604	20	53	276	3	19	8	121	27	16	27
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	94	0	0	21
Lane Group Flow (vph)	7	622	0	53	279	0	0	27	27	0	43	6
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	0.7	20.6		2.3	22.2			9.2	9.2		9.2	9.2
Effective Green, g (s)	1.7	23.3		3.3	24.9			10.2	10.2		10.2	10.2
Actuated g/C Ratio	0.04	0.51		0.07	0.54			0.22	0.22		0.22	0.22
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	66	1792		128	1921			350	353		354	353
v/s Ratio Prot	0.00	c0.18		c0.03	0.08							
v/s Ratio Perm								0.02	0.02		c0.03	0.00
v/c Ratio	0.11	0.35		0.41	0.14			0.08	0.08		0.12	0.02
Uniform Delay, d1	21.3	6.7		20.3	5.2			14.1	14.1		14.2	13.9
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.2		0.8	0.0			0.0	0.0		0.1	0.0
Delay (s)	21.6	6.9		21.1	5.2			14.1	14.1		14.3	13.9
Level of Service	C	A		C	A			B	B		B	B
Approach Delay (s)		7.0			7.8			14.1			14.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



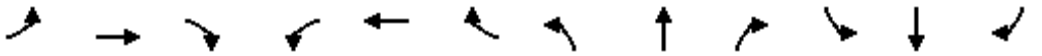
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	457	10	37	228	12	14	0	33	48	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99			0.91		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1849			1662		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (perm)	1770	1857		1770	1849			1662		1770	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	41	508	11	41	253	13	16	0	37	53	0	3
RTOR Reduction (vph)	0	0	0	0	1	0	0	34	0	0	3	0
Lane Group Flow (vph)	41	519	0	41	265	0	0	19	0	53	0	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	3.9	33.3		3.6	33.0			3.8		5.5	5.5	
Effective Green, g (s)	4.9	36.0		4.6	35.7			4.8		6.5	6.5	
Actuated g/C Ratio	0.08	0.56		0.07	0.56			0.08		0.10	0.10	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	136	1046		127	1033			125		180	161	
v/s Ratio Prot	c0.02	c0.28		0.02	0.14			c0.01		c0.03	0.00	
v/s Ratio Perm												
v/c Ratio	0.30	0.50		0.32	0.26			0.15		0.29	0.00	
Uniform Delay, d1	27.9	8.5		28.2	7.3			27.6		26.6	25.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.5		0.5	0.2			0.4		0.3	0.0	
Delay (s)	28.3	8.9		28.7	7.4			28.0		26.9	25.8	
Level of Service	C	A		C	A			C		C	C	
Approach Delay (s)		10.4			10.3			28.0			26.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



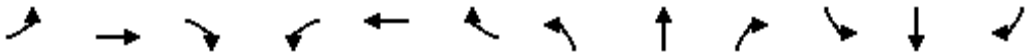
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	47	50	174	20	21	27	261	153	27	282	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	4.3	4.3	3.0	3.2	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1823	1583		1783	1583	1770	1863	1583	1770	3539	
Flt Permitted		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1823	1583		1783	1583	1770	1863	1583	1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	40	52	56	193	22	23	30	290	170	30	313	0
RTOR Reduction (vph)	0	0	48	0	0	15	0	0	118	0	0	0
Lane Group Flow (vph)	0	92	8	0	215	8	30	290	52	30	313	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			
Actuated Green, G (s)		7.0	7.0		15.3	15.3	2.0	17.0	17.0	2.0	18.1	
Effective Green, g (s)		8.0	8.0		16.3	16.3	3.0	18.0	18.0	3.0	19.1	
Actuated g/C Ratio		0.14	0.14		0.28	0.28	0.05	0.31	0.31	0.05	0.33	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3	5.3	4.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		249	216		496	440	91	572	486	91	1153	
v/s Ratio Prot		c0.05			c0.12		c0.02	c0.16		0.02	0.09	
v/s Ratio Perm			0.00			0.00			0.03			
v/c Ratio		0.37	0.04		0.43	0.02	0.33	0.51	0.11	0.33	0.27	
Uniform Delay, d1		23.0	22.0		17.4	15.3	26.8	16.7	14.5	26.8	14.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.2	0.0	0.8	0.3	0.0	0.8	0.1	
Delay (s)		23.3	22.0		17.6	15.3	27.6	16.9	14.6	27.6	14.7	
Level of Service		C	C		B	B	C	B	B	C	B	
Approach Delay (s)		22.8			17.4			16.8			15.9	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	13.3
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



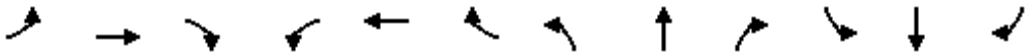
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	103	0	110	140	3	0	177	127	0	153	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1770	1863		1770	1857			1863	1583		1863	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1770	1863		1770	1857			1863	1583		1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	159	114	0	122	156	3	0	197	141	0	170	158
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	109	0	0	0
Lane Group Flow (vph)	159	114	0	122	158	0	0	197	32	0	170	158
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	13.8	13.8		12.7	12.7			16.7	16.7		15.5	77.3
Effective Green, g (s)	14.8	14.8		13.7	13.7			17.7	17.7		16.5	77.3
Actuated g/C Ratio	0.19	0.19		0.18	0.18			0.23	0.23		0.21	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			5.0	5.0		5.0	
Lane Grp Cap (vph)	339	357		314	329			427	362		398	1583
v/s Ratio Prot	c0.09	0.06		0.07	c0.09			c0.11			c0.09	
v/s Ratio Perm									0.02			0.10
v/c Ratio	0.47	0.32		0.39	0.48			0.46	0.09		0.43	0.10
Uniform Delay, d1	27.8	26.9		28.1	28.6			25.7	23.5		26.3	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.4		0.6	0.8			1.6	0.2		1.5	0.1
Delay (s)	28.5	27.3		28.7	29.4			27.3	23.7		27.9	0.1
Level of Service	C	C		C	C			C	C		C	A
Approach Delay (s)		28.0			29.1			25.8			14.5	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	14.6
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



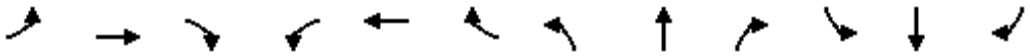
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	255	68	20	214	18	81	18	20	3	16	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00		1.00			0.96	1.00		0.99	
Satd. Flow (prot)		1858	1583		1838			1790	1583		1784	
Flt Permitted		0.98	1.00		0.97			0.75	1.00		0.97	
Satd. Flow (perm)		1833	1583		1789			1406	1583		1740	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	283	76	22	238	20	90	20	22	3	18	8
RTOR Reduction (vph)	0	0	32	0	4	0	0	0	17	0	6	0
Lane Group Flow (vph)	0	297	44	0	276	0	0	110	5	0	23	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		19.2	19.2		19.2			7.3	7.3		7.3	
Effective Green, g (s)		20.2	20.2		20.2			8.3	8.3		8.3	
Actuated g/C Ratio		0.58	0.58		0.58			0.24	0.24		0.24	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1067	922		1041			336	379		416	
v/s Ratio Prot												
v/s Ratio Perm		c0.16	0.03		0.15			c0.08	0.00		0.01	
v/c Ratio		0.28	0.05		0.27			0.33	0.01		0.06	
Uniform Delay, d1		3.6	3.1		3.6			10.9	10.1		10.2	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.1	0.0		0.1			0.2	0.0		0.0	
Delay (s)		3.7	3.1		3.7			11.1	10.1		10.2	
Level of Service		A	A		A			B	B		B	
Approach Delay (s)		3.6			3.7			10.9			10.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	34.7	Sum of lost time (s)	6.2
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



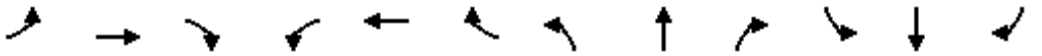
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	292	9	10	299	7	12	4	17	2	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2			3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.98	
Flt Protected		1.00			1.00			0.96	1.00		0.99	
Satd. Flow (prot)		1854			1854			1794	1583		1815	
Flt Permitted		1.00			0.99			0.82	1.00		0.92	
Satd. Flow (perm)		1850			1838			1529	1583		1687	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	324	10	11	332	8	13	4	19	2	6	1
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	17	0	1	0
Lane Group Flow (vph)	0	337	0	0	350	0	0	17	2	0	8	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		24.7			24.7			3.3	3.3		3.3	
Effective Green, g (s)		25.7			25.7			4.3	4.3		4.3	
Actuated g/C Ratio		0.71			0.71			0.12	0.12		0.12	
Clearance Time (s)		4.2			4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.5			2.5			2.0	2.0		2.0	
Lane Grp Cap (vph)		1313			1305			182	188		200	
v/s Ratio Prot												
v/s Ratio Perm		0.18			c0.19			c0.01	0.00		0.00	
v/c Ratio		0.26			0.27			0.09	0.01		0.04	
Uniform Delay, d1		1.9			1.9			14.2	14.1		14.1	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.1			0.1			0.1	0.0		0.0	
Delay (s)		1.9			2.0			14.3	14.1		14.2	
Level of Service		A			A			B	B		B	
Approach Delay (s)		1.9			2.0			14.2			14.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	2.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	36.2	Sum of lost time (s)	6.2
Intersection Capacity Utilization	32.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



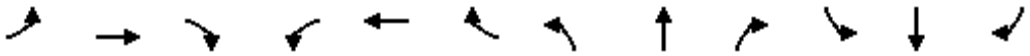
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	192	17	172	236	3	43	13	272	4	12	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0			3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.89			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1840		1770	1860			1643			1817	
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.94	
Satd. Flow (perm)	1770	1840		1770	1860			1588			1730	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	213	19	191	262	3	48	14	302	4	13	2
RTOR Reduction (vph)	0	3	0	0	0	0	0	174	0	0	2	0
Lane Group Flow (vph)	19	229	0	191	265	0	0	190	0	0	17	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	0.9	14.4		7.8	21.3			9.8			9.8	
Effective Green, g (s)	1.9	15.4		8.8	22.3			10.8			10.8	
Actuated g/C Ratio	0.04	0.35		0.20	0.50			0.24			0.24	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0			4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0			2.0	
Lane Grp Cap (vph)	76	641		352	938			388			423	
v/s Ratio Prot	0.01	c0.12		c0.11	0.14							
v/s Ratio Perm								c0.12			0.01	
v/c Ratio	0.25	0.36		0.54	0.28			0.49			0.04	
Uniform Delay, d1	20.5	10.7		15.9	6.3			14.3			12.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.6	0.3		0.9	0.1			0.4			0.0	
Delay (s)	21.1	11.0		16.8	6.5			14.7			12.8	
Level of Service	C	B		B	A			B			B	
Approach Delay (s)		11.7			10.8			14.7			12.8	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	44.2	Sum of lost time (s)	9.2
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



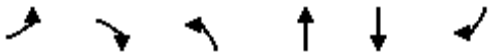
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	85	146	42	66	9	173	385	10	15	708	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	2.0	2.6	3.9	3.0	1.6	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1820	1583		1827	1583	1770	3539	1583	1770	3539	
Flt Permitted		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1820	1583		1827	1583	1770	3539	1583	1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	94	162	47	73	10	192	428	11	17	787	0
RTOR Reduction (vph)	0	0	132	0	0	8	0	0	6	0	0	0
Lane Group Flow (vph)	0	178	30	0	120	2	192	428	5	17	787	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)		15.7	15.7		14.8	14.8	14.2	37.2	37.2	5.3	30.3	
Effective Green, g (s)		16.7	16.7		15.8	15.8	15.2	39.5	38.2	6.3	32.6	
Actuated g/C Ratio		0.19	0.19		0.18	0.18	0.17	0.44	0.42	0.07	0.36	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.9	4.9	4.0	3.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.9	3.9	2.0	3.9	
Lane Grp Cap (vph)		338	294		321	278	299	1555	673	124	1283	
v/s Ratio Prot		c0.10			c0.07		c0.11	0.12		0.01	c0.22	
v/s Ratio Perm			0.02			0.00			0.00			
v/c Ratio		0.53	0.10		0.37	0.01	0.64	0.28	0.01	0.14	0.61	
Uniform Delay, d1		33.0	30.4		32.7	30.6	34.8	16.1	14.9	39.2	23.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.7	0.1		0.3	0.0	3.5	0.1	0.0	0.2	1.0	
Delay (s)		33.7	30.4		33.0	30.6	38.3	16.2	14.9	39.4	24.5	
Level of Service		C	C		C	C	D	B	B	D	C	
Approach Delay (s)		32.2			32.8			22.9			24.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	9.6
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



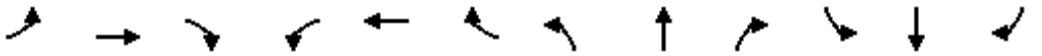
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	204	0	0	307	118	0	0	0	82	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Lane Util. Factor	1.00	0.95			1.00	1.00				0.95	0.95	
Frt	1.00	1.00			1.00	0.85				1.00	0.94	
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.97	
Satd. Flow (prot)	1770	3539			1863	1583				1681	1615	
Flt Permitted	0.95	1.00			1.00	1.00				0.76	0.85	
Satd. Flow (perm)	1770	3539			1863	1583				1340	1418	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	1.00
Adj. Flow (vph)	13	227	0	0	341	131	0	0	0	91	0	22
RTOR Reduction (vph)	0	0	0	0	0	91	0	0	0	0	18	0
Lane Group Flow (vph)	13	227	0	0	341	40	0	0	0	58	37	0
Turn Type	Prot			Perm		Perm	Perm			Perm		
Protected Phases	7	4			8			5			6	
Permitted Phases				8		8	5			6		
Actuated Green, G (s)	0.8	20.6			15.8	15.8				10.4	10.4	
Effective Green, g (s)	0.8	20.6			15.8	15.8				10.4	10.4	
Actuated g/C Ratio	0.02	0.40			0.31	0.31				0.20	0.20	
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Vehicle Extension (s)	2.0	3.8			3.8	3.8				2.0	2.0	
Lane Grp Cap (vph)	27	1410			569	484				270	285	
v/s Ratio Prot	c0.01	0.06			c0.18							
v/s Ratio Perm						0.03				c0.04	0.03	
v/c Ratio	0.48	0.16			0.60	0.08				0.21	0.13	
Uniform Delay, d1	25.2	10.0			15.3	12.8				17.2	16.9	
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2	4.9	0.1			1.9	0.1				0.1	0.1	
Delay (s)	30.1	10.1			17.2	12.9				17.4	17.0	
Level of Service	C	B			B	B				B	B	
Approach Delay (s)		11.1			16.0			0.0			17.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	24.7
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	294	435	242	135	28	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.99	1.00	1.00
Satd. Flow (prot)	1770	1583	1681	1743	1863	1583
Flt Permitted	0.95	1.00	0.74	0.91	1.00	1.00
Satd. Flow (perm)	1770	1583	1304	1608	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	327	483	269	150	31	170
RTOR Reduction (vph)	0	282	0	0	0	111
Lane Group Flow (vph)	327	201	204	215	31	59
Turn Type		custom	Perm			Perm
Protected Phases				2	6	
Permitted Phases	4	4	2			6
Actuated Green, G (s)	14.2	14.2	11.9	11.9	11.9	11.9
Effective Green, g (s)	14.2	14.2	11.9	11.9	11.9	11.9
Actuated g/C Ratio	0.42	0.42	0.35	0.35	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.8	3.8	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	737	659	455	561	650	552
v/s Ratio Prot					0.02	
v/s Ratio Perm	c0.18	0.13	c0.16	0.13		0.04
v/c Ratio	0.44	0.31	0.45	0.38	0.05	0.11
Uniform Delay, d1	7.1	6.7	8.6	8.3	7.3	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.3	0.3	0.2	0.0	0.0
Delay (s)	7.7	7.0	8.8	8.5	7.4	7.5
Level of Service	A	A	A	A	A	A
Approach Delay (s)	7.3			8.7	7.5	
Approach LOS	A			A	A	

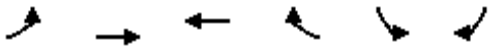
Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	34.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	44	4	374	86	88	2	278	342	66	259	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1557	3433	5085	1557	3433	3539	1560	3433	3539	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1557	3433	5085	1557	3433	3539	1560	3433	3539	1560
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	49	4	416	96	98	2	309	380	73	288	9
RTOR Reduction (vph)	0	0	4	0	0	75	0	0	259	0	0	5
Lane Group Flow (vph)	9	49	0	416	96	23	2	309	121	73	288	4
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	5.4	5.4	13.9	14.3	14.3	1.1	20.0	20.0	6.8	25.7	25.7
Effective Green, g (s)	6.0	8.4	6.4	14.9	17.3	15.3	2.1	23.4	21.0	7.8	29.1	26.7
Actuated g/C Ratio	0.09	0.13	0.10	0.23	0.26	0.23	0.03	0.35	0.32	0.12	0.44	0.40
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	312	646	151	774	1331	360	109	1253	496	405	1558	630
v/s Ratio Prot	0.00	0.01		c0.12	c0.02		0.00	c0.09		0.02	c0.08	
v/s Ratio Perm			0.00			0.01			0.08			0.00
v/c Ratio	0.03	0.08	0.00	0.54	0.07	0.06	0.02	0.25	0.24	0.18	0.18	0.01
Uniform Delay, d1	27.4	25.4	27.0	22.6	18.4	19.8	31.0	15.1	16.7	26.3	11.3	11.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	0.0	0.4	0.0	0.1	0.0	0.2	0.5	0.1	0.1	0.0
Delay (s)	27.4	25.5	27.0	22.9	18.4	19.9	31.0	15.3	17.2	26.3	11.4	11.8
Level of Service	C	C	C	C	B	B	C	B	B	C	B	B
Approach Delay (s)		25.9			21.7			16.4			14.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	11.2
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

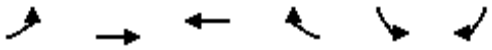


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	7	442	543	59	23	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	8	491	603	66	26	4
RTOR Reduction (vph)	0	0	0	23	0	4
Lane Group Flow (vph)	8	491	603	43	26	0
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	33.8	29.1	29.1	5.0	5.0
Effective Green, g (s)	1.7	36.8	32.1	32.1	6.0	6.0
Actuated g/C Ratio	0.03	0.75	0.66	0.66	0.12	0.12
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	62	3835	3345	1041	218	195
v/s Ratio Prot	0.00	c0.10	c0.12		c0.01	
v/s Ratio Perm				0.03		0.00
v/c Ratio	0.13	0.13	0.18	0.04	0.12	0.00
Uniform Delay, d1	22.8	1.6	3.2	2.9	19.0	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.0	0.0	0.1	0.0
Delay (s)	23.2	1.7	3.3	3.0	19.1	18.8
Level of Service	C	A	A	A	B	B
Approach Delay (s)		2.0	3.2		19.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	3.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	26.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	487	10	175	598	7	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	541	11	194	664	8	126
RTOR Reduction (vph)	0	7	0	0	0	99
Lane Group Flow (vph)	541	4	194	664	8	27
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	15.8	15.8	12.2	32.0	10.2	10.2
Effective Green, g (s)	18.8	18.8	13.2	35.0	11.2	11.2
Actuated g/C Ratio	0.35	0.35	0.25	0.66	0.21	0.21
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	1800	560	440	3352	373	334
v/s Ratio Prot	c0.11		c0.11	0.13	0.00	
v/s Ratio Perm		0.00				c0.02
v/c Ratio	0.30	0.01	0.44	0.20	0.02	0.08
Uniform Delay, d1	12.4	11.1	16.8	3.5	16.6	16.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.3	0.0	0.0	0.0
Delay (s)	12.5	11.1	17.1	3.6	16.6	16.9
Level of Service	B	B	B	A	B	B
Approach Delay (s)	12.5			6.6	16.8	
Approach LOS	B			A	B	

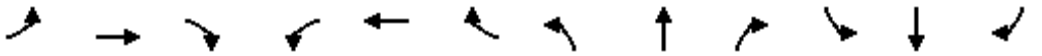
Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	9.9
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	21	553	727	190	104	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1542	1770	1560
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1542	1770	1560
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	614	808	211	116	12
RTOR Reduction (vph)	0	0	0	95	0	9
Lane Group Flow (vph)	23	614	808	116	116	3
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.9	30.9	26.0	26.0	11.0	11.0
Effective Green, g (s)	1.9	33.9	29.0	29.0	12.0	12.0
Actuated g/C Ratio	0.04	0.64	0.55	0.55	0.23	0.23
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	64	3265	2793	847	402	355
v/s Ratio Prot	c0.01	0.12	c0.16		c0.07	
v/s Ratio Perm				0.08		0.00
v/c Ratio	0.36	0.19	0.29	0.14	0.29	0.01
Uniform Delay, d1	24.9	3.8	6.4	5.8	16.9	15.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0	0.1	0.1	0.1	0.0
Delay (s)	26.1	3.9	6.5	5.9	17.0	15.8
Level of Service	C	A	A	A	B	B
Approach Delay (s)		4.7	6.3		16.9	
Approach LOS		A	A		B	

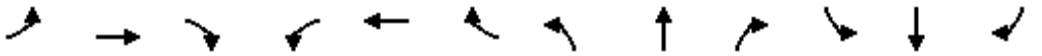
Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	9.9
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



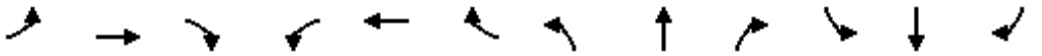
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	210	0	0	0	24	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)						4.0				4.0		
Lane Util. Factor						1.00				1.00		
Frt						0.85				1.00		
Flt Protected						1.00				0.95		
Satd. Flow (prot)						1583				1770		
Flt Permitted						1.00				0.95		
Satd. Flow (perm)						1583				1770		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	0	233	0	0	0	27	0	0
RTOR Reduction (vph)	0	0	0	0	0	183	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	50	0	0	0	27	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)						3.9				0.6		
Effective Green, g (s)						3.9				0.6		
Actuated g/C Ratio						0.21				0.03		
Clearance Time (s)						4.0				4.0		
Vehicle Extension (s)						3.0				3.0		
Lane Grp Cap (vph)						339				58		
v/s Ratio Prot										c0.02		
v/s Ratio Perm						c0.03						
v/c Ratio						0.15				0.47		
Uniform Delay, d1						5.8				8.6		
Progression Factor						1.00				1.00		
Incremental Delay, d2						0.2				5.8		
Delay (s)						6.0				14.4		
Level of Service						A				B		
Approach Delay (s)		0.0			6.0			0.0			14.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	18.2	Sum of lost time (s)	13.7
Intersection Capacity Utilization	16.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



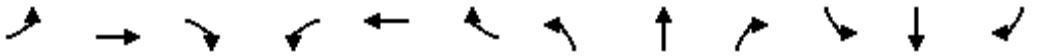
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	0	33	16	41	31	69	180	155	4	24	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.3	4.3		3.0		3.0	4.7		3.0	4.7	4.7
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.95		1.00	0.93		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1759		1770	3294		1770	3539	1583
Flt Permitted		0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1759		1770	3294		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	0	37	18	46	34	77	200	172	4	27	1
RTOR Reduction (vph)	0	0	32	0	17	0	0	94	0	0	0	1
Lane Group Flow (vph)	0	10	5	0	81	0	77	278	0	4	27	0
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	2	2		1	1		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)		6.2	6.2		6.2		3.9	24.7		0.8	21.6	21.6
Effective Green, g (s)		7.2	7.2		7.2		4.9	25.7		1.8	22.6	22.6
Actuated g/C Ratio		0.13	0.13		0.13		0.09	0.45		0.03	0.40	0.40
Clearance Time (s)		5.3	5.3		4.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)		224	200		223		152	1488		56	1406	629
v/s Ratio Prot		c0.01			c0.05		c0.04	c0.08		0.00	0.01	
v/s Ratio Perm			0.00									0.00
v/c Ratio		0.04	0.02		0.36		0.51	0.19		0.07	0.02	0.00
Uniform Delay, d1		21.8	21.8		22.7		24.8	9.3		26.7	10.4	10.3
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.0	0.0		0.4		1.0	0.1		0.2	0.0	0.0
Delay (s)		21.9	21.8		23.1		25.8	9.4		26.9	10.4	10.3
Level of Service		C	C		C		C	A		C	B	B
Approach Delay (s)		21.8			23.1			12.3			12.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	10.3
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



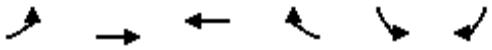
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	5	21	35	1	0	173	387	66	0	169	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9		4.0	4.7	4.7		4.7	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00		0.95	
Frt		0.92			1.00		1.00	1.00	0.85		1.00	
Flt Protected		0.99			0.95		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1697			1776		1770	3539	1583		3528	
Flt Permitted		0.99			0.95		0.95	1.00	1.00		1.00	
Satd. Flow (perm)		1697			1776		1770	3539	1583		3528	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	6	23	39	1	0	192	430	73	0	188	4
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	31	0	1	0
Lane Group Flow (vph)	0	20	0	0	40	0	192	430	42	0	191	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	2	2		1	1		3	8		7	4	
Permitted Phases						1			8			
Actuated Green, G (s)		4.4			4.7		11.0	31.7	31.7		16.7	
Effective Green, g (s)		4.4			4.7		11.0	32.7	32.7		17.7	
Actuated g/C Ratio		0.08			0.08		0.20	0.58	0.58		0.31	
Clearance Time (s)		4.9			4.9		4.0	5.7	5.7		5.7	
Vehicle Extension (s)		2.0			2.0		2.0	4.5	4.5		4.5	
Lane Grp Cap (vph)		133			148		346	2056	919		1109	
v/s Ratio Prot		c0.01			c0.02		c0.11	c0.12			0.05	
v/s Ratio Perm									0.03			
v/c Ratio		0.15			0.27		0.55	0.21	0.05		0.17	
Uniform Delay, d1		24.2			24.2		20.4	5.6	5.1		14.0	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.2			0.4		1.1	0.1	0.0		0.1	
Delay (s)		24.4			24.6		21.5	5.7	5.1		14.1	
Level of Service		C			C		C	A	A		B	
Approach Delay (s)		24.4			24.6			10.0			14.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	13.8
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



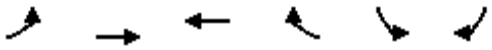
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	162	112	477	334	136	269	638	417	104	568	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5	3.5	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	18	180	124	530	371	151	299	709	463	116	631	30
RTOR Reduction (vph)	0	0	99	0	0	97	0	0	290	0	0	21
Lane Group Flow (vph)	18	180	25	530	371	54	299	709	173	116	631	9
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.4	15.4	15.4	17.2	28.9	28.9	12.2	29.7	29.7	6.6	24.1	24.1
Effective Green, g (s)	4.4	17.9	17.9	18.2	31.4	31.4	13.2	33.1	33.1	7.6	27.5	27.5
Actuated g/C Ratio	0.05	0.20	0.20	0.21	0.35	0.35	0.15	0.37	0.37	0.09	0.31	0.31
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	170	715	320	705	1254	561	511	1900	591	294	1098	491
v/s Ratio Prot	0.01	0.05		c0.15	c0.10		c0.09	0.14		0.03	c0.18	
v/s Ratio Perm			0.02			0.03			0.11			0.01
v/c Ratio	0.11	0.25	0.08	0.75	0.30	0.10	0.59	0.37	0.29	0.39	0.57	0.02
Uniform Delay, d1	40.2	29.7	28.7	33.1	20.6	19.1	35.1	20.2	19.5	38.3	25.6	21.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.2	4.0	0.2	0.1	1.1	0.2	0.5	0.3	1.1	0.0
Delay (s)	40.3	30.0	28.8	37.1	20.8	19.2	36.3	20.4	20.1	38.6	26.8	21.2
Level of Service	D	C	C	D	C	B	D	C	C	D	C	C
Approach Delay (s)		30.2			28.8			23.5			28.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	8.6
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



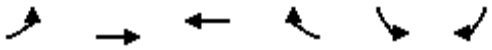
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	19	686	856	148	107	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	21	762	951	164	119	16
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	21	762	951	164	119	16
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.0	37.7	33.0	57.2	9.5	57.2
Effective Green, g (s)	2.0	40.7	36.0	57.2	11.0	57.2
Actuated g/C Ratio	0.03	0.71	0.63	1.00	0.19	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	62	2518	2227	1583	340	1583
v/s Ratio Prot	0.01	c0.22	c0.27		c0.07	
v/s Ratio Perm				0.10		0.01
v/c Ratio	0.34	0.30	0.43	0.10	0.35	0.01
Uniform Delay, d1	27.0	3.0	5.4	0.0	20.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.2	0.1	0.2	0.0
Delay (s)	28.1	3.1	5.6	0.1	20.2	0.0
Level of Service	C	A	A	A	C	A
Approach Delay (s)		3.8	4.8		17.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	57.2	Sum of lost time (s)	8.2
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	780	1053	40	55	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		0.98	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3520		1750	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3520		1750	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	867	1170	44	61	11
RTOR Reduction (vph)	0	0	2	0	9	0
Lane Group Flow (vph)	12	867	1212	0	63	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.1	42.8	37.7		6.3	
Effective Green, g (s)	2.1	45.5	40.4		7.3	
Actuated g/C Ratio	0.04	0.77	0.69		0.12	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	63	2739	2419		217	
v/s Ratio Prot	0.01	c0.24	c0.34		c0.04	
v/s Ratio Perm						
v/c Ratio	0.19	0.32	0.50		0.29	
Uniform Delay, d1	27.5	2.0	4.4		23.4	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.5	0.1	0.3		0.3	
Delay (s)	28.1	2.1	4.7		23.7	
Level of Service	C	A	A		C	
Approach Delay (s)		2.5	4.7		23.7	
Approach LOS		A	A		C	

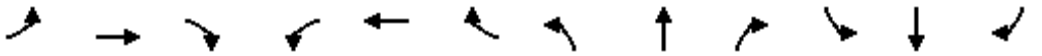
Intersection Summary			
HCM Average Control Delay	4.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	37	796	1071	55	40	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0		3.0	3.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3508		1770	1550
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3508		1770	1550
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	41	884	1190	61	44	18
RTOR Reduction (vph)	0	0	2	0	0	16
Lane Group Flow (vph)	41	884	1249	0	44	2
Confl. Peds. (#/hr)				10		10
Turn Type	Prot					Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	2.5	42.6	36.1		6.3	6.3
Effective Green, g (s)	3.5	45.3	38.8		7.3	7.3
Actuated g/C Ratio	0.06	0.76	0.65		0.12	0.12
Clearance Time (s)	4.0	6.7	6.7		4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3		2.0	2.0
Lane Grp Cap (vph)	104	2690	2284		217	190
v/s Ratio Prot	c0.02	0.25	c0.36		c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.39	0.33	0.55		0.20	0.01
Uniform Delay, d1	27.0	2.3	5.6		23.5	23.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	0.1	0.4		0.2	0.0
Delay (s)	27.9	2.4	6.0		23.7	23.0
Level of Service	C	A	A		C	C
Approach Delay (s)		3.5	6.0		23.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	690	147	285	983	319	209	242	193	244	267	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	2.0	2.7	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	3185	1400	3090	3185	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	3185	1400	3090	3185	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	114	767	163	317	1092	354	232	269	214	271	297	172
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	114	767	163	317	1092	354	232	269	214	271	297	172
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	8.7	49.2	120.0	18.6	59.1	120.0	13.3	18.6	120.0	15.2	19.5	120.0
Effective Green, g (s)	9.7	52.2	120.0	19.6	62.1	120.0	14.3	21.6	120.0	16.2	22.5	120.0
Actuated g/C Ratio	0.08	0.44	1.00	0.16	0.52	1.00	0.12	0.18	1.00	0.13	0.19	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		3.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	250	1385	1400	505	1648	1400	368	573	1400	417	597	1400
v/s Ratio Prot	0.04	c0.24		0.10	c0.34		c0.08	c0.08		c0.09	0.09	
v/s Ratio Perm			0.12			0.25			0.15			0.12
v/c Ratio	0.46	0.55	0.12	0.63	0.66	0.25	0.63	0.47	0.15	0.65	0.50	0.12
Uniform Delay, d1	52.6	25.2	0.0	46.8	21.3	0.0	50.3	44.1	0.0	49.2	43.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.6	0.2	1.8	1.2	0.4	2.6	1.1	0.2	2.6	1.1	0.2
Delay (s)	53.1	26.8	0.2	48.6	22.5	0.4	52.9	45.1	0.2	51.8	44.8	0.2
Level of Service	D	C	A	D	C	A	D	D	A	D	D	A
Approach Delay (s)		25.5			22.7			34.2			37.0	
Approach LOS		C			C			C			D	

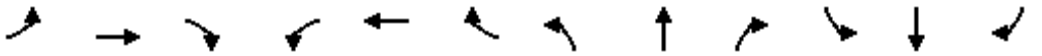
Intersection Summary				
HCM Average Control Delay	27.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.4	
Intersection Capacity Utilization	68.3%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1083	27	144	1570	21	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	1.7	1.7
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3522		1770	3539	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3522		1770	3539	1770	1542
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1203	30	160	1744	23	117
RTOR Reduction (vph)	1	0	0	0	0	106
Lane Group Flow (vph)	1232	0	160	1744	23	11
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	82.6		15.2	101.8	9.5	9.5
Effective Green, g (s)	84.6		15.2	103.8	10.8	10.8
Actuated g/C Ratio	0.70		0.13	0.86	0.09	0.09
Clearance Time (s)	5.7		4.0	5.7	3.0	3.0
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2483		224	3061	159	139
v/s Ratio Prot	0.35		c0.09	c0.49	c0.01	
v/s Ratio Perm						0.01
v/c Ratio	0.50		0.71	0.57	0.14	0.08
Uniform Delay, d1	8.0		50.3	2.2	50.3	50.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7		8.7	0.8	0.2	0.1
Delay (s)	8.7		59.0	2.9	50.5	50.1
Level of Service	A		E	A	D	D
Approach Delay (s)	8.7			7.6	50.2	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

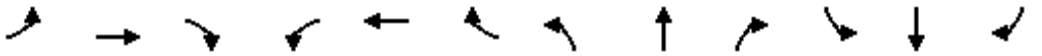


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	15	37	154	35	86	85	888	97	89	617	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	1499		1593	1498		1593	4577	1425	1593	3185	1425
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1593	1499		1593	1498		1593	4577	1425	1593	3185	1425
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	17	41	171	39	96	94	987	108	99	686	2
RTOR Reduction (vph)	0	37	0	0	68	0	0	0	47	0	0	1
Lane Group Flow (vph)	11	21	0	171	67	0	94	987	61	99	686	1
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	1.4	10.6		14.8	24.0		11.4	64.8	64.8	11.8	64.2	64.2
Effective Green, g (s)	2.4	12.1		15.8	25.5		12.4	67.8	67.8	12.8	67.2	67.2
Actuated g/C Ratio	0.02	0.10		0.13	0.21		0.10	0.56	0.56	0.11	0.56	0.56
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	32	151		210	318		165	2586	805	170	1784	798
v/s Ratio Prot	0.01	0.01		c0.11	c0.04		0.06	c0.22		c0.06	0.22	
v/s Ratio Perm									0.04			0.00
v/c Ratio	0.34	0.14		0.81	0.21		0.57	0.38	0.08	0.58	0.38	0.00
Uniform Delay, d1	58.0	49.2		50.7	39.0		51.3	14.5	11.9	51.1	14.8	11.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.4		20.0	0.3		2.7	0.4	0.2	3.3	0.2	0.0
Delay (s)	60.4	49.6		70.6	39.2		53.9	14.9	12.0	54.3	15.0	11.6
Level of Service	E	D		E	D		D	B	B	D	B	B
Approach Delay (s)		51.3			56.8			17.7			20.0	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	814	59	209	258	53	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	4.0	6.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	904	66	232	287	59	331
RTOR Reduction (vph)	0	22	0	0	0	50
Lane Group Flow (vph)	904	44	232	287	59	281
Turn Type		Perm	Prot			pt+ov
Protected Phases	4		3	8	2	2 3
Permitted Phases		4				
Actuated Green, G (s)	48.6	48.6	15.9	68.5	16.3	36.2
Effective Green, g (s)	48.6	48.6	15.9	68.5	16.3	36.2
Actuated g/C Ratio	0.51	0.51	0.17	0.72	0.17	0.38
Clearance Time (s)	6.0	6.0	4.0	6.0	4.0	
Vehicle Extension (s)	5.3	5.3	2.0	5.3	2.0	
Lane Grp Cap (vph)	955	812	297	1346	304	604
v/s Ratio Prot	c0.49		c0.13	0.15	0.03	c0.18
v/s Ratio Perm		0.03				
v/c Ratio	0.95	0.05	0.78	0.21	0.19	0.47
Uniform Delay, d1	21.9	11.6	37.8	4.3	33.6	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.1	0.1	11.6	0.2	0.1	0.2
Delay (s)	39.9	11.6	49.4	4.5	33.7	22.2
Level of Service	D	B	D	A	C	C
Approach Delay (s)	38.0			24.6	24.0	
Approach LOS	D			C	C	

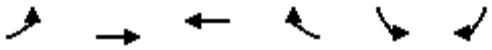
Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	94.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	601	267	4	179	99	193	13	541	196	118	640	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		2.0	3.7	3.7	2.0	4.0	4.0	3.0	4.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3465		1770	3471	1553	1770	3539	1583	1736	3539	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1736	3465		1770	3471	1553	1770	3539	1583	1736	3539	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	668	297	4	199	110	214	14	601	218	131	711	340
RTOR Reduction (vph)	0	1	0	0	0	191	0	0	159	0	0	87
Lane Group Flow (vph)	668	300	0	199	110	23	14	601	59	131	711	253
Heavy Vehicles (%)	4%	4%	2%	2%	4%	4%	2%	2%	2%	4%	2%	4%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	41.3	34.7		16.6	10.0	10.0	2.6	28.6	28.6	12.3	38.3	79.6
Effective Green, g (s)	42.3	37.7		18.6	12.3	12.3	4.6	30.6	30.6	13.3	40.3	83.6
Actuated g/C Ratio	0.38	0.34		0.17	0.11	0.11	0.04	0.27	0.27	0.12	0.36	0.75
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Vehicle Extension (s)	3.0	4.7		2.0	4.8	4.8	2.0	4.8	4.8	2.0	4.7	3.0
Lane Grp Cap (vph)	654	1164		293	381	170	73	965	432	206	1271	1157
v/s Ratio Prot	c0.38	c0.09		0.11	0.03		0.01	c0.17		c0.08	0.20	0.08
v/s Ratio Perm						0.02			0.04			0.08
v/c Ratio	1.02	0.26		0.68	0.29	0.14	0.19	0.62	0.14	0.64	0.56	0.22
Uniform Delay, d1	35.0	27.1		44.0	45.9	45.2	52.0	35.7	30.8	47.1	28.8	4.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.7	0.2		4.9	0.8	0.7	0.5	1.7	0.3	4.7	0.8	0.1
Delay (s)	75.7	27.3		48.9	46.7	45.9	52.5	37.5	31.1	51.8	29.7	4.5
Level of Service	E	C		D	D	D	D	D	C	D	C	A
Approach Delay (s)		60.6			47.2			36.0			24.9	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM Average Control Delay	40.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	112.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

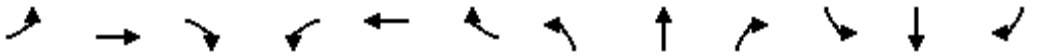
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	229	514	373	109	66	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1478	1770	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	254	571	414	121	73	168
RTOR Reduction (vph)	0	0	0	82	0	101
Lane Group Flow (vph)	254	571	414	39	73	67
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	14.6	33.4	14.8	14.8	5.1	19.7
Effective Green, g (s)	15.6	36.4	17.8	17.8	6.1	21.7
Actuated g/C Ratio	0.28	0.66	0.32	0.32	0.11	0.40
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	504	1237	1150	480	197	1256
v/s Ratio Prot	c0.14	c0.31	0.12		c0.04	0.02
v/s Ratio Perm				0.03		0.01
v/c Ratio	0.50	0.46	0.36	0.08	0.37	0.05
Uniform Delay, d1	16.4	4.5	14.1	12.8	22.6	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.4	0.3	0.1	0.4	0.0
Delay (s)	16.7	4.8	14.4	12.9	23.0	10.2
Level of Service	B	A	B	B	C	B
Approach Delay (s)		8.5	14.1		14.1	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	12.3
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

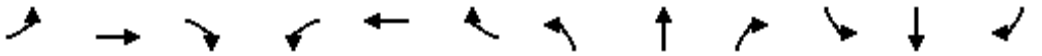
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	489	31	49	486	0	101	0	54	142	0	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0		2.0	4.0		2.0		3.0	3.7		3.7
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Frt	1.00	0.99		1.00	1.00		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	1843		1770	3539		1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	1843		1770	3539		1770		1583	1770		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	83	543	34	54	540	0	112	0	60	158	0	53
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	51	0	0	43
Lane Group Flow (vph)	83	575	0	54	540	0	112	0	9	158	0	10
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot			Prot		Perm	Prot		custom	Prot		custom
Protected Phases	7	4		3	8		5			6		
Permitted Phases						8			5			6
Actuated Green, G (s)	11.5	25.9		4.1	18.5		9.0		9.0	10.4		10.4
Effective Green, g (s)	13.5	27.9		6.1	20.5		11.0		10.0	12.4		12.4
Actuated g/C Ratio	0.20	0.40		0.09	0.30		0.16		0.14	0.18		0.18
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0		4.0	5.7		5.7
Vehicle Extension (s)	2.0	4.8		2.0	4.8		2.0		2.0	2.0		2.0
Lane Grp Cap (vph)	346	744		156	1050		282		229	318		284
v/s Ratio Prot	0.05	c0.31		0.03	c0.15		c0.06			c0.09		
v/s Ratio Perm									0.01			0.01
v/c Ratio	0.24	0.77		0.35	0.51		0.40		0.04	0.50		0.03
Uniform Delay, d1	23.5	17.9		29.6	20.2		26.1		25.4	25.5		23.4
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1	5.8		0.5	0.8		0.3		0.0	0.4		0.0
Delay (s)	23.6	23.6		30.1	21.0		26.4		25.4	26.0		23.4
Level of Service	C	C		C	C		C		C	C		C
Approach Delay (s)		23.6			21.8			26.1			25.3	
Approach LOS		C			C			C			C	

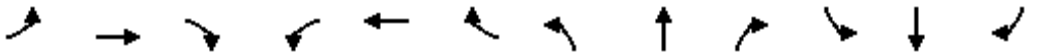
Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	13.7
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	170	306	92	253	117	537	1093	79	145	1164	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	166	189	340	102	281	130	597	1214	88	161	1293	134
RTOR Reduction (vph)	0	0	282	0	0	111	0	0	41	0	0	0
Lane Group Flow (vph)	166	189	58	102	281	19	597	1214	47	161	1293	134
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	14.8	17.4	17.4	11.3	14.9	14.9	25.1	56.8	56.8	14.5	46.2	120.0
Effective Green, g (s)	15.8	20.4	20.4	12.3	17.4	17.4	26.1	59.8	59.8	15.5	49.2	120.0
Actuated g/C Ratio	0.13	0.17	0.17	0.10	0.14	0.14	0.22	0.50	0.50	0.13	0.41	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	233	602	269	181	513	230	747	1764	789	229	2085	1583
v/s Ratio Prot	c0.09	0.05		0.06	c0.08		c0.17	c0.34		0.09	0.25	
v/s Ratio Perm			0.04			0.01			0.03			0.08
v/c Ratio	0.71	0.31	0.21	0.56	0.55	0.08	0.80	0.69	0.06	0.70	0.62	0.08
Uniform Delay, d1	49.9	43.7	42.9	51.3	47.6	44.4	44.5	23.0	15.6	50.0	28.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	0.5	0.7	2.4	2.1	0.3	6.0	2.2	0.1	7.7	0.7	0.1
Delay (s)	58.2	44.2	43.6	53.7	49.7	44.7	50.5	25.2	15.7	57.8	28.7	0.1
Level of Service	E	D	D	D	D	D	D	C	B	E	C	A
Approach Delay (s)		47.2			49.3			32.7			29.2	
Approach LOS		D			D			C			C	

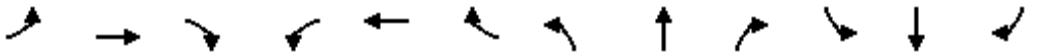
Intersection Summary			
HCM Average Control Delay	35.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	0	59	0	0	0	28	639	0	0	718	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0				3.0	2.6			2.6	3.0
Lane Util. Factor	0.97		1.00				1.00	0.95			0.95	1.00
Frpb, ped/bikes	1.00		0.99				1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	3433		1562				1770	3539			3539	1548
Flt Permitted	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	3433		1562				1770	3539			3539	1548
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	151	0	66	0	0	0	31	710	0	0	798	8
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	151	0	66	0	0	0	31	710	0	0	798	8
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free				Prot					Free
Protected Phases	4						5	2			6	
Permitted Phases			Free									Free
Actuated Green, G (s)	7.0		45.4				2.1	28.4			22.3	45.4
Effective Green, g (s)	8.0		45.4				3.1	31.8			25.7	45.4
Actuated g/C Ratio	0.18		1.00				0.07	0.70			0.57	1.00
Clearance Time (s)	4.0						4.0	6.0			6.0	
Vehicle Extension (s)	2.0						2.0	3.9			3.9	
Lane Grp Cap (vph)	605		1562				121	2479			2003	1548
v/s Ratio Prot	c0.04						0.02	c0.20			c0.23	
v/s Ratio Perm			0.04									0.01
v/c Ratio	0.25		0.04				0.26	0.29			0.40	0.01
Uniform Delay, d1	16.1		0.0				20.1	2.5			5.5	0.0
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	0.1		0.1				0.4	0.1			0.2	0.0
Delay (s)	16.2		0.1				20.5	2.6			5.7	0.0
Level of Service	B		A				C	A			A	A
Approach Delay (s)		11.3			0.0			3.4			5.6	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	45.4	Sum of lost time (s)	8.2
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

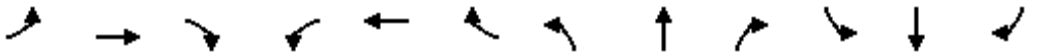
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	7	20	46	0	354	3	367	49	269	835	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0		3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.97		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00		0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1792	1536	3433		1562	1770	3539	1562	1770	1863	1538
Flt Permitted		0.96	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1792	1536	3433		1562	1770	3539	1562	1770	1863	1538
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	8	22	51	0	393	3	408	54	299	928	9
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	38	2	51	0	393	3	408	54	299	928	7
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	3	3		4			5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)		4.8	4.8	5.7		69.8	1.0	24.0	69.8	17.3	40.3	40.3
Effective Green, g (s)		5.8	5.8	6.7		69.8	2.0	25.0	69.8	18.3	41.3	41.3
Actuated g/C Ratio		0.08	0.08	0.10		1.00	0.03	0.36	1.00	0.26	0.59	0.59
Clearance Time (s)		4.0	4.0	4.0			4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0	2.0			2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)		149	128	330		1562	51	1268	1562	464	1102	910
v/s Ratio Prot		0.02		0.01			0.00	0.12		c0.17	c0.50	
v/s Ratio Perm			0.00			c0.25			0.03			0.00
v/c Ratio		0.26	0.01	0.15		0.25	0.06	0.32	0.03	0.64	0.84	0.01
Uniform Delay, d1		30.0	29.4	29.0		0.0	33.0	16.2	0.0	22.9	11.6	5.8
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.3	0.0	0.1		0.4	0.2	0.3	0.0	2.3	6.5	0.0
Delay (s)		30.3	29.4	29.0		0.4	33.2	16.5	0.0	25.2	18.1	5.9
Level of Service		C	C	C		A	C	B	A	C	B	A
Approach Delay (s)		30.0			3.7			14.7			19.7	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	69.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

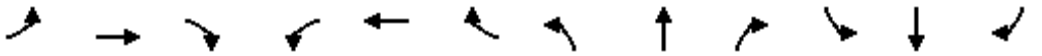
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	2	69	16	2	0	109	441	15	4	320	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1788	1478		1783		1770	3539	1583	1770	3539	1583
Flt Permitted		0.96	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1788	1478		1783		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	2	77	18	2	0	121	490	17	4	356	16
RTOR Reduction (vph)	0	0	68	0	0	0	0	0	7	0	0	9
Lane Group Flow (vph)	0	12	9	0	20	0	121	490	10	4	356	7
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		3.9	3.9		0.7		7.1	25.3	25.3	0.6	18.8	18.8
Effective Green, g (s)		5.8	5.8		2.6		8.1	28.3	28.3	1.6	21.8	21.8
Actuated g/C Ratio		0.12	0.12		0.05		0.17	0.58	0.58	0.03	0.45	0.45
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1	2.0	4.1	4.1
Lane Grp Cap (vph)		213	176		95		294	2057	920	58	1584	709
v/s Ratio Prot		c0.01			c0.01		c0.07	c0.14		0.00	0.10	
v/s Ratio Perm			0.01						0.01			0.00
v/c Ratio		0.06	0.05		0.21		0.41	0.24	0.01	0.07	0.22	0.01
Uniform Delay, d1		19.0	19.0		22.1		18.2	5.0	4.3	22.8	8.3	7.5
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.0	0.0		0.4		0.3	0.1	0.0	0.2	0.1	0.0
Delay (s)		19.1	19.1		22.5		18.5	5.0	4.3	23.0	8.4	7.5
Level of Service		B	B		C		B	A	A	C	A	A
Approach Delay (s)		19.1			22.5			7.6			8.5	
Approach LOS		B			C			A			A	

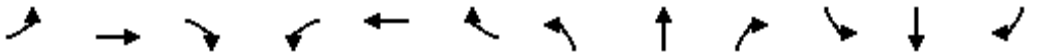
Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	7.4
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	0	11	37	0	71	105	799	19	20	543	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1770	1583	1770	3527		1770	3531	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1770	1583	1770	3527		1770	3531	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	0	12	41	0	79	117	888	21	22	603	9
RTOR Reduction (vph)	0	0	11	0	0	65	0	1	0	0	1	0
Lane Group Flow (vph)	0	24	1	0	41	14	117	908	0	22	611	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		5.0	5.0		12.1	12.1	8.0	36.0		2.2	30.2	
Effective Green, g (s)		6.0	6.0		13.1	13.1	9.0	39.0		3.2	33.2	
Actuated g/C Ratio		0.08	0.08		0.18	0.18	0.12	0.53		0.04	0.45	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		145	130		318	284	218	1884		78	1606	
v/s Ratio Prot		c0.01			c0.02		c0.07	c0.26		0.01	0.17	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.17	0.01		0.13	0.05	0.54	0.48		0.28	0.38	
Uniform Delay, d1		31.2	30.8		25.2	24.8	30.0	10.7		33.8	13.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.1	0.0	1.3	0.3		0.7	0.3	
Delay (s)		31.4	30.8		25.2	24.8	31.3	11.0		34.5	13.4	
Level of Service		C	C		C	C	C	B		C	B	
Approach Delay (s)		31.2			25.0			13.3			14.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

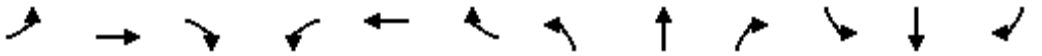


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	301	544	52	238	83	298	480	33	125	670	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1486	1856	3592	1472	3601	3592	1477	1837	3556	1462
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1486	1856	3592	1472	3601	3592	1477	1837	3556	1462
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	334	604	58	264	92	331	533	37	139	744	32
RTOR Reduction (vph)	0	0	176	0	0	70	0	0	23	0	0	16
Lane Group Flow (vph)	29	334	428	58	264	22	331	533	14	139	744	16
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.2	15.6	30.6	7.6	18.0	18.0	15.0	30.5	30.5	12.9	28.4	28.4
Effective Green, g (s)	6.2	18.6	32.6	8.6	21.0	21.0	16.0	33.5	33.5	13.9	31.4	31.4
Actuated g/C Ratio	0.07	0.22	0.38	0.10	0.24	0.24	0.19	0.39	0.39	0.16	0.37	0.37
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	134	777	563	186	877	359	670	1399	575	297	1298	534
v/s Ratio Prot	0.02	0.09	c0.14	c0.03	0.07		0.09	0.15		0.08	c0.21	
v/s Ratio Perm			0.15			0.02			0.01			0.01
v/c Ratio	0.22	0.43	0.76	0.31	0.30	0.06	0.49	0.38	0.03	0.47	0.57	0.03
Uniform Delay, d1	37.6	29.1	23.3	36.0	26.5	24.9	31.4	18.8	16.2	32.7	21.9	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.7	5.4	0.4	0.3	0.1	0.2	0.3	0.0	0.4	0.9	0.0
Delay (s)	37.9	29.8	28.7	36.3	26.8	25.1	31.6	19.1	16.2	33.1	22.8	17.6
Level of Service	D	C	C	D	C	C	C	B	B	C	C	B
Approach Delay (s)		29.4			27.8			23.6			24.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1156	49	70	754	52	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	1.3	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3518		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3518		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1284	54	78	838	58	91
RTOR Reduction (vph)	2	0	0	0	0	77
Lane Group Flow (vph)	1336	0	78	838	58	14
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	38.4		6.5	50.6	9.4	9.4
Effective Green, g (s)	41.1		7.5	53.3	10.4	10.4
Actuated g/C Ratio	0.60		0.11	0.78	0.15	0.15
Clearance Time (s)	5.7		4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2126		195	2774	271	242
v/s Ratio Prot	c0.38		c0.04	0.24	c0.03	
v/s Ratio Perm						0.01
v/c Ratio	0.63		0.40	0.30	0.21	0.06
Uniform Delay, d1	8.6		28.2	2.1	25.2	24.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7		0.5	0.1	0.1	0.0
Delay (s)	9.3		28.6	2.2	25.4	24.6
Level of Service	A		C	A	C	C
Approach Delay (s)	9.3			4.4	24.9	
Approach LOS	A			A	C	

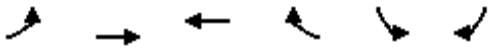
Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	328	746	43	206	72	266	929	37	92	907	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1562	1770	3539	1562	3433	3539	1562	1770	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1562	1770	3539	1562	3433	3539	1562	1770	3539	1562
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	116	364	829	48	229	80	296	1032	41	102	1008	50
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	116	364	829	48	229	80	296	1032	41	102	1008	50
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.5	21.2	125.0	8.2	17.3	125.0	15.2	62.0	125.0	13.9	60.7	125.0
Effective Green, g (s)	13.5	23.9	125.0	9.2	20.0	125.0	16.2	65.0	125.0	14.9	63.7	125.0
Actuated g/C Ratio	0.11	0.19	1.00	0.07	0.16	1.00	0.13	0.52	1.00	0.12	0.51	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	191	677	1562	130	566	1562	445	1840	1562	211	1803	1562
v/s Ratio Prot	c0.07	0.10		0.03	0.06		c0.09	c0.29		0.06	c0.28	
v/s Ratio Perm			c0.53			0.05			0.03			0.03
v/c Ratio	0.61	0.54	0.53	0.37	0.40	0.05	0.67	0.56	0.03	0.48	0.56	0.03
Uniform Delay, d1	53.2	45.6	0.0	55.1	47.2	0.0	51.8	20.3	0.0	51.5	21.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	1.3	1.3	0.6	0.8	0.1	2.9	1.2	0.0	0.6	0.5	0.0
Delay (s)	56.9	46.8	1.3	55.8	48.0	0.1	54.7	21.6	0.0	52.1	21.5	0.0
Level of Service	E	D	A	E	D	A	D	C	A	D	C	A
Approach Delay (s)		18.9			38.3			28.1			23.3	
Approach LOS		B			D			C			C	

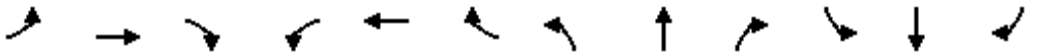
Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	3.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	96	548	620	403	221	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1511	1736	1537
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1511	1736	1537
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	107	609	689	448	246	99
RTOR Reduction (vph)	0	0	0	240	0	55
Lane Group Flow (vph)	107	609	689	208	246	44
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	7.1	28.5	29.0	29.0	16.4	23.5
Effective Green, g (s)	8.1	30.5	31.0	31.0	19.4	29.5
Actuated g/C Ratio	0.12	0.46	0.46	0.46	0.29	0.44
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	211	1585	1611	701	504	679
v/s Ratio Prot	c0.06	0.18	c0.20		c0.14	0.01
v/s Ratio Perm				0.14		0.02
v/c Ratio	0.51	0.38	0.43	0.30	0.49	0.06
Uniform Delay, d1	27.5	12.0	12.0	11.1	19.6	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	0.2	0.2	0.3	0.0
Delay (s)	28.2	12.1	12.2	11.4	19.9	10.7
Level of Service	C	B	B	B	B	B
Approach Delay (s)		14.5	11.8		17.2	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	4.6
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	736	9	7	993	200	16	1	12	68	3	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00			1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3432		1787	3438	1483	1787	1619			1694	1450
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3432		1787	3438	1483	1787	1619			1694	1450
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	34	818	10	8	1103	222	18	1	13	76	3	48
RTOR Reduction (vph)	0	0	0	0	0	97	0	12	0	0	0	0
Lane Group Flow (vph)	34	828	0	8	1103	125	18	2	0	0	79	48
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	2.4	40.1		0.9	38.6	38.6	6.0	6.0			7.2	7.2
Effective Green, g (s)	3.4	42.1		1.9	40.6	40.6	7.0	7.0			8.2	8.2
Actuated g/C Ratio	0.05	0.59		0.03	0.56	0.56	0.10	0.10			0.11	0.11
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	81	2010		47	1941	837	174	158			193	165
v/s Ratio Prot	c0.02	0.24		0.00	c0.32		c0.01	0.00			c0.05	
v/s Ratio Perm						0.08						0.03
v/c Ratio	0.42	0.41		0.17	0.57	0.15	0.10	0.01			0.41	0.29
Uniform Delay, d1	33.3	8.1		34.2	10.0	7.4	29.6	29.3			29.6	29.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.3	0.1		0.6	0.4	0.1	0.1	0.0			1.4	1.0
Delay (s)	34.6	8.3		34.9	10.4	7.5	29.7	29.3			31.0	30.2
Level of Service	C	A		C	B	A	C	C			C	C
Approach Delay (s)		9.3			10.1			29.5			30.7	
Approach LOS		A			B			C			C	

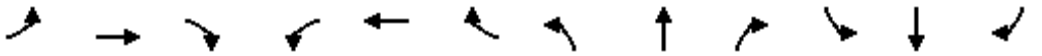
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	12.7
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	580	259	228	983	252	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1568	1770	3539	1770	1571
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1568	1770	3539	1770	1571
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	644	288	253	1092	280	258
RTOR Reduction (vph)	0	138	0	0	0	19
Lane Group Flow (vph)	644	150	253	1092	280	239
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	16.1	29.2	16.8	36.9	13.1	29.9
Effective Green, g (s)	18.1	31.2	17.8	38.9	14.1	31.9
Actuated g/C Ratio	0.30	0.52	0.30	0.65	0.23	0.53
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1068	894	525	2294	416	914
v/s Ratio Prot	c0.18	0.04	0.14	c0.31	c0.16	0.08
v/s Ratio Perm		0.06				0.07
v/c Ratio	0.60	0.17	0.48	0.48	0.67	0.26
Uniform Delay, d1	17.9	7.6	17.3	5.4	20.9	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0	0.3	0.7	3.4	0.1
Delay (s)	18.9	7.6	17.6	6.1	24.2	7.7
Level of Service	B	A	B	A	C	A
Approach Delay (s)	15.4			8.2	16.3	
Approach LOS	B			A	B	

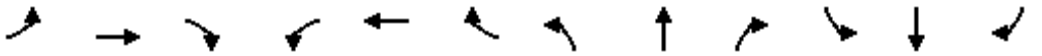
Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



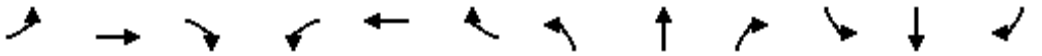
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	913	252	65	1149	36	348	263	24	57	273	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	3.2	3.0	3.0	3.5	3.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	126	1014	280	72	1277	40	387	292	27	63	303	130
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	126	1014	280	72	1277	40	387	292	27	63	303	130
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.4	43.0	120.0	12.6	43.2	120.0	29.6	37.4	120.0	7.6	15.1	120.0
Effective Green, g (s)	13.4	45.5	120.0	13.6	45.7	120.0	30.6	39.9	120.0	8.6	17.6	120.0
Actuated g/C Ratio	0.11	0.38	1.00	0.11	0.38	1.00	0.26	0.33	1.00	0.07	0.15	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	4.3		2.0	4.3		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	198	1928	1583	201	1937	1583	451	1177	1583	127	519	1583
v/s Ratio Prot	c0.07	0.20		0.04	c0.25		c0.22	0.08		0.04	c0.09	
v/s Ratio Perm			0.18			0.03			0.02			0.08
v/c Ratio	0.64	0.53	0.18	0.36	0.66	0.03	0.86	0.25	0.02	0.50	0.58	0.08
Uniform Delay, d1	51.0	28.9	0.0	49.2	30.7	0.0	42.6	29.1	0.0	53.6	47.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.9	1.0	0.2	0.4	1.0	0.0	14.4	0.2	0.0	1.1	1.9	0.1
Delay (s)	55.8	29.9	0.2	49.6	31.7	0.0	57.0	29.3	0.0	54.7	49.7	0.1
Level of Service	E	C	A	D	C	A	E	C	A	D	D	A
Approach Delay (s)		26.4			31.7			43.4			37.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.7
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



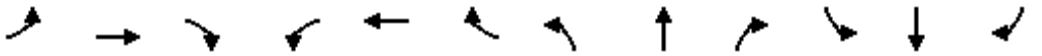
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	160	142	60	155	134	193	940	75	104	703	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	137	178	158	67	172	149	214	1044	83	116	781	37
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	137	178	158	67	172	149	214	1044	83	116	781	37
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.5	19.0	120.0	7.8	13.3	120.0	18.9	60.9	120.0	12.2	54.2	120.0
Effective Green, g (s)	14.5	21.5	120.0	8.8	15.8	120.0	19.9	63.4	120.0	13.2	56.7	120.0
Actuated g/C Ratio	0.12	0.18	1.00	0.07	0.13	1.00	0.17	0.53	1.00	0.11	0.47	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	214	634	1583	130	466	1583	294	2687	1583	195	2403	1583
v/s Ratio Prot	c0.08	0.05		0.04	c0.05		c0.12	c0.21		c0.07	0.15	
v/s Ratio Perm			0.10			0.09			0.05			0.02
v/c Ratio	0.64	0.28	0.10	0.52	0.37	0.09	0.73	0.39	0.05	0.59	0.33	0.02
Uniform Delay, d1	50.3	42.6	0.0	53.5	47.6	0.0	47.5	16.8	0.0	50.9	19.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.3	0.1	1.4	0.7	0.1	7.4	0.4	0.1	3.2	0.1	0.0
Delay (s)	55.1	42.9	0.1	55.0	48.2	0.1	54.9	17.2	0.1	54.1	19.8	0.0
Level of Service	E	D	A	D	D	A	D	B	A	D	B	A
Approach Delay (s)		32.1			30.9			22.2			23.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



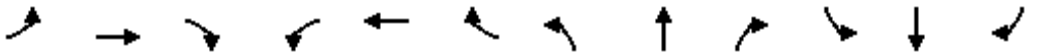
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	871	12	1	531	10	6	0	2	14	4	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7		2.0	4.7		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00		1.00	0.85			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.96	1.00
Satd. Flow (prot)	1770	3532		1770	3529		1770	1583			1791	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.96	1.00
Satd. Flow (perm)	1770	3532		1770	3529		1770	1583			1791	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	70	968	13	1	590	11	7	0	2	16	4	41
RTOR Reduction (vph)	0	0	0	0	1	0	0	2	0	0	0	36
Lane Group Flow (vph)	70	981	0	1	600	0	7	0	0	0	20	5
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	6.2	34.9		0.8	28.5		1.2	1.2			6.8	6.8
Effective Green, g (s)	7.2	35.9		1.8	29.5		2.2	2.2			7.8	7.8
Actuated g/C Ratio	0.12	0.59		0.03	0.49		0.04	0.04			0.13	0.13
Clearance Time (s)	4.0	5.7		3.0	5.7		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	211	2099		53	1724		64	58			231	204
v/s Ratio Prot	c0.04	c0.28		0.00	0.17		c0.00	0.00			c0.01	
v/s Ratio Perm												0.00
v/c Ratio	0.33	0.47		0.02	0.35		0.11	0.00			0.09	0.03
Uniform Delay, d1	24.4	6.9		28.4	9.5		28.2	28.0			23.2	23.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.3	0.3		0.1	0.2		0.3	0.0			0.1	0.0
Delay (s)	24.7	7.2		28.5	9.7		28.4	28.0			23.2	23.0
Level of Service	C	A		C	A		C	C			C	C
Approach Delay (s)		8.3			9.8			28.3			23.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	60.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



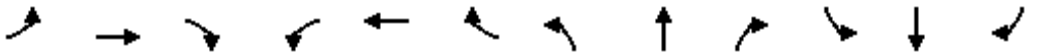
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	376	48	43	331	8	26	3	9	10	8	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97			0.97	1.00
Satd. Flow (prot)	1770	3479		1770	3539	1583		1743			1813	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97			0.97	1.00
Satd. Flow (perm)	1770	3479		1770	3539	1583		1743			1813	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	418	53	48	368	9	29	3	10	11	9	6
RTOR Reduction (vph)	0	6	0	0	0	4	0	9	0	0	0	5
Lane Group Flow (vph)	29	465	0	48	368	5	0	33	0	0	20	1
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	1.8	28.7		3.8	30.7	30.7		3.0			3.9	3.9
Effective Green, g (s)	2.8	31.7		4.8	33.7	31.7		4.0			4.9	4.9
Actuated g/C Ratio	0.05	0.56		0.08	0.59	0.56		0.07			0.09	0.09
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0			4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0			2.0	2.0
Lane Grp Cap (vph)	87	1931		149	2089	879		122			156	136
v/s Ratio Prot	0.02	c0.13		c0.03	0.10			c0.02			c0.01	
v/s Ratio Perm						0.00						0.00
v/c Ratio	0.33	0.24		0.32	0.18	0.01		0.27			0.13	0.00
Uniform Delay, d1	26.2	6.5		24.6	5.4	5.7		25.2			24.1	23.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.8	0.2		0.5	0.1	0.0		0.4			0.1	0.0
Delay (s)	27.1	6.7		25.1	5.5	5.7		25.6			24.3	23.9
Level of Service	C	A		C	A	A		C			C	C
Approach Delay (s)		7.9			7.7			25.6			24.2	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	11.7
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



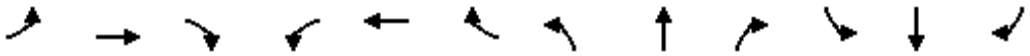
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	280	67	38	158	177	90	997	30	221	932	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	108	311	74	42	176	197	100	1108	33	246	1036	171
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	108	311	74	42	176	197	100	1108	33	246	1036	171
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.5	25.0	120.0	8.2	20.7	120.0	13.4	47.2	120.0	20.2	54.0	120.0
Effective Green, g (s)	13.5	27.5	120.0	9.2	23.2	120.0	14.4	50.2	120.0	21.2	57.0	120.0
Actuated g/C Ratio	0.11	0.23	1.00	0.08	0.19	1.00	0.12	0.42	1.00	0.18	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	199	427	1583	136	684	1583	212	1480	1583	313	1681	1583
v/s Ratio Prot	c0.06	c0.17		0.02	0.05		0.06	c0.31		c0.14	0.29	
v/s Ratio Perm			0.05			0.12			0.02			0.11
v/c Ratio	0.54	0.73	0.05	0.31	0.26	0.12	0.47	0.75	0.02	0.79	0.62	0.11
Uniform Delay, d1	50.3	42.8	0.0	52.4	41.1	0.0	49.3	29.6	0.0	47.2	23.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	6.1	0.1	1.3	0.2	0.2	1.7	2.1	0.0	12.2	1.7	0.1
Delay (s)	53.3	48.9	0.1	53.7	41.3	0.2	50.9	31.7	0.0	59.4	25.1	0.1
Level of Service	D	D	A	D	D	A	D	C	A	E	C	A
Approach Delay (s)		42.5			23.0			32.4			28.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	325	0	0	501	255	1	1	0	217	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0			3.0	3.0
Lane Util. Factor		0.95			1.00	1.00		1.00			1.00	1.00
Frt		1.00			1.00	0.85		1.00			1.00	0.85
Flt Protected		1.00			1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)		3539			1863	1583		1817			1770	1583
Flt Permitted		1.00			1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)		3539			1863	1583		1863			1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	361	0	0	557	283	1	1	0	241	0	14
RTOR Reduction (vph)	0	0	0	0	0	49	0	0	0	0	0	11
Lane Group Flow (vph)	0	361	0	0	557	234	0	2	0	0	241	3
Turn Type						pt+ov	Perm			Split		Perm
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases							3					4
Actuated Green, G (s)		68.0			58.8	81.8		1.0			18.1	18.1
Effective Green, g (s)		69.0			59.8	82.8		2.0			19.1	19.1
Actuated g/C Ratio		0.69			0.60	0.83		0.02			0.19	0.19
Clearance Time (s)		4.9			4.9			4.0			4.0	4.0
Vehicle Extension (s)		3.1			3.1			2.0			2.0	2.0
Lane Grp Cap (vph)		2442			1114	1311		37			338	302
v/s Ratio Prot		c0.10			c0.30	0.15					c0.14	
v/s Ratio Perm								c0.00				0.00
v/c Ratio		0.15			0.50	0.18		0.05			0.71	0.01
Uniform Delay, d1		5.4			11.5	1.7		48.1			37.9	32.8
Progression Factor		1.00			0.78	1.75		1.00			1.00	1.00
Incremental Delay, d2		0.1			0.4	0.1		0.2			5.8	0.0
Delay (s)		5.5			9.4	3.1		48.3			43.7	32.8
Level of Service		A			A	A		D			D	C
Approach Delay (s)		5.5			7.3			48.3			43.1	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

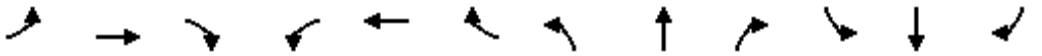


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	584	9	3	724	0	19	0	19	56	5	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9	2.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00			0.93		1.00	0.90	
Flt Protected		1.00	1.00	0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1695		1770	1667	
Flt Permitted		1.00	1.00	0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1695		1770	1667	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	649	10	3	804	0	21	0	21	62	6	14
RTOR Reduction (vph)	0	0	3	0	0	0	0	20	0	0	13	0
Lane Group Flow (vph)	0	649	7	3	804	0	0	22	0	62	7	0
Turn Type			Perm	Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases			2									
Actuated Green, G (s)		70.2	70.2	1.6	74.8			4.8		7.5	7.5	
Effective Green, g (s)		71.2	71.2	2.6	75.8			5.8		8.5	8.5	
Actuated g/C Ratio		0.71	0.71	0.03	0.76			0.06		0.08	0.08	
Clearance Time (s)		4.9	4.9	3.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1	3.1	2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		2520	1127	46	2683			98		150	142	
v/s Ratio Prot		0.18		0.00	c0.23			c0.01		c0.04	0.00	
v/s Ratio Perm			0.00									
v/c Ratio		0.26	0.01	0.07	0.30			0.23		0.41	0.05	
Uniform Delay, d1		5.1	4.2	47.5	3.8			45.0		43.4	42.0	
Progression Factor		1.97	1.99	1.09	0.78			1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0	0.2	0.3			0.4		0.7	0.1	
Delay (s)		10.0	8.3	52.0	3.2			45.4		44.1	42.1	
Level of Service		B	A	D	A			D		D	D	
Approach Delay (s)		10.0			3.4			45.4			43.6	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

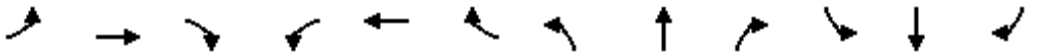
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	654	16	111	291	33	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		2.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3526		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3526		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	727	18	123	323	37	144
RTOR Reduction (vph)	3	0	0	0	0	127
Lane Group Flow (vph)	742	0	123	323	37	17
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	26.2		6.9	36.1	5.0	5.0
Effective Green, g (s)	27.2		7.9	37.1	6.0	6.0
Actuated g/C Ratio	0.54		0.16	0.74	0.12	0.12
Clearance Time (s)	4.9		3.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	1918		280	2626	212	190
v/s Ratio Prot	c0.21		c0.07	0.09	c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.39		0.44	0.12	0.17	0.09
Uniform Delay, d1	6.6		19.0	1.8	19.8	19.6
Progression Factor	1.56		0.99	0.98	1.00	1.00
Incremental Delay, d2	0.1		0.3	0.1	0.1	0.1
Delay (s)	10.4		19.1	1.9	19.9	19.6
Level of Service	B		B	A	B	B
Approach Delay (s)	10.4			6.6	19.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



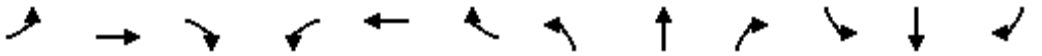
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	730	4	16	1028	90	5	4	12	283	4	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3537		1770	3496			1698		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3537		1770	3496			1698		1681	1687	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	811	4	18	1142	100	6	4	13	314	4	54
RTOR Reduction (vph)	0	0	0	0	4	0	0	13	0	0	0	46
Lane Group Flow (vph)	50	815	0	18	1238	0	0	10	0	160	158	8
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	6.4	60.7		4.8	59.1			2.6		14.4	14.4	14.4
Effective Green, g (s)	7.4	61.7		5.8	60.1			3.6		15.4	15.4	15.4
Actuated g/C Ratio	0.07	0.62		0.06	0.60			0.04		0.15	0.15	0.15
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	131	2182		103	2101			61		259	260	244
v/s Ratio Prot	0.03	c0.23		0.01	c0.35			c0.01		c0.10	0.09	
v/s Ratio Perm												0.01
v/c Ratio	0.38	0.37		0.17	0.59			0.17		0.62	0.61	0.03
Uniform Delay, d1	44.1	9.5		44.8	12.3			46.8		39.5	39.5	36.0
Progression Factor	1.03	1.39		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.5		0.3	0.4			0.5		3.7	3.4	0.0
Delay (s)	46.0	13.7		45.1	12.8			47.2		43.3	42.8	36.0
Level of Service	D	B		D	B			D		D	D	D
Approach Delay (s)		15.6			13.2			47.2			42.0	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



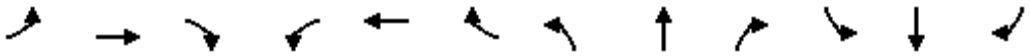
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	985	151	0	1414	1315	0	0	0	258	524	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3			2.9	3.9				3.7	4.3	3.7
Lane Util. Factor		0.95			0.91	0.91				0.95	*0.90	1.00
Frt		0.98			0.96	0.85				1.00	1.00	0.85
Flt Protected		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3469			3263	1441				1681	1673	1583
Flt Permitted		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3469			3263	1441				1681	1673	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1094	168	0	1571	1461	0	0	0	287	582	191
RTOR Reduction (vph)	0	0	0	0	30	373	0	0	0	0	0	0
Lane Group Flow (vph)	0	1262	0	0	2067	562	0	0	0	258	611	191
Turn Type						Perm				Split		custom
Protected Phases		2			6					4	4	4
Permitted Phases						6						6
Actuated Green, G (s)		59.1			59.1	59.1				30.7	30.7	89.8
Effective Green, g (s)		60.7			61.1	60.1				32.3	31.7	93.0
Actuated g/C Ratio		0.61			0.61	0.60				0.32	0.32	0.93
Clearance Time (s)		4.9			4.9	4.9				5.3	5.3	5.3
Vehicle Extension (s)		3.8			3.8	3.8				2.0	2.0	2.0
Lane Grp Cap (vph)		2106			1994	866				543	530	1531
v/s Ratio Prot		0.36			c0.63					0.15	c0.37	0.04
v/s Ratio Perm						0.39						0.08
v/c Ratio		0.60			1.04	0.65				0.48	1.15	0.12
Uniform Delay, d1		12.1			19.4	13.0				27.1	34.1	0.3
Progression Factor		1.00			1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		1.3			30.3	1.8				0.2	88.6	0.0
Delay (s)		13.4			49.7	14.9				27.3	122.8	0.3
Level of Service		B			D	B				C	F	A
Approach Delay (s)		13.4			39.0			0.0			77.5	
Approach LOS		B			D			A			E	

Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



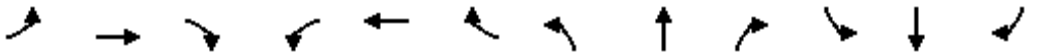
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	1072	0	0	2309	303	0	0	942	0	0	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.9			3.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4796	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4796	1362			1611			2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	190	1191	0	0	2566	337	0	0	1047	0	0	467
RTOR Reduction (vph)	0	0	0	0	2	102	0	0	0	0	0	4
Lane Group Flow (vph)	190	1191	0	0	2598	201	0	0	1047	0	0	463
Turn Type	Prot					Perm			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						6			Free			
Actuated Green, G (s)	13.2	60.0			37.9	37.9			60.0			13.2
Effective Green, g (s)	15.2	60.0			39.9	39.9			60.0			15.2
Actuated g/C Ratio	0.25	1.00			0.66	0.66			1.00			0.25
Clearance Time (s)	4.0	4.9			4.9	4.9						4.0
Vehicle Extension (s)	2.0	3.9			3.8	3.8						2.0
Lane Grp Cap (vph)	448	3539			3189	906			1611			706
v/s Ratio Prot	0.11	0.34			c0.54							0.17
v/s Ratio Perm						0.15			c0.65			
v/c Ratio	0.42	0.34			0.81	0.22			0.65			0.66
Uniform Delay, d1	18.7	0.0			7.3	4.0			0.0			20.1
Progression Factor	1.00	1.00			2.06	1.75			1.00			1.00
Incremental Delay, d2	0.2	0.1			0.9	0.2			2.0			1.7
Delay (s)	19.0	0.1			16.1	7.1			2.0			21.7
Level of Service	B	A			B	A			A			C
Approach Delay (s)		2.7			15.2			2.0			21.7	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	2.9
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	315	1527	301	306	1189	199	475	863	199	216	646	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	5.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3319	5085	1545	3319	5085	1560	3319	5085	1560	3319	5015	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3319	5085	1545	3319	5085	1560	3319	5085	1560	3319	5015	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	350	1697	334	340	1321	221	528	959	221	240	718	60
RTOR Reduction (vph)	0	0	175	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	350	1697	159	340	1321	221	528	959	221	240	770	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	16.0	37.8	37.8	16.0	39.8	120.0	22.0	31.3	120.0	13.2	22.5	
Effective Green, g (s)	17.0	40.8	38.8	17.0	42.8	120.0	23.0	34.3	120.0	14.2	25.5	
Actuated g/C Ratio	0.14	0.34	0.32	0.14	0.36	1.00	0.19	0.29	1.00	0.12	0.21	
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.1	4.1	2.0	3.3		2.0	4.2		2.0	4.5	
Lane Grp Cap (vph)	470	1729	500	470	1814	1560	636	1453	1560	393	1066	
v/s Ratio Prot	0.11	c0.33		0.10	c0.26		c0.16	c0.19		0.07	0.15	
v/s Ratio Perm			0.10			0.14			0.14			
v/c Ratio	0.74	0.98	0.32	0.72	0.73	0.14	0.83	0.66	0.14	0.61	0.72	
Uniform Delay, d1	49.4	39.2	30.6	49.3	33.5	0.0	46.6	37.7	0.0	50.3	44.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.5	17.7	1.7	4.6	1.5	0.2	8.6	1.3	0.2	2.0	2.8	
Delay (s)	55.0	56.9	32.3	53.9	35.1	0.2	55.3	39.0	0.2	52.2	46.7	
Level of Service	D	E	C	D	D	A	E	D	A	D	D	
Approach Delay (s)		53.2			34.4			39.0			48.0	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	43.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

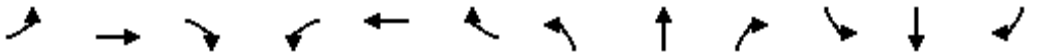


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	1006	57	159	1188	4	35	4	425	8	2	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1762	3616		1711	3538			1782	1583		1790	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (perm)	1762	3616		1711	3538			1782	1583		1790	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	1118	63	177	1320	4	39	4	472	9	2	17
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	206	0	0	16
Lane Group Flow (vph)	20	1179	0	177	1324	0	0	43	266	0	11	1
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	2.9	70.4		19.3	88.5			7.4	26.7		3.5	3.5
Effective Green, g (s)	3.9	72.9		20.3	91.0			8.9	29.7		5.0	5.0
Actuated g/C Ratio	0.03	0.61		0.17	0.76			0.07	0.25		0.04	0.04
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	57	2197		289	2683			132	425		75	62
v/s Ratio Prot	0.01	c0.33		0.10	0.37			0.02	c0.11		c0.01	
v/s Ratio Perm									0.06			0.00
v/c Ratio	0.35	0.54		0.61	0.49			0.33	0.63		0.15	0.01
Uniform Delay, d1	56.8	13.7		46.2	5.6			52.7	40.2		55.4	55.1
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.4	0.3		2.7	0.7			0.5	2.1		0.3	0.0
Delay (s)	58.2	14.0		48.9	6.3			53.2	42.3		55.8	55.2
Level of Service	E	B		D	A			D	D		E	E
Approach Delay (s)		14.8			11.3			43.2			55.4	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

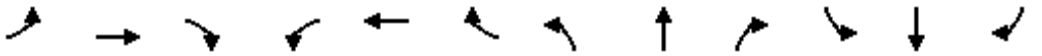
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1345	14	36	1324	22	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3534		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3534		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1494	16	40	1471	24	29
RTOR Reduction (vph)	0	0	0	0	0	27
Lane Group Flow (vph)	1510	0	40	1471	24	2
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	85.6		6.2	95.8	5.7	5.7
Effective Green, g (s)	87.6		8.2	97.8	7.7	7.7
Actuated g/C Ratio	0.74		0.07	0.82	0.06	0.06
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2601		122	2909	115	102
v/s Ratio Prot	c0.43		0.02	c0.42	c0.01	
v/s Ratio Perm						0.00
v/c Ratio	0.58		0.33	0.51	0.21	0.02
Uniform Delay, d1	7.2		52.8	3.2	52.8	52.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4		0.6	0.6	0.7	0.1
Delay (s)	7.7		53.3	3.9	53.4	52.2
Level of Service	A		D	A	D	D
Approach Delay (s)	7.7			5.2	52.7	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	119.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	360	771	279	268	768	65	336	950	36	204	997	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3492		3433	3539	1551	3433	3539	1551
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3492		3433	3539	1551	3433	3539	1551
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	400	857	310	298	853	72	373	1056	40	227	1108	254
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	19	0	0	116
Lane Group Flow (vph)	400	857	310	298	920	0	373	1056	21	227	1108	138
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	17.5	31.2	120.0	18.1	32.2		15.2	33.3	33.3	18.0	36.5	36.5
Effective Green, g (s)	18.5	32.7	120.0	19.1	33.7		16.2	34.8	34.3	19.0	38.0	37.5
Actuated g/C Ratio	0.15	0.27	1.00	0.16	0.28		0.13	0.29	0.29	0.16	0.32	0.31
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	529	964	1561	546	981		463	1026	443	544	1121	485
v/s Ratio Prot	0.12	c0.24		0.09	c0.26		0.11	c0.30		0.07	c0.31	
v/s Ratio Perm			0.20						0.01			0.09
v/c Ratio	0.76	0.89	0.20	0.55	0.94		0.81	1.03	0.05	0.42	0.99	0.28
Uniform Delay, d1	48.6	41.9	0.0	46.5	42.1		50.4	42.6	31.0	45.5	40.8	31.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.14	1.25	1.90	1.00	1.00	1.00
Incremental Delay, d2	5.4	10.3	0.3	0.6	15.9		7.6	32.9	0.2	0.2	23.9	0.4
Delay (s)	54.0	52.2	0.3	47.1	58.0		65.1	86.3	59.1	45.7	64.6	31.6
Level of Service	D	D	A	D	E		E	F	E	D	E	C
Approach Delay (s)		42.4			55.4			80.2			56.7	
Approach LOS		D			E			F			E	

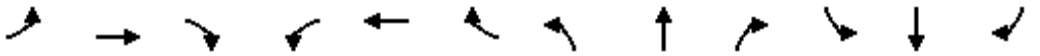
Intersection Summary			
HCM Average Control Delay	58.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	1042	10	47	1102	15	18	8	41	30	16	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3533		1770	3530			1801	1547		1804	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (perm)	1770	3533		1770	3530			1801	1547		1804	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	1158	11	52	1224	17	20	9	46	33	18	53
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	43	0	0	50
Lane Group Flow (vph)	57	1169	0	52	1240	0	0	29	3	0	51	3
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	7.2	82.0		6.9	81.7			7.0	7.0		6.8	6.8
Effective Green, g (s)	8.2	84.0		7.9	83.7			8.0	8.0		7.8	7.8
Actuated g/C Ratio	0.07	0.70		0.07	0.70			0.07	0.07		0.06	0.06
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	121	2473		117	2462			120	103		117	103
v/s Ratio Prot	c0.03	0.33		0.03	c0.35			c0.02			c0.03	
v/s Ratio Perm									0.00			0.00
v/c Ratio	0.47	0.47		0.44	0.50			0.24	0.03		0.44	0.03
Uniform Delay, d1	53.8	8.1		53.9	8.5			53.1	52.4		54.0	52.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	0.7		1.0	0.3			0.4	0.0		0.9	0.0
Delay (s)	54.9	8.7		54.9	8.8			53.5	52.4		54.9	52.6
Level of Service	D	A		D	A			D	D		D	D
Approach Delay (s)		10.9			10.6			52.8			53.8	
Approach LOS		B			B			D			D	

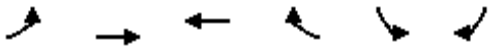
Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



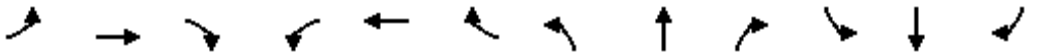
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	971	0	7	1148	14	10	0	5	19	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.8		2.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3533			1718			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.84			0.75	1.00
Satd. Flow (perm)	1770	3539		1770	3533			1492			1390	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	1079	0	8	1276	16	11	0	6	21	0	23
RTOR Reduction (vph)	0	0	0	0	0	0	0	6	0	0	0	21
Lane Group Flow (vph)	26	1079	0	8	1292	0	0	11	0	0	21	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	4.3	98.3		1.2	95.2			8.2			8.2	8.2
Effective Green, g (s)	5.3	100.8		2.2	97.7			9.2			9.2	9.2
Actuated g/C Ratio	0.04	0.84		0.02	0.81			0.08			0.08	0.08
Clearance Time (s)	3.0	5.3		3.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	78	2973		32	2876			114			107	121
v/s Ratio Prot	c0.01	0.30		0.00	c0.37							
v/s Ratio Perm								0.01			c0.02	0.00
v/c Ratio	0.33	0.36		0.25	0.45			0.10			0.20	0.01
Uniform Delay, d1	55.6	2.2		58.1	3.3			51.5			51.9	51.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.9	0.3		1.5	0.5			0.3			0.7	0.0
Delay (s)	56.6	2.6		59.6	3.8			51.8			52.6	51.2
Level of Service	E	A		E	A			D			D	D
Approach Delay (s)		3.8			4.1			51.8			51.9	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	5.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.8
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	416	481	518	164	478	724
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	0.99	1.00		0.95	1.00
Satd. Flow (prot)	1610	3356	3412		3433	1583
Flt Permitted	0.95	0.99	1.00		0.95	1.00
Satd. Flow (perm)	1610	3356	3412		3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	462	534	576	182	531	804
RTOR Reduction (vph)	0	0	28	0	0	26
Lane Group Flow (vph)	323	673	730	0	531	778
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	47.0	47.0	26.7		21.0	68.0
Effective Green, g (s)	49.5	49.5	29.2		22.0	73.0
Actuated g/C Ratio	0.46	0.46	0.27		0.20	0.68
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	738	1538	923		699	1111
v/s Ratio Prot	0.20	0.20	c0.21		0.15	c0.32
v/s Ratio Perm						0.17
v/c Ratio	0.44	0.44	0.79		0.76	0.70
Uniform Delay, d1	19.8	19.8	36.6		40.5	10.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.9	0.9	4.4		4.2	1.6
Delay (s)	21.7	20.7	40.9		44.7	12.4
Level of Service	C	C	D		D	B
Approach Delay (s)		21.0	40.9		25.3	
Approach LOS		C	D		C	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	4.3
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	747	56	34	665	12	49	9	9	21	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3	4.3	3.0	3.3			3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00			0.98			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	3530			1553			1809	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.77			0.87	
Satd. Flow (perm)	1770	1863	1583	1770	3530			1239			1618	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	68	830	62	38	739	13	54	10	10	23	16	0
RTOR Reduction (vph)	0	0	9	0	1	0	0	6	0	0	0	0
Lane Group Flow (vph)	68	830	53	38	751	0	0	68	0	0	39	0
Parking (#/hr)								4				
Turn Type	Prot		Perm	Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases			2				4			4		4
Actuated Green, G (s)	4.4	42.0	42.0	3.6	41.2			8.0			8.0	
Effective Green, g (s)	5.4	44.0	43.0	4.6	43.2			9.0			9.0	
Actuated g/C Ratio	0.08	0.66	0.64	0.07	0.65			0.13			0.13	
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3			4.0			4.0	
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3			2.0			2.0	
Lane Grp Cap (vph)	143	1225	1017	122	2279			167			218	
v/s Ratio Prot	c0.04	c0.45		0.02	0.21							
v/s Ratio Perm			0.03					c0.05			0.02	
v/c Ratio	0.48	0.68	0.05	0.31	0.33			0.41			0.18	
Uniform Delay, d1	29.4	7.1	4.4	29.6	5.3			26.5			25.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	1.7	0.0	0.5	0.1			0.6			0.1	
Delay (s)	30.3	8.8	4.5	30.2	5.5			27.1			25.8	
Level of Service	C	A	A	C	A			C			C	
Approach Delay (s)		10.0			6.7			27.1			25.8	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	66.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

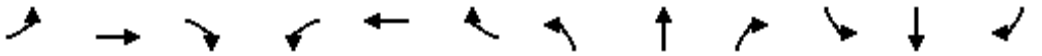
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	287	380	312	233	347	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	3.0	2.8	2.5	3.0	2.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	319	422	347	259	386	520
RTOR Reduction (vph)	0	113	0	86	0	0
Lane Group Flow (vph)	319	309	347	173	386	520
Turn Type		pm+ov		pm+ov	Prot	
Protected Phases	8	5	6	8	5	2
Permitted Phases		8		6		
Actuated Green, G (s)	19.1	40.6	21.5	40.6	21.5	47.0
Effective Green, g (s)	20.6	42.6	24.0	43.6	22.5	49.5
Actuated g/C Ratio	0.27	0.56	0.32	0.58	0.30	0.66
Clearance Time (s)	4.0	4.0	5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0	2.0	4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	484	957	593	915	528	1223
v/s Ratio Prot	c0.18	0.10	c0.19	0.05	c0.22	0.28
v/s Ratio Perm		0.10		0.06		
v/c Ratio	0.66	0.32	0.59	0.19	0.73	0.43
Uniform Delay, d1	24.3	8.7	21.5	7.5	23.7	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.1	1.9	0.0	4.5	0.4
Delay (s)	26.8	8.8	23.4	7.6	28.2	6.5
Level of Service	C	A	C	A	C	A
Approach Delay (s)	16.5		16.7			15.8
Approach LOS	B		B			B

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	75.4	Sum of lost time (s)	8.3
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

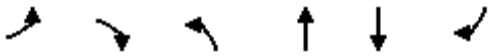
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	497	25	34	771	41	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	552	28	38	857	46	7
RTOR Reduction (vph)	0	11	0	0	0	6
Lane Group Flow (vph)	552	17	38	857	46	1
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	23.8	23.8	0.9	30.4	5.9	5.9
Effective Green, g (s)	27.2	27.2	1.9	33.8	6.9	6.9
Actuated g/C Ratio	0.59	0.59	0.04	0.73	0.15	0.15
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2093	936	73	2600	266	237
v/s Ratio Prot	0.16		c0.02	c0.24	c0.03	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.26	0.02	0.52	0.33	0.17	0.00
Uniform Delay, d1	4.6	3.9	21.6	2.1	17.1	16.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	3.1	0.1	0.1	0.0
Delay (s)	4.7	3.9	24.7	2.3	17.2	16.6
Level of Service	A	A	C	A	B	B
Approach Delay (s)	4.6			3.2	17.1	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	4.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	7.7
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



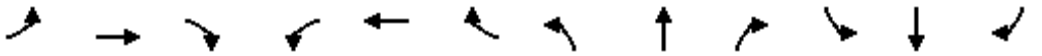
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	328	0	0	296	3	0	0	0	2	0	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0			5.0	5.0				3.0		3.0
Lane Util. Factor	1.00	0.95			0.95	1.00				1.00		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1593	3185			3185	1425				1593		1425
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1593	3185			3185	1425				1593		1425
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	47	364	0	0	329	3	0	0	0	2	0	36
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	0	0	0	29
Lane Group Flow (vph)	47	364	0	0	329	2	0	0	0	2	0	7
Turn Type	Prot		Perm	Perm		Perm	Perm			Prot		Perm
Protected Phases	5	2			6			8		7	4	
Permitted Phases			2	6		6	8					4
Actuated Green, G (s)	3.9	36.3			28.4	28.4				0.9		10.5
Effective Green, g (s)	4.9	37.3			29.4	29.4				1.9		11.5
Actuated g/C Ratio	0.09	0.66			0.52	0.52				0.03		0.20
Clearance Time (s)	4.0	6.0			6.0	6.0				4.0		4.0
Vehicle Extension (s)	2.0	4.7			4.7	4.7				2.0		2.0
Lane Grp Cap (vph)	137	2092			1649	738				53		289
v/s Ratio Prot	c0.03	0.11			c0.10					c0.00		
v/s Ratio Perm						0.00						c0.01
v/c Ratio	0.34	0.17			0.20	0.00				0.04		0.03
Uniform Delay, d1	24.4	3.8			7.4	6.6				26.6		18.2
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	0.5	0.1			0.1	0.0				0.1		0.0
Delay (s)	25.0	3.9			7.5	6.6				26.7		18.2
Level of Service	C	A			A	A				C		B
Approach Delay (s)		6.3			7.5			0.0			18.6	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



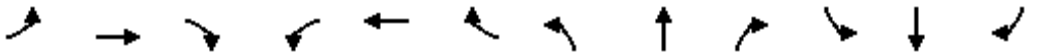
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	76	69	136	564	545	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	77	151	627	606	111
RTOR Reduction (vph)	0	64	0	0	0	55
Lane Group Flow (vph)	84	13	151	627	606	56
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.3	8.3	7.6	35.1	23.5	23.5
Effective Green, g (s)	9.3	9.3	8.6	38.5	26.9	26.9
Actuated g/C Ratio	0.17	0.17	0.16	0.72	0.50	0.50
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	308	276	285	2552	1783	797
v/s Ratio Prot	c0.05		c0.09	0.18	c0.17	
v/s Ratio Perm		0.01				0.04
v/c Ratio	0.27	0.05	0.53	0.25	0.34	0.07
Uniform Delay, d1	19.1	18.4	20.5	2.5	7.9	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.8	0.1	0.2	0.1
Delay (s)	19.3	18.4	21.4	2.6	8.2	6.9
Level of Service	B	B	C	A	A	A
Approach Delay (s)	18.9			6.3	8.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	8.6
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



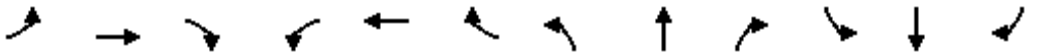
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	12	86	56	0	20	116	327	41	5	514	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9		3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583		1770	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583		1770	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	64	13	96	62	0	22	129	363	46	6	571	77
RTOR Reduction (vph)	0	0	84	0	0	20	0	0	21	0	0	44
Lane Group Flow (vph)	64	13	12	0	62	2	129	363	25	6	571	33
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	8.5	8.5	8.5		6.6	6.6	10.6	37.2	37.2	1.1	27.7	27.7
Effective Green, g (s)	10.1	10.1	9.5		8.2	8.2	11.6	40.6	40.6	2.1	31.1	31.1
Actuated g/C Ratio	0.14	0.14	0.13		0.11	0.11	0.16	0.55	0.55	0.03	0.42	0.42
Clearance Time (s)	4.9	4.9	4.9		5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1		2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	243	256	204		197	176	279	1952	873	51	1495	669
v/s Ratio Prot	c0.04	0.01			c0.04		c0.07	0.10		0.00	c0.16	
v/s Ratio Perm			0.01			0.00			0.02			0.02
v/c Ratio	0.26	0.05	0.06		0.31	0.01	0.46	0.19	0.03	0.12	0.38	0.05
Uniform Delay, d1	28.4	27.6	28.1		30.1	29.1	28.2	8.2	7.5	34.8	14.6	12.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	0.1		0.3	0.0	0.4	0.1	0.0	0.4	0.3	0.1
Delay (s)	29.0	27.7	28.3		30.4	29.1	28.6	8.3	7.5	35.2	15.0	12.6
Level of Service	C	C	C		C	C	C	A	A	D	B	B
Approach Delay (s)		28.5			30.1			13.1			14.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	73.6	Sum of lost time (s)	12.6
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



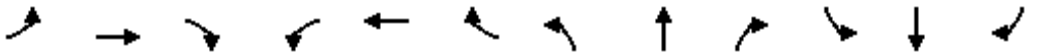
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	2	35	9	3	15	39	333	11	28	406	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4	3.4	3.0	3.4	3.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1776	1583		1794	1583	1770	1863	1583	1770	1863	1583
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1776	1583		1794	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	70	2	39	10	3	17	43	370	12	31	451	78
RTOR Reduction (vph)	0	0	32	0	0	16	0	0	4	0	0	17
Lane Group Flow (vph)	0	72	7	0	13	1	43	370	8	31	451	61
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)		9.9	9.9		2.5	2.5	3.8	30.1	30.1	2.1	28.4	28.4
Effective Green, g (s)		10.9	10.9		3.5	3.5	4.8	32.4	32.4	3.1	30.7	30.7
Actuated g/C Ratio		0.17	0.17		0.06	0.06	0.08	0.52	0.52	0.05	0.49	0.49
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8	3.8	2.0	3.8	3.8
Lane Grp Cap (vph)		311	277		101	89	136	969	823	88	918	780
v/s Ratio Prot		c0.04			c0.01		c0.02	0.20		0.02	c0.24	
v/s Ratio Perm			0.00			0.00			0.01			0.04
v/c Ratio		0.23	0.02		0.13	0.01	0.32	0.38	0.01	0.35	0.49	0.08
Uniform Delay, d1		22.1	21.3		28.0	27.8	27.2	9.0	7.2	28.6	10.6	8.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.0		0.2	0.0	0.5	0.3	0.0	0.9	0.5	0.1
Delay (s)		22.2	21.3		28.2	27.8	27.7	9.3	7.2	29.5	11.1	8.4
Level of Service		C	C		C	C	C	A	A	C	B	A
Approach Delay (s)		21.9			27.9			11.1			11.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	12.4
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



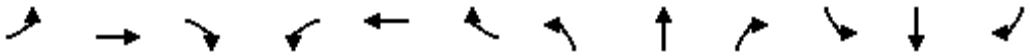
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	16	37	15	2	12	67	432	28	10	402	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.95		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1583		1715		1770	1846		1770	1844	
Flt Permitted		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1797	1583		1715		1770	1846		1770	1844	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	48	18	41	17	2	13	74	480	31	11	447	33
RTOR Reduction (vph)	0	0	35	0	13	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	66	6	0	19	0	74	510	0	11	478	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		9.2	9.2		2.6		6.4	37.6		0.7	31.9	
Effective Green, g (s)		9.2	9.2		2.6		6.4	37.6		0.7	31.9	
Actuated g/C Ratio		0.14	0.14		0.04		0.09	0.55		0.01	0.47	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		244	215		66		167	1024		18	868	
v/s Ratio Prot		c0.04			c0.01		c0.04	0.28		0.01	c0.26	
v/s Ratio Perm			0.00									
v/c Ratio		0.27	0.03		0.30		0.44	0.50		0.61	0.55	
Uniform Delay, d1		26.3	25.4		31.7		29.0	9.3		33.4	12.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.9		0.7	0.5		36.2	0.8	
Delay (s)		26.5	25.4		32.6		29.7	9.7		69.6	13.7	
Level of Service		C	C		C		C	A		E	B	
Approach Delay (s)		26.1			32.6			12.3			14.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	17.7
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	5	81	11	9	13	103	566	24	20	453	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1787	1583		1813	1583	1770	1851		1770	1852	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1787	1583		1813	1583	1770	1851		1770	1852	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	6	90	12	10	14	114	629	27	22	503	21
RTOR Reduction (vph)	0	0	80	0	0	13	0	1	0	0	1	0
Lane Group Flow (vph)	0	38	10	0	22	1	114	655	0	22	523	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		7.1	7.1		5.2	5.2	7.3	39.6		2.2	34.5	
Effective Green, g (s)		8.1	8.1		6.2	6.2	8.3	42.3		3.2	37.2	
Actuated g/C Ratio		0.11	0.11		0.09	0.09	0.12	0.59		0.04	0.52	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		202	179		157	137	205	1090		79	960	
v/s Ratio Prot		c0.02			c0.01		c0.06	c0.35		0.01	0.28	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.19	0.06		0.14	0.01	0.56	0.60		0.28	0.54	
Uniform Delay, d1		28.9	28.4		30.3	30.0	30.0	9.4		33.2	11.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.1		0.4	0.0	1.9	1.0		0.7	0.8	
Delay (s)		29.3	28.6		30.7	30.0	31.9	10.4		33.9	12.4	
Level of Service		C	C		C	C	C	B		C	B	
Approach Delay (s)		28.8			30.5			13.6			13.2	
Approach LOS		C			C			B			B	

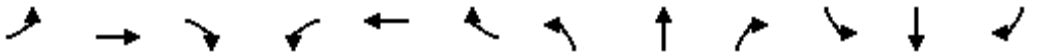
Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	71.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	6	11	37	10	86	25	558	18	92	588	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.97	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1542	1770	1863	1583	1770	3517		1770	3456	
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1797	1542	1770	1863	1583	1770	3517		1770	3456	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	7	12	41	11	96	28	620	20	102	653	90
RTOR Reduction (vph)	0	0	11	0	0	85	0	2	0	0	7	0
Lane Group Flow (vph)	0	26	1	41	11	11	28	638	0	102	736	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		6.6	6.6	6.3	6.3	6.3	2.1	25.1		6.4	29.4	
Effective Green, g (s)		7.6	7.6	7.3	7.3	7.3	4.1	27.1		8.4	31.4	
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.12	0.06	0.43		0.13	0.50	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		215	185	204	215	182	114	1503		235	1712	
v/s Ratio Prot		c0.01		c0.02	0.01		0.02	0.18		c0.06	c0.21	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.12	0.01	0.20	0.05	0.06	0.25	0.42		0.43	0.43	
Uniform Delay, d1		24.9	24.6	25.4	25.0	25.0	28.2	12.7		25.3	10.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0	0.4	0.1	0.1	0.4	0.3		0.5	0.2	
Delay (s)		25.1	24.6	25.8	25.0	25.1	28.6	12.9		25.8	10.5	
Level of Service		C	C	C	C	C	C	B		C	B	
Approach Delay (s)		24.9			25.3			13.6			12.3	
Approach LOS		C			C			B			B	

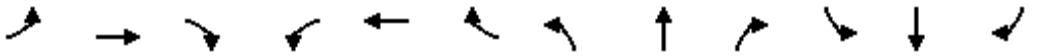
Intersection Summary				
HCM Average Control Delay	14.2	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.34			
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	9.3	
Intersection Capacity Utilization	51.0%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



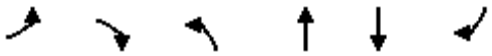
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	0	44	9	0	25	53	524	35	30	528	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3506		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3506		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	76	0	49	10	0	28	59	582	39	33	587	2
RTOR Reduction (vph)	0	0	40	0	0	26	0	3	0	0	0	1
Lane Group Flow (vph)	76	0	9	10	0	2	59	618	0	33	587	1
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	10.7		10.7	2.4		2.4	4.1	28.8		2.0	26.7	26.7
Effective Green, g (s)	10.7		10.7	3.4		3.4	4.1	29.8		3.0	27.7	26.7
Actuated g/C Ratio	0.17		0.17	0.06		0.06	0.07	0.48		0.05	0.45	0.43
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	307		275	98		87	118	1696		86	1591	686
v/s Ratio Prot	c0.04			c0.01			c0.03	c0.18		0.02	0.17	
v/s Ratio Perm			0.01			0.00						0.00
v/c Ratio	0.25		0.03	0.10		0.02	0.50	0.36		0.38	0.37	0.00
Uniform Delay, d1	22.0		21.1	27.6		27.5	27.8	10.0		28.4	11.2	9.9
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2		0.0	0.2		0.0	1.2	0.2		1.0	0.3	0.0
Delay (s)	22.1		21.2	27.8		27.6	29.0	10.2		29.4	11.4	9.9
Level of Service	C		C	C		C	C	B		C	B	A
Approach Delay (s)		21.7			27.6			11.8			12.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	11.0
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



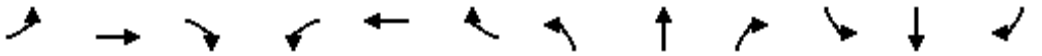
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	55	154	69	0	10	11	709	23	8	504	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1752	1583		1770	1583	1770	5085	1583	1770	3539	1583
Flt Permitted	0.95	0.99	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1752	1583		1770	1583	1770	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	88	61	171	77	0	11	12	788	26	9	560	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	3
Lane Group Flow (vph)	73	76	171	0	77	11	12	788	26	9	560	3
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	8.5	8.5	56.0		5.2	56.0	0.8	23.5	56.0	0.8	23.5	23.5
Effective Green, g (s)	9.5	9.5	56.0		6.2	56.0	1.8	26.9	56.0	1.8	26.9	26.9
Actuated g/C Ratio	0.17	0.17	1.00		0.11	1.00	0.03	0.48	1.00	0.03	0.48	0.48
Clearance Time (s)	4.0	4.0			4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5			3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	285	297	1583		196	1583	57	2443	1583	57	1700	760
v/s Ratio Prot	c0.04	0.04			c0.04		0.01	0.15		0.01	c0.16	
v/s Ratio Perm			c0.11			0.01			0.02			0.00
v/c Ratio	0.26	0.26	0.11		0.39	0.01	0.21	0.32	0.02	0.16	0.33	0.00
Uniform Delay, d1	20.2	20.2	0.0		23.2	0.0	26.4	8.9	0.0	26.4	9.0	7.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.1		1.3	0.0	0.7	0.1	0.0	1.3	0.2	0.0
Delay (s)	20.5	20.5	0.1		24.5	0.0	27.1	9.1	0.0	27.7	9.2	7.6
Level of Service	C	C	A		C	A	C	A	A	C	A	A
Approach Delay (s)		9.6			21.4			9.1			9.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



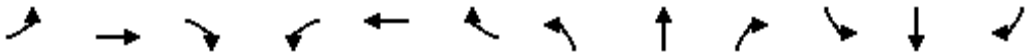
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)						
Effective Green, g (s)						
Actuated g/C Ratio						
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)						
v/s Ratio Prot						
v/s Ratio Perm						
v/c Ratio						
Uniform Delay, d1						
Progression Factor						
Incremental Delay, d2						
Delay (s)						
Level of Service						
Approach Delay (s)	0.0			0.0	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	0.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	24.5	Sum of lost time (s)	0.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	0	27	35	0	0	18	436	18	7	1003	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0		3.0	2.6	2.6	2.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.91	
Frt		1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00	0.95	0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	1583	1681	1681		1770	3539	1583	1770	5079	
Flt Permitted		0.95	1.00	0.95	0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1770	1583	1681	1681		1770	3539	1583	1770	5079	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	21	0	30	39	0	0	20	484	20	8	1114	9
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	8	0	0	0
Lane Group Flow (vph)	0	21	3	19	20	0	20	484	12	8	1123	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			
Actuated Green, G (s)		4.9	4.9	5.8	5.8		0.9	31.6	31.6	0.7	30.4	
Effective Green, g (s)		5.9	5.9	6.8	6.8		1.9	35.0	35.0	1.7	33.8	
Actuated g/C Ratio		0.10	0.10	0.11	0.11		0.03	0.58	0.58	0.03	0.56	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	6.0	6.0	3.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2		2.0	3.9	3.9	2.0	3.9	
Lane Grp Cap (vph)		174	156	191	191		56	2064	923	50	2861	
v/s Ratio Prot		c0.01		0.01	c0.01		c0.01	0.14		0.00	c0.22	
v/s Ratio Perm			0.00						0.01			
v/c Ratio		0.12	0.02	0.10	0.10		0.36	0.23	0.01	0.16	0.39	
Uniform Delay, d1		24.7	24.4	23.9	23.9		28.5	6.0	5.2	28.5	7.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.0	0.1	0.1		1.4	0.1	0.0	0.5	0.1	
Delay (s)		24.8	24.5	23.9	24.0		29.9	6.1	5.3	29.0	7.5	
Level of Service		C	C	C	C		C	A	A	C	A	
Approach Delay (s)		24.6			23.9			7.0			7.6	
Approach LOS		C			C			A			A	

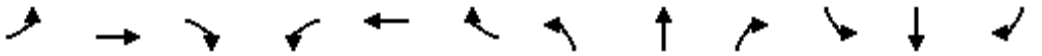
Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	8	107	63	6	22	93	1141	25	35	1451	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.96		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780	1526		1782	1583	1770	5063		1770	5058	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1780	1526		1782	1583	1770	5063		1770	5058	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	9	119	70	7	24	103	1268	28	39	1612	43
RTOR Reduction (vph)	0	0	104	0	0	22	0	1	0	0	2	0
Lane Group Flow (vph)	0	131	15	0	77	2	103	1295	0	39	1653	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		12.8	12.8		8.4	8.4	11.3	74.4		5.1	69.2	
Effective Green, g (s)		15.1	15.1		10.7	10.7	12.3	77.4		6.1	72.2	
Actuated g/C Ratio		0.13	0.13		0.09	0.09	0.10	0.65		0.05	0.60	
Clearance Time (s)		5.3	5.3		4.0	4.0	3.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		224	192		159	141	181	3266		90	3043	
v/s Ratio Prot		c0.07			c0.04		c0.06	0.26		0.02	c0.33	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.58	0.08		0.48	0.02	0.57	0.40		0.43	0.54	
Uniform Delay, d1		49.5	46.3		52.0	49.8	51.3	10.2		55.3	14.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.5	0.1		0.8	0.0	2.4	0.2		1.2	0.7	
Delay (s)		52.0	46.4		52.9	49.9	53.8	10.3		56.5	14.8	
Level of Service		D	D		D	D	D	B		E	B	
Approach Delay (s)		49.3			52.2			13.5			15.8	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

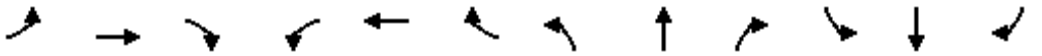
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	196	86	195	368	198	152	1031	156	213	1125	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1532	1770	3539	1534	1770	5085	1560	1770	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1532	1770	3539	1534	1770	5085	1560	1770	5085	1560
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	183	218	96	217	409	220	169	1146	173	237	1250	184
RTOR Reduction (vph)	0	0	80	0	0	181	0	0	0	0	0	0
Lane Group Flow (vph)	183	218	16	217	409	39	169	1146	173	237	1250	184
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	16.5	16.5	16.5	18.4	18.4	18.4	15.8	45.9	120.0	19.8	49.6	120.0
Effective Green, g (s)	17.5	19.5	19.5	19.4	21.4	21.4	16.8	48.9	120.0	20.8	52.6	120.0
Actuated g/C Ratio	0.15	0.16	0.16	0.16	0.18	0.18	0.14	0.41	1.00	0.17	0.44	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	258	575	249	286	631	274	248	2072	1560	307	2229	1560
v/s Ratio Prot	0.10	0.06		c0.12	c0.12		0.10	0.23		c0.13	c0.25	
v/s Ratio Perm			0.01			0.03			0.11			c0.12
v/c Ratio	0.71	0.38	0.06	0.76	0.65	0.14	0.68	0.55	0.11	0.77	0.56	0.12
Uniform Delay, d1	48.8	44.8	42.5	48.1	45.8	41.6	49.1	27.2	0.0	47.3	25.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	0.5	0.1	9.8	2.4	0.3	6.0	1.1	0.1	10.4	1.0	0.2
Delay (s)	55.9	45.4	42.6	57.9	48.2	41.9	55.1	28.3	0.1	57.8	26.1	0.2
Level of Service	E	D	D	E	D	D	E	C	A	E	C	A
Approach Delay (s)		48.7			49.0			28.0			27.8	
Approach LOS		D			D			C			C	

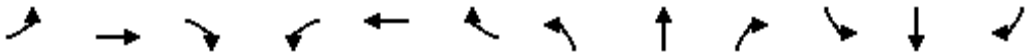
Intersection Summary			
HCM Average Control Delay	34.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1	26	26	1	15	47	1385	0	16	1386	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0		2.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.91	
Frt		0.93			0.95		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1696			1719		1770	3539		1770	5079	
Flt Permitted		0.84			0.87		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1458			1536		1770	3539		1770	5079	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	1	29	29	1	17	52	1539	0	18	1540	12
RTOR Reduction (vph)	0	26	0	0	15	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	32	0	0	32	0	52	1539	0	18	1551	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		6.3			6.3		4.1	40.5		1.0	36.4	
Effective Green, g (s)		7.3			7.3		5.1	43.2		2.0	39.1	
Actuated g/C Ratio		0.12			0.12		0.08	0.71		0.03	0.65	
Clearance Time (s)		4.0			4.0		4.0	5.7		3.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		176			185		149	2527		59	3282	
v/s Ratio Prot							c0.03	c0.43		0.01	0.31	
v/s Ratio Perm		c0.02			0.02							
v/c Ratio		0.18			0.17		0.35	0.61		0.31	0.47	
Uniform Delay, d1		23.9			23.9		26.1	4.4		28.6	5.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			0.4		0.5	0.5		1.1	0.1	
Delay (s)		24.4			24.3		26.7	4.8		29.6	5.6	
Level of Service		C			C		C	A		C	A	
Approach Delay (s)		24.4			24.3			5.6			5.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	37	68	154	79	105	139	1589	71	61	1365	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	1863	1562	1770	5085	1562	1770	5075	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	1863	1562	1770	5085	1562	1770	5075	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	94	41	76	171	88	117	154	1766	79	68	1517	19
RTOR Reduction (vph)	0	0	67	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	94	41	9	171	88	117	154	1766	79	68	1535	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	10.7	10.6	10.6	12.8	12.7	120.0	13.7	69.0	120.0	7.9	63.2	
Effective Green, g (s)	11.7	13.6	13.6	13.8	15.7	120.0	14.7	72.0	120.0	8.9	66.2	
Actuated g/C Ratio	0.10	0.11	0.11	0.12	0.13	1.00	0.12	0.60	1.00	0.07	0.55	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	173	401	175	395	244	1562	217	3051	1562	131	2800	
v/s Ratio Prot	c0.05	0.01		0.05	c0.05		c0.09	c0.35		0.04	0.30	
v/s Ratio Perm			0.01			c0.07			0.05			
v/c Ratio	0.54	0.10	0.05	0.43	0.36	0.07	0.71	0.58	0.05	0.52	0.55	
Uniform Delay, d1	51.6	47.7	47.4	49.5	47.6	0.0	50.6	14.7	0.0	53.5	17.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	0.1	0.2	0.3	1.2	0.1	8.4	0.8	0.1	1.4	0.2	
Delay (s)	53.5	47.9	47.6	49.7	48.7	0.1	59.0	15.5	0.1	54.9	17.5	
Level of Service	D	D	D	D	D	A	E	B	A	D	B	
Approach Delay (s)		50.3			34.1			18.3			19.1	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

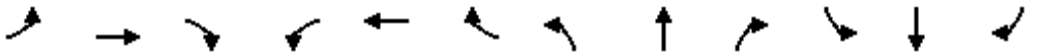
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	203	133	1709	230	98	1429
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	2.0	2.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	226	148	1899	256	109	1588
RTOR Reduction (vph)	0	0	0	23	0	0
Lane Group Flow (vph)	226	148	1899	233	109	1588
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	18.6	104.8	60.4	60.4	10.8	76.2
Effective Green, g (s)	19.6	104.8	62.4	62.4	11.8	78.2
Actuated g/C Ratio	0.19	1.00	0.60	0.60	0.11	0.75
Clearance Time (s)	6.0		6.0	6.0	3.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	331	1583	2107	943	199	2641
v/s Ratio Prot	c0.13		c0.54		0.06	c0.45
v/s Ratio Perm		0.09		0.15		
v/c Ratio	0.68	0.09	0.90	0.25	0.55	0.60
Uniform Delay, d1	39.7	0.0	18.5	10.1	44.0	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	0.1	5.9	0.2	1.7	0.4
Delay (s)	45.4	0.1	24.4	10.2	45.6	6.5
Level of Service	D	A	C	B	D	A
Approach Delay (s)	27.5		22.7			9.0
Approach LOS	C		C			A

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	104.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	60	22	400	68	27	469
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	24	444	76	30	521
RTOR Reduction (vph)	0	20	0	28	0	0
Lane Group Flow (vph)	67	4	444	48	30	521
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.8	6.8	27.5	27.5	1.0	31.5
Effective Green, g (s)	8.3	8.3	30.5	30.5	2.0	34.5
Actuated g/C Ratio	0.17	0.17	0.63	0.63	0.04	0.71
Clearance Time (s)	4.0	4.0	6.0	6.0	3.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	304	272	2235	1000	73	1331
v/s Ratio Prot	c0.04		0.13		c0.02	c0.28
v/s Ratio Perm		0.00		0.03		
v/c Ratio	0.22	0.02	0.20	0.05	0.41	0.39
Uniform Delay, d1	17.2	16.6	3.8	3.4	22.6	2.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	0.1	0.0	1.4	0.4
Delay (s)	17.6	16.6	3.8	3.4	23.9	3.1
Level of Service	B	B	A	A	C	A
Approach Delay (s)	17.3		3.8			4.2
Approach LOS	B		A			A

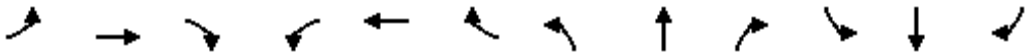
Intersection Summary			
HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	4.5
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	3	9	78	0	141	11	808	75	139	750	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	2.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.93			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1703			1770	1557	1770	3487		1770	1863	1537
Flt Permitted		0.93			0.75	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1611			1388	1557	1770	3487		1770	1863	1537
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	3	10	87	0	157	12	898	83	154	833	32
RTOR Reduction (vph)	0	8	0	0	0	127	0	7	0	0	0	6
Lane Group Flow (vph)	0	11	0	0	87	30	12	974	0	154	833	26
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		Perm
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						6
Actuated Green, G (s)		11.3			11.3	11.3	0.9	28.3		10.9	38.3	38.3
Effective Green, g (s)		12.3			12.3	12.3	1.9	31.3		11.9	41.3	41.3
Actuated g/C Ratio		0.19			0.19	0.19	0.03	0.49		0.19	0.64	0.64
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)		309			266	298	52	1700		328	1198	989
v/s Ratio Prot							0.01	0.28		c0.09	c0.45	
v/s Ratio Perm		0.01			c0.06	0.02						0.02
v/c Ratio		0.04			0.33	0.10	0.23	0.57		0.47	0.70	0.03
Uniform Delay, d1		21.1			22.4	21.4	30.4	11.7		23.3	7.4	4.2
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.0			0.3	0.1	0.8	0.7		0.4	2.1	0.0
Delay (s)		21.1			22.6	21.4	31.3	12.4		23.7	9.4	4.2
Level of Service		C			C	C	C	B		C	A	A
Approach Delay (s)		21.1			21.9			12.6			11.4	
Approach LOS		C			C			B			B	

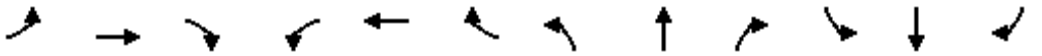
Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	8.7
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	0	37	50	5	35	54	843	23	14	761	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	1531		1782	1491	1770	3539	1544	1770	3514	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1770	1531		1782	1491	1770	3539	1544	1770	3514	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	0	41	56	6	39	60	937	26	16	846	36
RTOR Reduction (vph)	0	0	37	0	0	36	0	0	6	0	2	0
Lane Group Flow (vph)	0	57	4	0	62	3	60	937	20	16	880	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		7.6	7.6		6.6	6.6	6.6	55.6	55.6	2.5	51.5	
Effective Green, g (s)		8.6	8.6		7.6	7.6	7.6	58.6	56.6	3.5	54.5	
Actuated g/C Ratio		0.10	0.10		0.08	0.08	0.08	0.65	0.63	0.04	0.61	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		169	146		150	126	149	2304	971	69	2128	
v/s Ratio Prot		c0.03			c0.03		c0.03	c0.26		0.01	0.25	
v/s Ratio Perm			0.00			0.00			0.01			
v/c Ratio		0.34	0.03		0.41	0.03	0.40	0.41	0.02	0.23	0.41	
Uniform Delay, d1		38.0	36.9		39.1	37.8	39.0	7.5	6.3	41.9	9.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4	0.0		0.7	0.0	0.6	0.3	0.0	0.6	0.6	
Delay (s)		38.5	36.9		39.8	37.8	39.7	7.7	6.3	42.6	9.9	
Level of Service		D	D		D	D	D	A	A	D	A	
Approach Delay (s)		37.8			39.0			9.6			10.5	
Approach LOS		D			D			A			B	

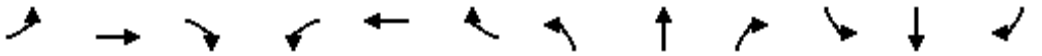
Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	258	0	242	5	4	3	508	655	0	8	579	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1743		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1743		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	287	0	269	6	4	3	564	728	0	9	643	267
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	150
Lane Group Flow (vph)	143	144	269	6	4	0	564	728	0	9	643	117
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	13.0	13.0	90.0	4.2	4.2		19.7	53.7		1.4	37.4	37.4
Effective Green, g (s)	15.0	15.0	90.0	6.2	6.2		21.7	55.7		3.4	39.4	39.4
Actuated g/C Ratio	0.17	0.17	1.00	0.07	0.07		0.24	0.62		0.04	0.44	0.44
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	280	280	1478	122	120		828	2190		67	1549	647
v/s Ratio Prot	0.09	c0.09		0.00	0.00		c0.16	0.21		0.01	c0.18	
v/s Ratio Perm			c0.18									0.08
v/c Ratio	0.51	0.51	0.18	0.05	0.04		0.68	0.33		0.13	0.42	0.18
Uniform Delay, d1	34.2	34.2	0.0	39.1	39.1		31.0	8.2		41.9	17.4	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.6	1.6	0.3	0.2	0.1		2.3	0.4		0.9	0.2	0.1
Delay (s)	35.7	35.8	0.3	39.3	39.2		33.3	8.6		42.8	17.6	15.6
Level of Service	D	D	A	D	D		C	A		D	B	B
Approach Delay (s)		18.6			39.3			19.4			17.2	
Approach LOS		B			D			B			B	

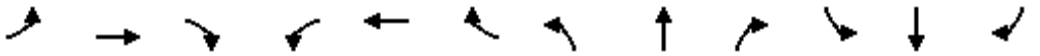
Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



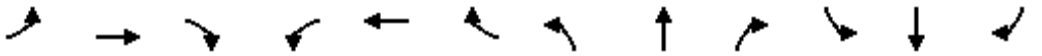
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	0	34	27	0	22	40	634	30	51	732	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583	1770	1583		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1583	1770	1583		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	70	0	38	30	0	24	44	704	33	57	813	24
RTOR Reduction (vph)	0	0	33	0	22	0	0	0	18	0	0	13
Lane Group Flow (vph)	35	35	5	30	2	0	44	704	15	57	813	11
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	8.5	8.5	8.5	4.3	4.3		3.7	30.1	30.1	3.9	30.3	30.3
Effective Green, g (s)	8.5	8.5	8.5	4.3	4.3		3.7	30.1	30.1	3.9	30.3	30.3
Actuated g/C Ratio	0.13	0.13	0.13	0.07	0.07		0.06	0.47	0.47	0.06	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	223	223	210	119	106		102	1662	743	108	1673	748
v/s Ratio Prot	c0.02	0.02		c0.02	0.00		0.02	0.20		c0.03	c0.23	
v/s Ratio Perm			0.00						0.01			0.01
v/c Ratio	0.16	0.16	0.02	0.25	0.02		0.43	0.42	0.02	0.53	0.49	0.02
Uniform Delay, d1	24.6	24.6	24.2	28.4	27.9		29.2	11.3	9.1	29.2	11.6	9.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0	0.4	0.0		1.1	0.2	0.0	2.1	0.3	0.0
Delay (s)	24.7	24.7	24.2	28.8	27.9		30.2	11.5	9.1	31.3	11.9	9.0
Level of Service	C	C	C	C	C		C	B	A	C	B	A
Approach Delay (s)		24.6			28.4			12.4			13.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	727	44	88	652	41	79	29	25	4	29	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.99	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1729	1583		1852	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.99	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1729	1583		1852	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	808	49	98	724	46	88	32	28	4	32	0
RTOR Reduction (vph)	0	0	25	0	0	14	0	0	25	0	0	0
Lane Group Flow (vph)	56	808	24	98	724	32	59	61	3	0	36	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	3.9	26.5	26.5	6.6	29.2	29.2	6.1	6.1	6.1		2.1	
Effective Green, g (s)	5.9	28.5	28.5	7.6	31.2	31.2	7.1	7.1	7.1		4.1	
Actuated g/C Ratio	0.10	0.48	0.48	0.13	0.53	0.53	0.12	0.12	0.12		0.07	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	177	1710	765	228	1871	837	202	208	190		129	
v/s Ratio Prot	0.03	c0.23		c0.06	c0.20		0.04	c0.04			c0.02	
v/s Ratio Perm			0.01			0.02			0.00			
v/c Ratio	0.32	0.47	0.03	0.43	0.39	0.04	0.29	0.29	0.02		0.28	
Uniform Delay, d1	24.7	10.2	8.0	23.7	8.2	6.7	23.7	23.7	22.9		26.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.3	0.0	0.5	0.2	0.0	0.3	0.3	0.0		0.4	
Delay (s)	25.1	10.5	8.0	24.2	8.4	6.7	24.0	23.9	22.9		26.5	
Level of Service	C	B	A	C	A	A	C	C	C		C	
Approach Delay (s)		11.3			10.1			23.8			26.5	
Approach LOS		B			B			C			C	

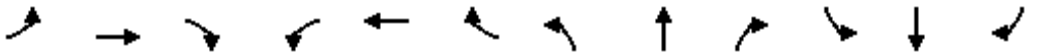
Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	15.4
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	689	139	121	862	34	127	34	74	23	27	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1720	1478	1681	1762	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1720	1478	1681	1762	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	766	154	134	958	38	141	38	82	26	30	70
RTOR Reduction (vph)	0	0	86	0	0	20	0	0	72	0	0	62
Lane Group Flow (vph)	77	766	68	134	958	18	89	90	10	23	33	8
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	6.3	25.4	25.4	7.8	26.9	26.9	6.5	6.5	6.5	5.8	5.8	5.8
Effective Green, g (s)	7.3	28.1	28.1	8.8	29.6	29.6	7.5	7.5	7.5	6.8	7.7	7.7
Actuated g/C Ratio	0.11	0.44	0.44	0.14	0.46	0.46	0.12	0.12	0.12	0.11	0.12	0.12
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	203	1559	651	244	1642	686	198	202	174	179	213	178
v/s Ratio Prot	0.04	c0.22		0.08	c0.27		c0.05	0.05		0.01	c0.02	
v/s Ratio Perm			0.05			0.01			0.01			0.01
v/c Ratio	0.38	0.49	0.10	0.55	0.58	0.03	0.45	0.45	0.06	0.13	0.15	0.05
Uniform Delay, d1	26.2	12.7	10.5	25.6	12.6	9.3	26.2	26.2	25.0	25.8	25.1	24.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3	0.1	1.4	0.6	0.0	0.6	0.6	0.0	0.4	0.5	0.2
Delay (s)	26.6	13.1	10.6	27.0	13.2	9.3	26.8	26.8	25.1	26.3	25.6	25.0
Level of Service	C	B	B	C	B	A	C	C	C	C	C	C
Approach Delay (s)		13.7			14.7			26.3			25.4	
Approach LOS		B			B			C			C	

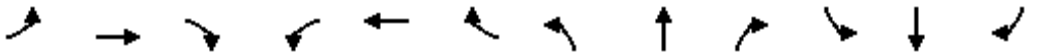
Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	8.7
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



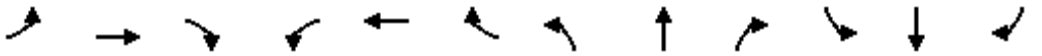
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	759	64	48	665	4	153	33	8	3	20	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			2.0	2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97			0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1699			1852	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97			0.99	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1699			1852	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	41	843	71	53	739	4	170	37	9	3	22	21
RTOR Reduction (vph)	0	0	48	0	0	3	0	2	0	0	0	20
Lane Group Flow (vph)	41	843	23	53	739	1	107	107	0	0	25	1
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8						1
Actuated Green, G (s)	4.6	26.9	26.9	5.1	27.4	27.4	38.1	38.1			3.9	3.9
Effective Green, g (s)	5.6	28.9	28.9	6.1	29.4	29.4	39.1	39.1			4.9	4.9
Actuated g/C Ratio	0.06	0.32	0.32	0.07	0.33	0.33	0.43	0.43			0.05	0.05
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0			3.0	3.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3	3.5	3.5			2.0	2.0
Lane Grp Cap (vph)	110	1136	508	120	1156	517	730	738			101	86
v/s Ratio Prot	0.02	c0.24		0.03	c0.21		c0.06	0.06			c0.01	
v/s Ratio Perm			0.01			0.00						0.00
v/c Ratio	0.37	0.74	0.04	0.44	0.64	0.00	0.15	0.14			0.25	0.01
Uniform Delay, d1	40.5	27.2	21.0	40.3	25.8	20.4	15.4	15.4			40.8	40.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.8	2.9	0.1	0.9	1.4	0.0	0.4	0.4			0.5	0.0
Delay (s)	41.3	30.2	21.1	41.3	27.2	20.4	15.8	15.8			41.3	40.3
Level of Service	D	C	C	D	C	C	B	B			D	D
Approach Delay (s)		30.0			28.1			15.8			40.8	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	411	369	31	290	29	332	57	32	13	54	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1709	1583		1845	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1709	1583		1845	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	31	457	410	34	322	32	369	63	36	14	60	40
RTOR Reduction (vph)	0	0	120	0	0	16	0	0	28	0	0	36
Lane Group Flow (vph)	31	457	290	34	322	16	214	218	8	0	74	4
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	4.2	43.0	61.7	4.3	43.1	43.1	18.7	18.7	18.7		7.0	7.0
Effective Green, g (s)	5.2	45.0	63.7	5.3	45.1	45.1	19.7	19.7	19.7		8.0	8.0
Actuated g/C Ratio	0.06	0.50	0.71	0.06	0.50	0.50	0.22	0.22	0.22		0.09	0.09
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	102	1770	1120	104	1773	793	368	374	347		164	141
v/s Ratio Prot	0.02	c0.13	c0.06	c0.02	0.09		0.13	c0.13			c0.04	
v/s Ratio Perm			0.13			0.01			0.00			0.00
v/c Ratio	0.30	0.26	0.26	0.33	0.18	0.02	0.58	0.58	0.02		0.45	0.03
Uniform Delay, d1	40.7	12.9	4.7	40.6	12.3	11.3	31.5	31.5	27.6		38.9	37.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	0.1	0.1	0.7	0.2	0.0	2.5	2.5	0.0		0.7	0.0
Delay (s)	41.3	13.0	4.9	41.3	12.5	11.4	34.0	33.9	27.6		39.6	37.5
Level of Service	D	B	A	D	B	B	C	C	C		D	D
Approach Delay (s)		10.3			15.0			33.5			38.9	
Approach LOS		B			B			C			D	

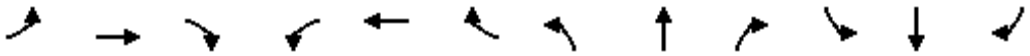
Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	16	44	18	7	4	46	984	8	7	752	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	2.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1632		3433	1761		1676	4984	1413	1745	5187	1472
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1632		3433	1761		1676	4984	1413	1745	5187	1472
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	107	18	49	20	8	4	51	1093	9	8	836	112
RTOR Reduction (vph)	0	43	0	0	4	0	0	0	3	0	0	46
Lane Group Flow (vph)	107	24	0	20	8	0	51	1093	6	8	836	66
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	9.3	8.7		3.2	3.9		4.4	47.5	47.5	0.8	42.9	42.9
Effective Green, g (s)	10.3	9.7		4.2	4.9		5.4	50.9	50.9	1.8	46.3	46.3
Actuated g/C Ratio	0.13	0.12		0.05	0.06		0.07	0.65	0.65	0.02	0.59	0.59
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	231	202		184	110		115	3232	916	40	3059	868
v/s Ratio Prot	c0.06	0.01		c0.01	0.00		c0.03	c0.22		0.00	0.16	
v/s Ratio Perm									0.00			0.04
v/c Ratio	0.46	0.12		0.11	0.07		0.44	0.34	0.01	0.20	0.27	0.08
Uniform Delay, d1	31.5	30.6		35.4	34.7		35.1	6.2	4.9	37.6	7.9	6.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2		0.1	0.1		1.0	0.1	0.0	0.9	0.1	0.1
Delay (s)	32.1	30.8		35.5	34.8		36.1	6.3	4.9	38.5	8.0	7.0
Level of Service	C	C		D	C		D	A	A	D	A	A
Approach Delay (s)		31.6			35.2			7.6			8.1	
Approach LOS		C			D			A			A	

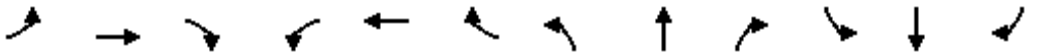
Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	78.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



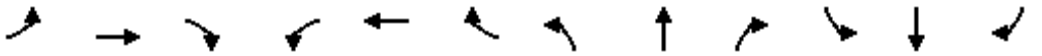
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	27	25	16	14	16	93	169	0	32	177	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.96			0.95		1.00	1.00		1.00	0.93	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1752			1745		1770	3539		1770	1723	
Flt Permitted		0.87			0.85		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1552			1500		1770	3539		1770	1723	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	30	28	18	16	18	103	188	0	36	197	197
RTOR Reduction (vph)	0	18	0	0	17	0	0	0	0	0	32	0
Lane Group Flow (vph)	0	68	0	0	35	0	103	188	0	36	362	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		3.9			3.5		6.9	27.5		2.0	22.6	
Effective Green, g (s)		3.9			3.5		6.9	27.5		2.0	22.6	
Actuated g/C Ratio		0.07			0.07		0.13	0.52		0.04	0.43	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		114			99		231	1840		67	736	
v/s Ratio Prot							c0.06	0.05		0.02	c0.21	
v/s Ratio Perm		c0.04			c0.02							
v/c Ratio		0.60			0.36		0.45	0.10		0.54	0.49	
Uniform Delay, d1		23.7			23.6		21.2	6.4		25.0	11.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.0			0.8		0.5	0.0		4.1	0.5	
Delay (s)		29.7			24.4		21.7	6.5		29.1	11.5	
Level of Service		C			C		C	A		C	B	
Approach Delay (s)		29.7			24.4			11.9			13.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	52.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	0	142	10	2	6	129	1355	6	35	1061	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1787	1583	1770	3537		1770	3539	1583
Flt Permitted		0.95	1.00		0.90	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1678	1583	1770	3537		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	69	0	158	11	2	7	143	1506	7	39	1179	88
RTOR Reduction (vph)	0	0	133	0	0	7	0	0	0	0	0	29
Lane Group Flow (vph)	0	69	25	0	13	0	143	1513	0	39	1179	59
Turn Type	Split		Perm	Perm		Perm	Prot			Prot		Perm
Protected Phases	4	4			3		5	2		1	6	
Permitted Phases			4	3		3						6
Actuated Green, G (s)		11.9	11.9		3.1	3.1	10.8	42.6		4.0	35.8	35.8
Effective Green, g (s)		12.9	12.9		4.1	4.1	13.8	44.6		5.0	38.8	38.8
Actuated g/C Ratio		0.16	0.16		0.05	0.05	0.17	0.55		0.06	0.48	0.48
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		284	254		85	81	303	1960		110	1706	763
v/s Ratio Prot		c0.04					c0.08	c0.43		0.02	0.33	
v/s Ratio Perm			0.02		c0.01	0.00						0.04
v/c Ratio		0.24	0.10		0.15	0.00	0.47	0.77		0.35	0.69	0.08
Uniform Delay, d1		29.5	28.8		36.5	36.3	30.1	14.0		36.2	16.2	11.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2	0.1		0.3	0.0	0.4	2.1		0.7	1.3	0.1
Delay (s)		29.7	28.9		36.8	36.3	30.5	16.1		36.9	17.5	11.3
Level of Service		C	C		D	D	C	B		D	B	B
Approach Delay (s)		29.1			36.6			17.3			17.7	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	11.9
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	293	5	193	8	9	9	210	1186	4	3	866	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		2.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1688	1583		1820	1583	3433	3538		1770	3539	1583
Flt Permitted	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1688	1583		1820	1583	3433	3538		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	326	6	214	9	10	10	233	1318	4	3	962	392
RTOR Reduction (vph)	0	0	144	0	0	10	0	0	0	0	0	111
Lane Group Flow (vph)	166	166	70	0	19	0	233	1322	0	3	962	281
Turn Type	Split		pm+ov	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4	5	3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)	15.7	15.7	26.6		3.1	3.1	10.9	51.0		0.8	39.9	39.9
Effective Green, g (s)	16.7	16.7	28.6		4.1	4.1	11.9	53.5		1.8	42.4	42.4
Actuated g/C Ratio	0.19	0.19	0.33		0.05	0.05	0.14	0.61		0.02	0.49	0.49
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.5		3.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	322	324	574		86	75	469	2173		37	1723	771
v/s Ratio Prot	c0.10	0.10	0.02		c0.01		c0.07	c0.37		0.00	0.27	
v/s Ratio Perm			0.03			0.00						0.18
v/c Ratio	0.52	0.51	0.12		0.22	0.01	0.50	0.61		0.08	0.56	0.36
Uniform Delay, d1	31.6	31.6	20.5		40.0	39.6	34.8	10.3		41.8	15.8	13.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	1.4	0.0		0.5	0.0	0.3	0.7		0.3	0.7	0.6
Delay (s)	33.0	32.9	20.5		40.4	39.6	35.1	11.1		42.2	16.4	14.6
Level of Service	C	C	C		D	D	D	B		D	B	B
Approach Delay (s)		28.1			40.1			14.7			16.0	
Approach LOS		C			D			B			B	

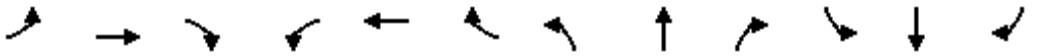
Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	436	790	574	248	456	676
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	2.0
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	484	878	638	276	507	751
RTOR Reduction (vph)	0	21	0	190	0	0
Lane Group Flow (vph)	484	857	638	86	507	751
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	18.6	57.8	28.9	28.9	39.2	74.4
Effective Green, g (s)	19.6	62.4	31.2	31.2	41.5	75.4
Actuated g/C Ratio	0.20	0.62	0.31	0.31	0.42	0.75
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	3.0
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	673	1015	1104	494	1425	2668
v/s Ratio Prot	0.14	c0.35	c0.18		0.15	0.21
v/s Ratio Perm		0.19		0.05		
v/c Ratio	0.72	0.84	0.58	0.17	0.36	0.28
Uniform Delay, d1	37.6	14.9	28.9	25.0	20.1	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	6.3	0.9	0.2	0.1	0.3
Delay (s)	40.7	21.2	29.7	25.3	20.1	4.1
Level of Service	D	C	C	C	C	A
Approach Delay (s)	28.1		28.4			10.6
Approach LOS	C		C			B

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.7
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

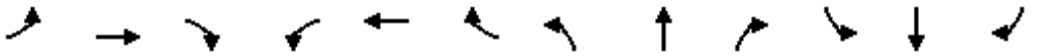
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	21	62	642	8	30	651
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	69	713	9	33	723
RTOR Reduction (vph)	0	56	0	4	0	0
Lane Group Flow (vph)	23	13	713	5	33	723
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.6	6.6	23.3	23.3	0.8	28.1
Effective Green, g (s)	8.6	8.6	26.0	26.0	2.8	30.8
Actuated g/C Ratio	0.19	0.19	0.59	0.59	0.06	0.69
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	665	307	2978	927	112	3527
v/s Ratio Prot	0.01		c0.14		c0.02	0.14
v/s Ratio Perm		c0.01		0.00		
v/c Ratio	0.03	0.04	0.24	0.01	0.29	0.20
Uniform Delay, d1	14.5	14.6	4.4	3.8	19.9	2.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.1	0.0	0.5	0.0
Delay (s)	14.5	14.6	4.5	3.8	20.4	2.5
Level of Service	B	B	A	A	C	A
Approach Delay (s)	14.6		4.5			3.3
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	4.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	7.0
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	325	33	179	528	146	170	21	69	190	6	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	5014		1770	5085	1583		1783	1583	1681	1691	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	5014		1770	5085	1583		1783	1583	1681	1691	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	361	37	199	587	162	189	23	77	211	7	83
RTOR Reduction (vph)	0	12	0	0	0	107	0	0	61	0	0	68
Lane Group Flow (vph)	77	386	0	199	587	55	0	212	16	110	108	15
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	7.2	16.7		12.6	22.1	22.1		13.6	13.6	12.2	12.2	12.2
Effective Green, g (s)	8.2	19.0		13.6	24.4	24.4		14.6	14.6	13.2	13.2	13.2
Actuated g/C Ratio	0.11	0.26		0.19	0.34	0.34		0.20	0.20	0.18	0.18	0.18
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	200	1316		332	1714	533		360	319	306	308	289
v/s Ratio Prot	0.04	0.08		c0.11	c0.12			c0.12		c0.07	0.06	
v/s Ratio Perm						0.03			0.01			0.01
v/c Ratio	0.39	0.29		0.60	0.34	0.10		0.59	0.05	0.36	0.35	0.05
Uniform Delay, d1	29.8	21.3		26.9	18.0	16.5		26.2	23.3	25.9	25.9	24.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.3		1.9	0.2	0.2		1.6	0.0	0.3	0.3	0.0
Delay (s)	30.2	21.6		28.8	18.2	16.7		27.8	23.3	26.2	26.1	24.5
Level of Service	C	C		C	B	B		C	C	C	C	C
Approach Delay (s)		23.0			20.2			26.6			25.7	
Approach LOS		C			C			C			C	

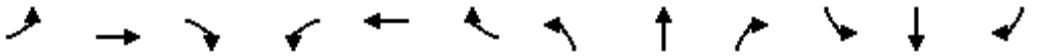
Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	303	277	202	551	125	448	540	55	107	600	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3490		1832	3663	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3490		1832	3663	1639
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	111	337	308	224	612	139	498	600	61	119	667	187
RTOR Reduction (vph)	0	0	256	0	0	97	0	6	0	0	0	139
Lane Group Flow (vph)	111	337	52	224	612	42	498	655	0	119	667	48
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	11.2	16.5	16.5	15.1	20.0	20.0	33.2	47.1		11.8	25.7	25.7
Effective Green, g (s)	12.2	18.5	18.5	16.1	22.7	22.7	34.2	49.4		12.8	28.0	28.0
Actuated g/C Ratio	0.11	0.17	0.17	0.15	0.21	0.21	0.31	0.45		0.12	0.26	0.26
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	199	602	269	262	739	331	557	1586		216	944	422
v/s Ratio Prot	0.06	0.10		c0.13	c0.17		c0.28	0.19		0.06	c0.18	
v/s Ratio Perm			0.03			0.03						0.03
v/c Ratio	0.56	0.56	0.19	0.85	0.83	0.13	0.89	0.41		0.55	0.71	0.11
Uniform Delay, d1	45.7	41.4	38.7	45.2	41.1	34.9	35.5	19.9		45.2	36.6	30.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	1.9	0.7	22.1	8.2	0.3	16.3	0.3		1.7	2.7	0.2
Delay (s)	47.6	43.2	39.4	67.2	49.3	35.2	51.8	20.2		47.0	39.3	31.1
Level of Service	D	D	D	E	D	D	D	C		D	D	C
Approach Delay (s)		42.3			51.4			33.8			38.7	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	41.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	108.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

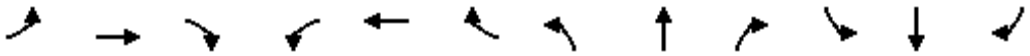


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	12	72	148	13	340	63	611	32	200	808	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1786	1583		1807	1597	1770	3735		1832	4029	1639
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1786	1583		1807	1597	1770	3735		1832	4029	1639
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	81	13	80	164	14	378	70	679	36	222	898	73
RTOR Reduction (vph)	0	0	69	0	0	155	0	3	0	0	0	45
Lane Group Flow (vph)	0	94	11	0	178	223	70	712	0	222	898	28
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		10.5	10.5		12.9	27.1	6.6	22.5		14.2	30.1	30.1
Effective Green, g (s)		10.5	10.5		12.9	29.1	6.6	24.8		15.2	32.4	30.1
Actuated g/C Ratio		0.14	0.14		0.17	0.38	0.09	0.32		0.20	0.42	0.39
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		242	215		301	662	151	1197		360	1687	637
v/s Ratio Prot		c0.05			c0.10	0.07	0.04	c0.19		c0.12	0.22	
v/s Ratio Perm			0.01			0.07						0.02
v/c Ratio		0.39	0.05		0.59	0.34	0.46	0.59		0.62	0.53	0.04
Uniform Delay, d1		30.5	29.1		29.8	17.3	33.7	22.1		28.4	16.8	14.7
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4	0.0		2.1	0.1	0.8	1.2		2.2	0.6	0.1
Delay (s)		30.9	29.1		31.9	17.4	34.5	23.3		30.6	17.4	14.8
Level of Service		C	C		C	B	C	C		C	B	B
Approach Delay (s)		30.1			22.0			24.3			19.7	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

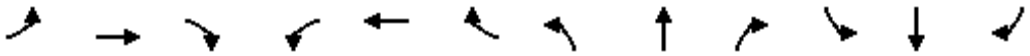
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	36	38	732	14	22	709
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	1.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3529		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3529		1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	40	42	813	16	24	788
RTOR Reduction (vph)	0	36	1	0	0	0
Lane Group Flow (vph)	40	6	828	0	24	788
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	5.8	5.8	26.1		1.0	32.9
Effective Green, g (s)	6.8	6.8	28.1		2.0	34.9
Actuated g/C Ratio	0.15	0.15	0.61		0.04	0.76
Clearance Time (s)	4.0	4.0	4.8		4.0	3.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	263	236	2170		77	2703
v/s Ratio Prot	c0.02		c0.23		0.01	c0.22
v/s Ratio Perm		0.00				
v/c Ratio	0.15	0.03	0.38		0.31	0.29
Uniform Delay, d1	16.9	16.6	4.4		21.2	1.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.0	0.1		2.3	0.1
Delay (s)	17.2	16.7	4.5		23.5	1.7
Level of Service	B	B	A		C	A
Approach Delay (s)	16.9		4.5			2.3
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	4.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	6.8
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	18	0	25	0	1418	27	22	1585	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		2.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3529		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3529		1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	20	0	28	0	1576	30	24	1761	0
RTOR Reduction (vph)	0	0	0	0	0	26	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	20	0	2	0	1605	0	24	1761	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				3.2		3.2		52.7		2.3	58.0	
Effective Green, g (s)				4.2		4.2		54.7		3.3	60.0	
Actuated g/C Ratio				0.05		0.05		0.70		0.04	0.77	
Clearance Time (s)				4.0		4.0		4.9		3.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				96		86		2484		75	2733	
v/s Ratio Prot				c0.01				0.45		0.01	c0.50	
v/s Ratio Perm						0.00						
v/c Ratio				0.21		0.02		0.65		0.32	0.64	
Uniform Delay, d1				35.2		34.8		6.2		36.1	4.0	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.4		0.0		0.9		0.9	0.8	
Delay (s)				35.6		34.8		7.1		37.0	4.8	
Level of Service				D		C		A		D	A	
Approach Delay (s)		0.0			35.1			7.1			5.2	
Approach LOS		A			D			A			A	

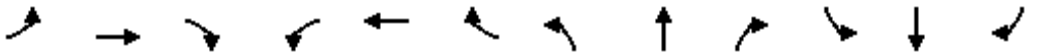
Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	17	26	45	8	67	27	1390	38	92	1500	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.87		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1694		1770	1570		1770	3520		1770	3529	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1694		1770	1570		1770	3520		1770	3529	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	52	19	29	50	9	74	30	1544	42	102	1667	24
RTOR Reduction (vph)	0	27	0	0	68	0	0	1	0	0	1	0
Lane Group Flow (vph)	52	21	0	50	15	0	30	1585	0	102	1690	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split			Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	6.7	6.7		7.4	7.4		4.1	57.1		10.6	64.0	
Effective Green, g (s)	7.7	7.7		8.4	8.4		5.1	59.1		11.6	66.0	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.05	0.60		0.12	0.67	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7		2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	138	132		150	133		91	2099		207	2350	
v/s Ratio Prot	c0.03	0.01		c0.03	0.01		0.02	c0.45		c0.06	0.48	
v/s Ratio Perm												
v/c Ratio	0.38	0.16		0.33	0.11		0.33	0.76		0.49	0.72	
Uniform Delay, d1	43.4	42.7		42.7	41.9		45.4	14.7		41.0	10.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.5		1.1	0.3		0.8	1.8		0.7	1.1	
Delay (s)	44.9	43.2		43.8	42.2		46.1	16.4		41.7	11.8	
Level of Service	D	D		D	D		D	B		D	B	
Approach Delay (s)		44.0			42.8			17.0			13.5	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	99.1	Sum of lost time (s)	12.3
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

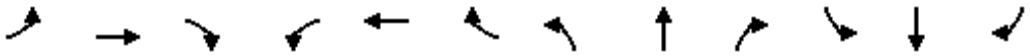
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	21	11	99	29	49	3	1324	12	44	1412	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.99	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		2043	1551		2032	1560	1770	3466		1770	3471	1539
Flt Permitted		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		2043	1551		2032	1560	1770	3466		1770	3471	1539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	47	23	12	110	32	54	3	1471	13	49	1569	60
RTOR Reduction (vph)	0	0	11	0	0	48	0	0	0	0	0	13
Lane Group Flow (vph)	0	70	1	0	142	6	3	1484	0	49	1569	47
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases			1			2						8
Actuated Green, G (s)		7.5	7.5		12.4	12.4	3.6	75.6		6.8	78.8	78.8
Effective Green, g (s)		8.5	8.5		13.4	13.4	4.6	78.3		7.8	81.5	81.5
Actuated g/C Ratio		0.07	0.07		0.11	0.11	0.04	0.65		0.06	0.68	0.68
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	3.8
Lane Grp Cap (vph)		145	110		227	174	68	2262		115	2357	1045
v/s Ratio Prot		c0.03			c0.07		0.00	c0.43		0.03	c0.45	
v/s Ratio Perm			0.00			0.00						0.03
v/c Ratio		0.48	0.01		0.63	0.03	0.04	0.66		0.43	0.67	0.05
Uniform Delay, d1		53.6	51.8		50.9	47.5	55.6	12.7		53.9	11.3	6.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.23	0.39	0.34
Incremental Delay, d2		0.9	0.0		3.8	0.0	0.1	0.8		0.6	1.0	0.1
Delay (s)		54.6	51.8		54.7	47.6	55.7	13.4		67.1	5.3	2.2
Level of Service		D	D		D	D	E	B		E	A	A
Approach Delay (s)		54.2			52.8			13.5			7.0	
Approach LOS		D			D			B			A	

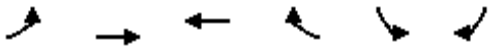
Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



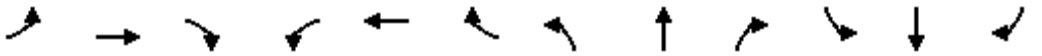
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	0	16	35	0	14	19	1378	14	21	1485	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00		0.97	1.00		0.96	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1535	1770		1524	1770	3532		1770	3536	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1535	1770		1524	1770	3532		1770	3536	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	0	18	39	0	16	21	1531	16	23	1650	9
RTOR Reduction (vph)	0	0	17	0	0	15	0	0	0	0	0	0
Lane Group Flow (vph)	13	0	1	39	0	1	21	1547	0	23	1659	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	6.8		6.8	6.8		6.8	4.1	94.5		4.2	94.6	
Effective Green, g (s)	7.8		7.8	7.8		7.8	5.1	96.0		6.2	96.1	
Actuated g/C Ratio	0.06		0.06	0.06		0.06	0.04	0.77		0.05	0.77	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	110		96	110		95	72	2713		88	2718	
v/s Ratio Prot	0.01			c0.02			c0.01	0.44		0.01	c0.47	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.12		0.01	0.35		0.01	0.29	0.57		0.26	0.61	
Uniform Delay, d1	55.4		55.0	56.2		55.0	58.2	6.0		57.2	6.3	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2		0.0	0.7		0.0	0.8	0.9		0.6	0.5	
Delay (s)	55.5		55.0	56.9		55.0	59.0	6.9		57.8	6.7	
Level of Service	E		E	E		D	E	A		E	A	
Approach Delay (s)		55.2			56.3			7.6			7.4	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



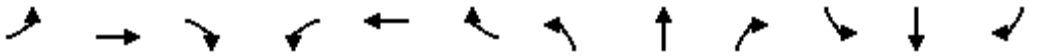
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	18	327	343	8	35	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	3.9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	363	381	9	39	42
RTOR Reduction (vph)	0	0	0	4	0	36
Lane Group Flow (vph)	20	363	381	5	39	6
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.8	29.6	24.8	24.8	5.0	5.0
Effective Green, g (s)	1.8	30.6	25.8	25.8	6.0	6.0
Actuated g/C Ratio	0.04	0.68	0.57	0.57	0.13	0.13
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	2.0
Lane Grp Cap (vph)	70	2396	2020	904	235	210
v/s Ratio Prot	c0.01	0.10	c0.11		c0.02	
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.29	0.15	0.19	0.01	0.17	0.03
Uniform Delay, d1	21.1	2.6	4.7	4.2	17.4	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	0.1	0.0	0.1	0.0
Delay (s)	21.9	2.7	4.7	4.2	17.5	17.1
Level of Service	C	A	A	A	B	B
Approach Delay (s)		3.7	4.7		17.3	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	11.6
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



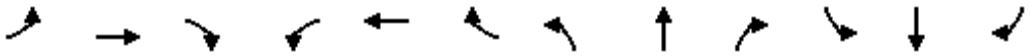
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	202	271	120	313	19	365	497	85	8	460	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	48	224	301	133	348	21	406	552	94	9	511	130
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	48	224	301	133	348	21	406	552	94	9	511	130
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.0	14.5	98.6	11.8	20.7	98.6	27.8	52.2	98.6	1.1	25.5	98.6
Effective Green, g (s)	7.0	17.2	98.6	12.8	23.4	98.6	28.8	54.5	98.6	2.1	27.8	98.6
Actuated g/C Ratio	0.07	0.17	1.00	0.13	0.24	1.00	0.29	0.55	1.00	0.02	0.28	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	126	617	1583	230	840	1583	517	1956	1583	38	998	1583
v/s Ratio Prot	0.03	0.06		c0.08	c0.10		c0.23	0.16		0.01	c0.14	
v/s Ratio Perm			0.19			0.01			0.06			0.08
v/c Ratio	0.38	0.36	0.19	0.58	0.41	0.01	0.79	0.28	0.06	0.24	0.51	0.08
Uniform Delay, d1	43.7	35.9	0.0	40.4	31.8	0.0	32.1	11.7	0.0	47.5	29.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.6	0.3	2.2	0.7	0.0	7.1	0.2	0.1	1.2	0.9	0.1
Delay (s)	44.4	36.4	0.3	42.5	32.5	0.0	39.2	11.8	0.1	48.6	30.6	0.1
Level of Service	D	D	A	D	C	A	D	B	A	D	C	A
Approach Delay (s)		18.1			33.8			21.3			24.7	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	21	164	163	34	165	46	618	18	43	1034	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1789	1583	1770	3524		1770	3530	
Flt Permitted		0.93	1.00		0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1737	1583		1384	1583	1770	3524		1770	3530	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	23	182	181	38	183	51	687	20	48	1149	21
RTOR Reduction (vph)	0	0	140	0	0	141	0	3	0	0	2	0
Lane Group Flow (vph)	0	29	42	0	219	42	51	704	0	48	1168	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		12.3	12.3		12.3	12.3	6.1	28.9		4.2	28.0	
Effective Green, g (s)		13.9	13.9		13.9	13.9	7.1	31.6		5.2	30.7	
Actuated g/C Ratio		0.23	0.23		0.23	0.23	0.12	0.53		0.09	0.51	
Clearance Time (s)		4.9	4.9		4.9	4.9	3.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		402	367		321	367	209	1856		153	1806	
v/s Ratio Prot							0.03	c0.20		0.03	c0.33	
v/s Ratio Perm		0.02	0.03		c0.16	0.03						
v/c Ratio		0.07	0.11		0.68	0.12	0.24	0.38		0.31	0.65	
Uniform Delay, d1		18.0	18.2		21.0	18.2	24.0	8.4		25.7	10.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.1		5.4	0.1	0.2	0.2		0.4	1.8	
Delay (s)		18.1	18.3		26.4	18.3	24.2	8.6		26.2	12.5	
Level of Service		B	B		C	B	C	A		C	B	
Approach Delay (s)		18.3			22.7			9.6			13.0	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.3
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

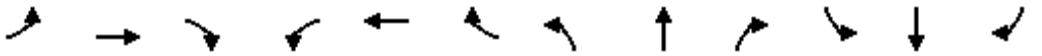


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	2	4	46	4	56	5	640	20	42	1234	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.97			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1745			1780	1583	1770	3523		1770	3533	
Flt Permitted		0.87			0.76	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1564			1413	1583	1770	3523		1770	3533	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	2	4	51	4	62	6	711	22	47	1371	16
RTOR Reduction (vph)	0	3	0	0	0	53	0	1	0	0	0	0
Lane Group Flow (vph)	0	13	0	0	55	9	6	732	0	47	1387	0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4		4						
Actuated Green, G (s)		11.9			11.9	11.9	1.1	59.0		5.4	63.3	
Effective Green, g (s)		12.9			12.9	12.9	2.1	62.0		6.4	66.3	
Actuated g/C Ratio		0.14			0.14	0.14	0.02	0.69		0.07	0.74	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0			3.0	3.0	2.0	4.3		3.0	4.3	
Lane Grp Cap (vph)		224			203	227	41	2427		126	2603	
v/s Ratio Prot							0.00	0.21		c0.03	c0.39	
v/s Ratio Perm		0.01			c0.04	0.01						
v/c Ratio		0.06			0.27	0.04	0.15	0.30		0.37	0.53	
Uniform Delay, d1		33.3			34.4	33.2	43.1	5.5		39.9	5.1	
Progression Factor		1.00			1.00	1.00	1.04	1.04		1.00	1.00	
Incremental Delay, d2		0.1			0.7	0.1	0.6	0.1		1.9	0.8	
Delay (s)		33.4			35.1	33.3	45.2	5.8		41.7	5.9	
Level of Service		C			D	C	D	A		D	A	
Approach Delay (s)		33.4			34.1			6.1			7.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

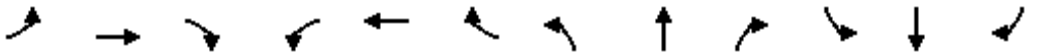
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	25	70	614	13	95	1193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3529		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3529		1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	78	682	14	106	1326
RTOR Reduction (vph)	0	68	1	0	0	0
Lane Group Flow (vph)	28	10	695	0	106	1326
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	10.1	10.1	57.5		8.7	70.2
Effective Green, g (s)	11.1	11.1	60.5		9.7	73.2
Actuated g/C Ratio	0.12	0.12	0.67		0.11	0.81
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	218	195	2372		191	2878
v/s Ratio Prot	c0.02		0.20		c0.06	c0.37
v/s Ratio Perm		0.01				
v/c Ratio	0.13	0.05	0.29		0.55	0.46
Uniform Delay, d1	35.1	34.8	6.0		38.1	2.5
Progression Factor	1.00	1.00	1.00		0.83	1.62
Incremental Delay, d2	0.1	0.0	0.1		1.8	0.5
Delay (s)	35.2	34.8	6.1		33.3	4.5
Level of Service	D	C	A		C	A
Approach Delay (s)	34.9		6.1			6.7
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



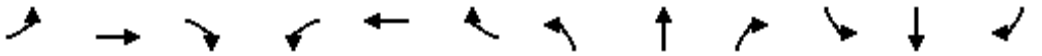
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	0	179	1	3	2	233	876	1	1	655	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5	3.5		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1665	1665	1437		1764		1660	3417	1544	1814	3491	1500
Flt Permitted	0.95	0.95	1.00		0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1665	1665	1437		1764		1660	3417	1544	1814	3491	1500
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	186	0	199	1	3	2	259	973	1	1	728	136
RTOR Reduction (vph)	0	0	162	0	2	0	0	0	0	0	0	85
Lane Group Flow (vph)	93	93	37	0	4	0	259	973	1	1	728	51
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.7	11.7	11.7		1.2		17.4	41.1	41.1	1.1	24.8	24.8
Effective Green, g (s)	14.2	14.2	14.2		2.2		18.4	44.5	44.5	2.1	28.2	28.2
Actuated g/C Ratio	0.19	0.19	0.19		0.03		0.24	0.59	0.59	0.03	0.37	0.37
Clearance Time (s)	6.0	6.0	6.0		4.0		4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)	4.1	4.1	4.1		2.0		2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	313	313	270		51		405	2014	910	50	1304	560
v/s Ratio Prot	c0.06	0.06			c0.00		c0.16	0.28		0.00	c0.21	
v/s Ratio Perm			0.03						0.00			0.03
v/c Ratio	0.30	0.30	0.14		0.08		0.64	0.48	0.00	0.02	0.56	0.09
Uniform Delay, d1	26.4	26.4	25.6		35.7		25.6	8.9	6.4	35.7	18.7	15.3
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.8	0.3		0.2		2.4	0.3	0.0	0.1	0.7	0.1
Delay (s)	27.1	27.1	25.9		35.9		28.0	9.2	6.4	35.8	19.4	15.4
Level of Service	C	C	C		D		C	A	A	D	B	B
Approach Delay (s)		26.5			35.9			13.1			18.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.5	Sum of lost time (s)	12.5
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



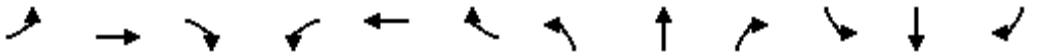
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	0	8	2	0	2	6	1096	2	5	826	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4	6.4	4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	9	2	0	2	7	1218	2	6	918	6
RTOR Reduction (vph)	0	0	9	0	0	2	0	0	0	0	0	1
Lane Group Flow (vph)	0	6	0	0	2	0	7	1218	2	6	918	5
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)		1.0	1.0		3.0	3.0	0.6	43.5	43.5	0.6	43.5	43.5
Effective Green, g (s)		1.0	2.0		3.0	3.0	1.6	44.5	43.5	0.6	44.5	44.5
Actuated g/C Ratio		0.02	0.03		0.05	0.05	0.02	0.67	0.65	0.01	0.67	0.67
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)		27	48		80	71	43	2368	1035	16	2368	1059
v/s Ratio Prot		c0.00			c0.00		c0.00	c0.34		0.00	0.26	
v/s Ratio Perm			0.00			0.00			0.00			0.00
v/c Ratio		0.22	0.01		0.03	0.00	0.16	0.51	0.00	0.38	0.39	0.00
Uniform Delay, d1		32.4	31.3		30.4	30.3	31.8	5.5	4.0	32.8	4.9	3.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.5	0.0		0.0	0.0	0.7	0.3	0.0	5.3	0.2	0.0
Delay (s)		33.9	31.3		30.4	30.3	32.4	5.8	4.0	38.1	5.1	3.7
Level of Service		C	C		C	C	C	A	A	D	A	A
Approach Delay (s)		32.3			30.4			6.0			5.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	16.4
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



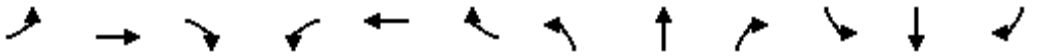
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	2	243	13	9	2	242	1002	19	6	801	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1688	1583	1610	3282		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1688	1583	1610	3282		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	120	2	270	14	10	2	269	1113	21	7	890	38
RTOR Reduction (vph)	0	0	219	0	2	0	0	0	8	0	0	25
Lane Group Flow (vph)	61	61	51	9	15	0	269	1113	13	7	890	13
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.4	11.4	11.4	2.7	2.7		16.5	38.2	38.2	0.8	22.1	22.1
Effective Green, g (s)	14.1	14.1	14.1	3.7	3.7		17.5	41.6	41.6	1.8	25.5	25.5
Actuated g/C Ratio	0.19	0.19	0.19	0.05	0.05		0.23	0.56	0.56	0.02	0.34	0.34
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	318	319	300	80	163		416	1976	884	43	1741	542
v/s Ratio Prot	c0.04	0.04		c0.01	0.00		c0.15	c0.31		0.00	0.18	
v/s Ratio Perm			0.03						0.01			0.01
v/c Ratio	0.19	0.19	0.17	0.11	0.09		0.65	0.56	0.01	0.16	0.51	0.02
Uniform Delay, d1	25.4	25.4	25.3	33.8	33.8		25.7	10.6	7.3	35.6	19.5	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.4	1.0	0.4		2.6	0.6	0.0	0.7	0.4	0.0
Delay (s)	25.9	25.9	25.7	34.8	34.2		28.3	11.2	7.3	36.3	19.9	16.3
Level of Service	C	C	C	C	C		C	B	A	D	B	B
Approach Delay (s)		25.8			34.4			14.4			19.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	10.7
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



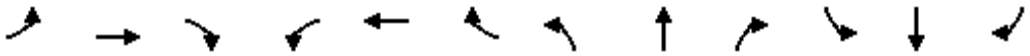
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	215	4	175	110	7	83	121	1152	48	89	1035	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1688	1583		1779	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1688	1583		1779	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	239	4	194	122	8	92	134	1280	53	99	1150	68
RTOR Reduction (vph)	0	0	169	0	0	81	0	0	21	0	0	31
Lane Group Flow (vph)	122	121	25	0	130	11	134	1280	32	99	1150	37
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	14.2	14.2	14.2		13.7	13.7	13.4	62.7	62.7	11.7	61.7	61.7
Effective Green, g (s)	15.2	15.2	15.2		14.7	14.7	14.4	65.7	63.7	12.7	64.7	64.7
Actuated g/C Ratio	0.13	0.13	0.13		0.12	0.12	0.12	0.55	0.53	0.11	0.54	0.54
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	5.3
Lane Grp Cap (vph)	213	214	201		218	194	212	2784	840	187	2742	854
v/s Ratio Prot	c0.07	0.07			c0.07		c0.08	c0.25		c0.06	0.23	
v/s Ratio Perm			0.02			0.01			0.02			0.02
v/c Ratio	0.57	0.57	0.12		0.60	0.06	0.63	0.46	0.04	0.53	0.42	0.04
Uniform Delay, d1	49.3	49.3	46.5		49.8	46.5	50.3	16.4	13.5	50.8	16.5	13.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	2.0	0.1		2.9	0.0	4.5	0.5	0.1	1.2	0.2	0.0
Delay (s)	51.6	51.3	46.6		52.7	46.6	54.7	17.0	13.6	52.1	16.7	13.1
Level of Service	D	D	D		D	D	D	B	B	D	B	B
Approach Delay (s)		49.3			50.2			20.3			19.2	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



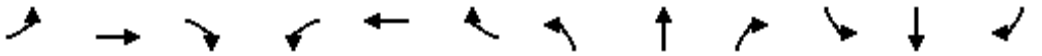
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	174	122	211	36	82	0	297	1297	67	22	1354	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	193	136	234	40	91	0	330	1441	74	24	1504	320
RTOR Reduction (vph)	0	0	179	0	0	0	0	0	20	0	0	98
Lane Group Flow (vph)	193	136	55	40	91	0	330	1441	54	24	1504	222
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.4	25.7	25.7	6.0	14.3		15.8	63.2	63.2	5.4	52.8	52.8
Effective Green, g (s)	18.4	28.4	28.4	7.0	17.0		16.8	66.2	66.2	6.4	55.8	55.8
Actuated g/C Ratio	0.15	0.24	0.24	0.06	0.14		0.14	0.55	0.55	0.05	0.46	0.46
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3		2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	271	441	375	103	264		481	1952	873	94	1646	736
v/s Ratio Prot	c0.11	c0.07		0.02	0.05		c0.10	0.41		0.01	c0.42	
v/s Ratio Perm			0.03						0.03			0.14
v/c Ratio	0.71	0.31	0.15	0.39	0.34		0.69	0.74	0.06	0.26	0.91	0.30
Uniform Delay, d1	48.3	37.7	36.2	54.4	46.5		49.1	20.3	12.5	54.5	29.9	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.2	0.6	0.3	0.9	1.2		3.2	2.5	0.1	0.5	8.5	0.4
Delay (s)	55.4	38.3	36.5	55.3	47.7		52.3	22.9	12.6	55.0	38.4	20.4
Level of Service	E	D	D	E	D		D	C	B	E	D	C
Approach Delay (s)		43.4			50.0			27.7			35.5	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



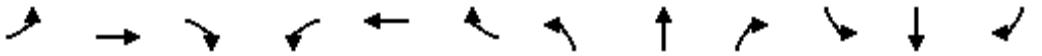
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	313	20	1	211	7	0	2	0	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			1.00			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1770	3508		1770	3522			1863			1695	
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (perm)	1770	3508		1770	3522			1863			1695	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	348	22	1	234	8	0	2	0	6	0	6
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	0	0	6	0
Lane Group Flow (vph)	7	368	0	1	241	0	0	2	0	0	6	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.8	28.4		0.6	28.2			2.2			0.8	
Effective Green, g (s)	1.8	31.1		1.6	30.9			3.2			1.8	
Actuated g/C Ratio	0.04	0.63		0.03	0.62			0.06			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	64	2195		57	2190			120			61	
v/s Ratio Prot	c0.00	c0.10		0.00	0.07			c0.00			c0.00	
v/s Ratio Perm												
v/c Ratio	0.11	0.17		0.02	0.11			0.02			0.10	
Uniform Delay, d1	23.2	3.9		23.3	3.8			21.8			23.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	0.1		0.0	0.0			0.0			0.3	
Delay (s)	23.5	4.0		23.3	3.9			21.8			23.4	
Level of Service	C	A		C	A			C			C	
Approach Delay (s)		4.3			3.9			21.8			23.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	4.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	49.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



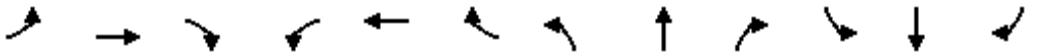
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	329	18	16	251	29	5	1	12	25	0	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.91			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1674			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1674			1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	211	366	20	18	279	32	6	1	13	28	0	114
RTOR Reduction (vph)	0	0	9	0	0	21	0	13	0	0	0	93
Lane Group Flow (vph)	211	366	11	18	279	11	0	7	0	0	28	21
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	11.7	28.3	28.3	0.8	17.4	17.4		1.0			8.6	8.6
Effective Green, g (s)	12.7	31.3	31.3	1.8	20.4	20.4		2.0			10.6	10.6
Actuated g/C Ratio	0.22	0.54	0.54	0.03	0.35	0.35		0.03			0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	385	1897	848	55	1236	553		57			321	287
v/s Ratio Prot	c0.12	0.10		0.01	c0.08			c0.00			c0.02	
v/s Ratio Perm			0.01			0.01						0.01
v/c Ratio	0.55	0.19	0.01	0.33	0.23	0.02		0.13			0.09	0.07
Uniform Delay, d1	20.3	7.0	6.3	27.7	13.4	12.5		27.4			19.9	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.9	0.1	0.0	1.3	0.1	0.0		0.4			0.0	0.0
Delay (s)	21.2	7.1	6.3	29.0	13.5	12.5		27.7			19.9	19.9
Level of Service	C	A	A	C	B	B		C			B	B
Approach Delay (s)		12.0			14.3			27.7			19.9	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	12.7
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



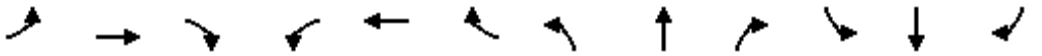
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	206	11	10	157	97	2	8	8	78	7	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1846	1583		1781	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1846	1583		1781	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	229	12	11	174	108	2	9	9	87	8	42
RTOR Reduction (vph)	0	0	7	0	0	66	0	0	9	0	0	32
Lane Group Flow (vph)	56	229	5	11	174	42	0	11	0	0	95	10
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	2.4	17.8	17.8	0.6	15.0	15.0		1.0	1.0		9.6	9.6
Effective Green, g (s)	3.4	20.8	20.8	1.6	18.0	18.0		2.0	2.0		10.6	10.6
Actuated g/C Ratio	0.07	0.45	0.45	0.03	0.39	0.39		0.04	0.04		0.23	0.23
Clearance Time (s)	4.0	6.0	6.0	3.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	131	1600	716	62	1385	619		80	69		410	365
v/s Ratio Prot	c0.03	c0.06		0.01	0.05			c0.01			c0.05	
v/s Ratio Perm			0.00			0.03			0.00			0.01
v/c Ratio	0.43	0.14	0.01	0.18	0.13	0.07		0.14	0.01		0.23	0.03
Uniform Delay, d1	20.4	7.4	6.9	21.6	9.0	8.8		21.2	21.0		14.4	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	0.0	0.0	0.5	0.0	0.1		0.3	0.0		0.1	0.0
Delay (s)	21.2	7.4	6.9	22.1	9.0	8.8		21.5	21.1		14.5	13.7
Level of Service	C	A	A	C	A	A		C	C		B	B
Approach Delay (s)		10.0			9.4			21.3			14.3	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



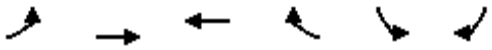
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	243	177	21	53	235	130	37	242	36	83	225	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	2.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	270	197	23	59	261	144	41	269	40	92	250	307
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	270	197	23	59	261	144	41	269	40	92	250	307
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.7	25.1	69.7	4.2	17.6	69.7	2.4	15.5	69.7	6.2	19.6	69.7
Effective Green, g (s)	11.7	28.1	69.7	5.2	20.6	69.7	3.4	18.2	69.7	7.2	22.3	69.7
Actuated g/C Ratio	0.17	0.40	1.00	0.07	0.30	1.00	0.05	0.26	1.00	0.10	0.32	1.00
Clearance Time (s)	4.0	5.7		3.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	576	1427	1583	256	1046	1583	167	924	1583	355	1132	1583
v/s Ratio Prot	c0.08	0.06		0.02	c0.07		0.01	c0.08		c0.03	0.07	
v/s Ratio Perm			0.01			0.09			0.03			c0.19
v/c Ratio	0.47	0.14	0.01	0.23	0.25	0.09	0.25	0.29	0.03	0.26	0.22	0.19
Uniform Delay, d1	26.2	13.1	0.0	30.4	18.7	0.0	31.9	20.6	0.0	28.8	17.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.0	0.2	0.2	0.1	0.3	0.3	0.0	0.1	0.2	0.3
Delay (s)	26.4	13.2	0.0	30.5	18.9	0.1	32.2	20.8	0.0	28.9	17.5	0.3
Level of Service	C	B	A	C	B	A	C	C	A	C	B	A
Approach Delay (s)		19.9			14.5			19.8			11.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



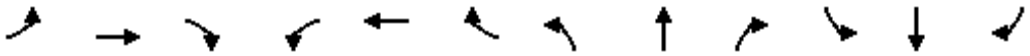
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	284	18	29	394	44	15	116	25	49	52	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3508		1770	3486		1770	1813		1770	1744	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3508		1770	3486		1770	1813		1770	1744	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	316	20	32	438	49	17	129	28	54	58	43
RTOR Reduction (vph)	0	4	0	0	7	0	0	7	0	0	20	0
Lane Group Flow (vph)	22	332	0	32	480	0	17	150	0	54	81	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.9	18.0		2.0	18.1		1.0	12.4		4.3	15.7	
Effective Green, g (s)	2.9	20.7		3.0	20.8		2.0	14.7		5.3	18.0	
Actuated g/C Ratio	0.05	0.37		0.05	0.38		0.04	0.27		0.10	0.33	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	93	1313		96	1311		64	482		170	568	
v/s Ratio Prot	0.01	0.09		c0.02	c0.14		0.01	c0.08		c0.03	0.05	
v/s Ratio Perm												
v/c Ratio	0.24	0.25		0.33	0.37		0.27	0.31		0.32	0.14	
Uniform Delay, d1	25.1	12.0		25.2	12.5		25.9	16.3		23.3	13.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		0.7	0.2		0.8	0.5		0.4	0.2	
Delay (s)	25.6	12.1		25.9	12.7		26.7	16.7		23.7	13.4	
Level of Service	C	B		C	B		C	B		C	B	
Approach Delay (s)		12.9			13.5			17.7			17.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	55.3	Sum of lost time (s)	8.6
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



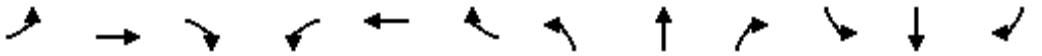
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	386	591	33	39	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	1770	3539	3511		1770	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	1770	3539	3511		1770	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	429	657	37	43	0
RTOR Reduction (vph)	0	0	3	0	0	0
Lane Group Flow (vph)	11	429	691	0	43	0
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	0.8	33.2	28.4		5.7	
Effective Green, g (s)	1.8	35.9	31.1		6.7	
Actuated g/C Ratio	0.04	0.74	0.64		0.14	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	3.8	3.8		2.0	
Lane Grp Cap (vph)	66	2614	2247		244	
v/s Ratio Prot	0.01	c0.12	c0.20		c0.02	
v/s Ratio Perm						
v/c Ratio	0.17	0.16	0.31		0.18	
Uniform Delay, d1	22.7	1.9	3.9		18.5	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.0	0.1		0.1	
Delay (s)	23.1	1.9	4.0		18.6	
Level of Service	C	A	A		B	
Approach Delay (s)		2.5	4.0		18.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	4.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	30.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



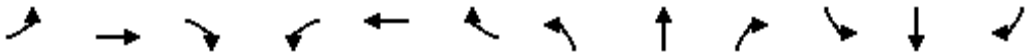
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	372	51	65	635	0	59	0	49	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7		2.0	2.7			2.0	2.0			
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00			
Frt		0.98		1.00	1.00			1.00	0.85			
Flt Protected		1.00		0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3475		1770	3539			1770	1583			
Flt Permitted		1.00		0.95	1.00			0.95	1.00			
Satd. Flow (perm)		3475		1770	3539			1770	1583			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	413	57	72	706	0	66	0	54	0	0	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	42	0	0	0
Lane Group Flow (vph)	0	463	0	72	706	0	0	66	12	0	0	0
Turn Type	Prot			Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)		18.6		4.5	27.1			8.3	8.3			
Effective Green, g (s)		21.6		6.5	30.1			10.3	10.3			
Actuated g/C Ratio		0.48		0.14	0.67			0.23	0.23			
Clearance Time (s)		5.7		4.0	5.7			4.0	4.0			
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		1664		255	2362			404	362			
v/s Ratio Prot		0.13		0.04	c0.20			c0.04				
v/s Ratio Perm									0.01			
v/c Ratio		0.28		0.28	0.30			0.16	0.03			
Uniform Delay, d1		7.1		17.2	3.1			13.9	13.5			
Progression Factor		1.00		1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.1		0.6	0.1			0.2	0.0			
Delay (s)		7.2		17.8	3.2			14.1	13.6			
Level of Service		A		B	A			B	B			
Approach Delay (s)		7.2			4.5			13.9			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	45.1	Sum of lost time (s)	4.7
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



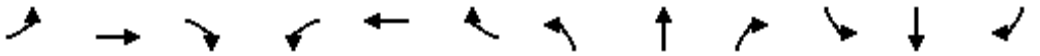
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	443	13	86	693	8	34	15	94	19	10	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3525		1770	3533			1801	1583		1804	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.82	1.00		0.84	1.00
Satd. Flow (perm)	1770	3525		1770	3533			1527	1583		1562	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	492	14	96	770	9	38	17	104	21	11	27
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	83	0	0	22
Lane Group Flow (vph)	23	504	0	96	779	0	0	55	21	0	32	5
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	0.9	21.0		6.0	26.1			8.9	8.9		8.9	8.9
Effective Green, g (s)	1.9	23.7		7.0	28.8			9.9	9.9		9.9	9.9
Actuated g/C Ratio	0.04	0.48		0.14	0.58			0.20	0.20		0.20	0.20
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	68	1684		250	2051			305	316		312	316
v/s Ratio Prot	0.01	0.14		c0.05	c0.22							
v/s Ratio Perm								c0.04	0.01		0.02	0.00
v/c Ratio	0.34	0.30		0.38	0.38			0.18	0.07		0.10	0.02
Uniform Delay, d1	23.2	7.9		19.3	5.6			16.5	16.1		16.2	15.9
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	0.1		0.4	0.2			0.1	0.0		0.1	0.0
Delay (s)	24.3	8.0		19.7	5.7			16.6	16.1		16.3	16.0
Level of Service	C	A		B	A			B	B		B	B
Approach Delay (s)		8.7			7.3			16.3			16.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



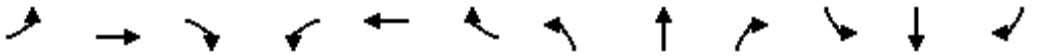
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	282	5	4	410	21	5	0	12	38	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99			0.91		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1849			1664		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)	1770	1857		1770	1849			1664		1770	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	313	6	4	456	23	6	0	13	42	0	23
RTOR Reduction (vph)	0	0	0	0	1	0	0	13	0	0	20	0
Lane Group Flow (vph)	17	319	0	4	478	0	0	6	0	42	3	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	0.9	30.2		0.7	30.0			0.9		6.0	6.0	
Effective Green, g (s)	1.9	32.9		1.7	32.7			1.9		7.0	7.0	
Actuated g/C Ratio	0.03	0.59		0.03	0.59			0.03		0.13	0.13	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	61	1101		54	1089			57		223	200	
v/s Ratio Prot	c0.01	0.17		0.00	c0.26			c0.00		c0.02	0.00	
v/s Ratio Perm												
v/c Ratio	0.28	0.29		0.07	0.44			0.11		0.19	0.01	
Uniform Delay, d1	26.1	5.6		26.1	6.3			26.0		21.7	21.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.2		0.2	0.4			0.6		0.1	0.0	
Delay (s)	27.0	5.7		26.3	6.7			26.6		21.9	21.2	
Level of Service	C	A		C	A			C		C	C	
Approach Delay (s)		6.8			6.8			26.6			21.6	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



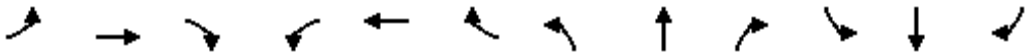
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	38	47	128	14	24	42	464	163	20	454	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	4.3	4.3	2.0	3.2	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1823	1583		1783	1583	1770	1863	1583	1770	3537	
Flt Permitted		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1823	1583		1783	1583	1770	1863	1583	1770	3537	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	42	52	142	16	27	47	516	181	22	504	2
RTOR Reduction (vph)	0	0	46	0	0	21	0	0	101	0	0	0
Lane Group Flow (vph)	0	75	6	0	158	6	47	516	80	22	506	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			
Actuated Green, G (s)		7.4	7.4		14.9	14.9	4.1	28.6	28.6	1.9	26.5	
Effective Green, g (s)		8.4	8.4		15.9	15.9	5.1	29.6	29.6	2.9	27.5	
Actuated g/C Ratio		0.12	0.12		0.23	0.23	0.07	0.43	0.43	0.04	0.40	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3	5.3	3.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		222	192		410	364	131	798	678	74	1408	
v/s Ratio Prot		c0.04			c0.09		c0.03	c0.28		0.01	0.14	
v/s Ratio Perm			0.00			0.00			0.05			
v/c Ratio		0.34	0.03		0.39	0.02	0.36	0.65	0.12	0.30	0.36	
Uniform Delay, d1		27.8	26.8		22.5	20.6	30.4	15.6	11.9	32.1	14.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.2	0.0	0.6	1.4	0.0	0.8	0.1	
Delay (s)		28.1	26.8		22.7	20.6	31.1	17.0	11.9	32.9	14.8	
Level of Service		C	C		C	C	C	B	B	C	B	
Approach Delay (s)		27.6			22.4			16.6			15.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



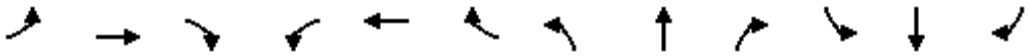
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	85	0	232	256	4	0	244	244	0	233	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1770	1863		1770	1859			1863	1583		1863	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1770	1863		1770	1859			1863	1583		1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	152	94	0	258	284	4	0	271	271	0	259	233
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	209	0	0	0
Lane Group Flow (vph)	152	94	0	258	288	0	0	271	62	0	259	233
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	14.9	14.9		23.9	23.9			21.5	21.5		20.2	99.1
Effective Green, g (s)	15.9	15.9		24.9	24.9			22.5	22.5		21.2	99.1
Actuated g/C Ratio	0.16	0.16		0.25	0.25			0.23	0.23		0.21	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		5.0	5.0			3.0	3.0		2.5	
Lane Grp Cap (vph)	284	299		445	467			423	359		399	1583
v/s Ratio Prot	c0.09	0.05		0.15	c0.15			c0.15			c0.14	
v/s Ratio Perm									0.04			0.15
v/c Ratio	0.54	0.31		0.58	0.62			0.64	0.17		0.65	0.15
Uniform Delay, d1	38.2	36.8		32.5	32.9			34.6	30.8		35.6	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.4		2.9	3.5			3.3	0.2		3.2	0.2
Delay (s)	39.7	37.2		35.4	36.3			37.9	31.0		38.8	0.2
Level of Service	D	D		D	D			D	C		D	A
Approach Delay (s)		38.8			35.9			34.5			20.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	99.1	Sum of lost time (s)	14.6
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



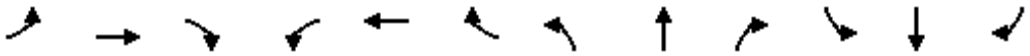
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	359	122	29	308	26	89	29	33	7	36	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00		1.00			0.96	1.00		0.99	
Satd. Flow (prot)		1858	1583		1837			1795	1583		1781	
Flt Permitted		0.98	1.00		0.96			0.81	1.00		0.96	
Satd. Flow (perm)		1820	1583		1765			1508	1583		1723	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	21	399	136	32	342	29	99	32	37	8	40	19
RTOR Reduction (vph)	0	0	37	0	3	0	0	0	31	0	16	0
Lane Group Flow (vph)	0	420	99	0	400	0	0	131	6	0	51	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		42.7	42.7		42.7			9.1	9.1		9.1	
Effective Green, g (s)		43.7	43.7		43.7			10.1	10.1		10.1	
Actuated g/C Ratio		0.73	0.73		0.73			0.17	0.17		0.17	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1326	1153		1286			254	266		290	
v/s Ratio Prot												
v/s Ratio Perm		c0.23	0.06		0.23			c0.09	0.00		0.03	
v/c Ratio		0.32	0.09		0.31			0.52	0.02		0.18	
Uniform Delay, d1		2.9	2.4		2.9			22.7	20.8		21.4	
Progression Factor		1.00	1.00		0.64			1.00	1.00		1.00	
Incremental Delay, d2		0.6	0.1		0.6			0.7	0.0		0.1	
Delay (s)		3.5	2.5		2.5			23.5	20.8		21.5	
Level of Service		A	A		A			C	C		C	
Approach Delay (s)		3.3			2.5			22.9			21.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



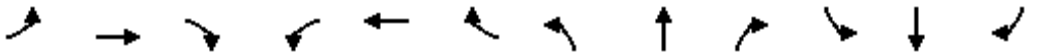
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	373	12	14	444	9	18	7	28	6	8	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2			3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.96	
Flt Protected		1.00			1.00			0.97	1.00		0.98	
Satd. Flow (prot)		1854			1855			1799	1583		1766	
Flt Permitted		1.00			0.99			0.80	1.00		0.91	
Satd. Flow (perm)		1850			1833			1481	1583		1631	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	414	13	16	493	10	20	8	31	7	9	6
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	28	0	5	0
Lane Group Flow (vph)	0	430	0	0	518	0	0	28	3	0	17	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		48.2			48.2			5.6	5.6		5.6	
Effective Green, g (s)		49.2			49.2			6.6	6.6		6.6	
Actuated g/C Ratio		0.79			0.79			0.11	0.11		0.11	
Clearance Time (s)		4.2			4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.5			2.5			2.0	2.0		2.0	
Lane Grp Cap (vph)		1468			1455			158	169		174	
v/s Ratio Prot												
v/s Ratio Perm		0.23			c0.28			c0.02	0.00		0.01	
v/c Ratio		0.29			0.36			0.18	0.02		0.10	
Uniform Delay, d1		1.7			1.8			25.2	24.8		25.0	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.5			0.7			0.2	0.0		0.1	
Delay (s)		2.2			2.5			25.4	24.8		25.1	
Level of Service		A			A			C	C		C	
Approach Delay (s)		2.2			2.5			25.1			25.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	4.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



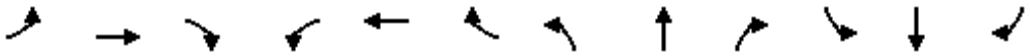
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	282	25	257	334	4	35	11	222	24	69	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0			3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.89			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1840		1770	1860			1644			1817	
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.74	
Satd. Flow (perm)	1770	1840		1770	1860			1583			1363	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	313	28	286	371	4	39	12	247	27	77	11
RTOR Reduction (vph)	0	5	0	0	0	0	0	206	0	0	7	0
Lane Group Flow (vph)	36	336	0	286	375	0	0	92	0	0	108	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.8	26.0		12.9	36.1			8.9			8.9	
Effective Green, g (s)	3.8	27.0		13.9	37.1			9.9			9.9	
Actuated g/C Ratio	0.06	0.45		0.23	0.62			0.17			0.17	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0			4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0			2.0	
Lane Grp Cap (vph)	112	828		410	1150			261			225	
v/s Ratio Prot	0.02	c0.18		c0.16	0.20							
v/s Ratio Perm								0.06			c0.08	
v/c Ratio	0.32	0.41		0.70	0.33			0.35			0.48	
Uniform Delay, d1	26.9	11.1		21.1	5.5			22.2			22.7	
Progression Factor	0.81	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.6	0.2		4.1	0.8			0.3			0.6	
Delay (s)	22.2	11.3		25.3	6.2			22.5			23.3	
Level of Service	C	B		C	A			C			C	
Approach Delay (s)		12.3			14.5			22.5			23.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	79	128	71	110	28	322	869	22	23	625	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	2.0	2.6	3.9	3.0	1.6	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1820	1583		1827	1583	1770	3539	1583	1770	3539	
Flt Permitted		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1820	1583		1827	1583	1770	3539	1583	1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	88	142	79	122	31	358	966	24	26	694	0
RTOR Reduction (vph)	0	0	118	0	0	23	0	0	13	0	0	0
Lane Group Flow (vph)	0	166	24	0	201	8	358	966	11	26	694	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)		15.6	15.6		16.2	16.2	23.4	44.3	44.3	5.6	28.5	
Effective Green, g (s)		16.6	16.6		17.2	17.2	24.4	46.6	45.3	6.6	30.8	
Actuated g/C Ratio		0.17	0.17		0.17	0.17	0.25	0.47	0.46	0.07	0.31	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.9	4.9	4.0	3.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.9	3.9	2.0	3.9	
Lane Grp Cap (vph)		306	267		319	276	438	1673	727	118	1105	
v/s Ratio Prot		c0.09			c0.11		c0.20	c0.27		0.01	c0.20	
v/s Ratio Perm			0.02			0.00			0.01			
v/c Ratio		0.54	0.09		0.63	0.03	0.82	0.58	0.02	0.22	0.63	
Uniform Delay, d1		37.5	34.6		37.7	33.8	35.0	18.9	14.5	43.6	29.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.1	0.1		3.0	0.0	10.7	0.6	0.0	0.3	1.3	
Delay (s)		38.6	34.7		40.7	33.8	45.7	19.4	14.5	43.9	30.3	
Level of Service		D	C		D	C	D	B	B	D	C	
Approach Delay (s)		36.8			39.8			26.3			30.8	
Approach LOS		D			D			C			C	

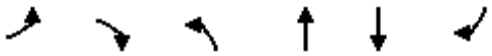
Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	519	0	0	364	140	0	0	0	167	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Lane Util. Factor	1.00	0.95			1.00	1.00				0.95	0.95	
Frpb, ped/bikes	1.00	1.00			1.00	1.00				1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00	1.00				1.00	1.00	
Frt	1.00	1.00			1.00	0.85				1.00	0.97	
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.96	
Satd. Flow (prot)	1770	3539			1863	1583				1681	1632	
Flt Permitted	0.95	1.00			1.00	1.00				0.76	0.78	
Satd. Flow (perm)	1770	3539			1863	1583				1340	1323	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	577	0	0	404	156	0	0	0	186	0	22
RTOR Reduction (vph)	0	0	0	0	0	106	0	0	0	0	11	0
Lane Group Flow (vph)	23	577	0	0	404	50	0	0	0	106	91	0
Confl. Peds. (#/hr)												20
Turn Type	Prot			Perm		Perm	Perm			Perm		
Protected Phases	7	4			8			5			6	
Permitted Phases				8		8	5			6		
Actuated Green, G (s)	2.2	23.8			17.6	17.6				11.7	11.7	
Effective Green, g (s)	2.2	23.8			17.6	17.6				11.7	11.7	
Actuated g/C Ratio	0.04	0.43			0.32	0.32				0.21	0.21	
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0	3.0	
Lane Grp Cap (vph)	71	1526			594	505				284	280	
v/s Ratio Prot	0.01	c0.16			c0.22							
v/s Ratio Perm						0.03				c0.08	0.07	
v/c Ratio	0.32	0.38			0.68	0.10				0.37	0.32	
Uniform Delay, d1	25.8	10.7			16.4	13.2				18.6	18.4	
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2	2.6	0.2			3.2	0.1				0.8	0.7	
Delay (s)	28.4	10.8			19.6	13.3				19.4	19.1	
Level of Service	C	B			B	B				B	B	
Approach Delay (s)		11.5			17.8			0.0			19.3	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	23.7
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	240	402	505	252	51	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.98	1.00	1.00
Satd. Flow (prot)	1770	1583	1681	1738	1863	1583
Flt Permitted	0.95	1.00	0.72	0.87	1.00	1.00
Satd. Flow (perm)	1770	1583	1274	1540	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	267	447	561	280	57	410
RTOR Reduction (vph)	0	307	0	0	0	211
Lane Group Flow (vph)	267	140	404	437	57	199
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	12.3	12.3	19.1	19.1	19.1	19.1
Effective Green, g (s)	12.3	12.3	19.1	19.1	19.1	19.1
Actuated g/C Ratio	0.31	0.31	0.48	0.48	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	553	494	618	747	903	767
v/s Ratio Prot	c0.15				0.03	
v/s Ratio Perm		0.09	c0.32	0.28		0.13
v/c Ratio	0.48	0.28	0.65	0.59	0.06	0.26
Uniform Delay, d1	11.0	10.2	7.7	7.3	5.4	6.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.3	2.5	1.2	0.0	0.2
Delay (s)	11.6	10.5	10.1	8.5	5.4	6.2
Level of Service	B	B	B	A	A	A
Approach Delay (s)	10.9			9.3	6.1	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	39.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection 13 **New Meadow Dr/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	128	121	94.7%	39.4	5.5	D
	Through						
	Right Turn	24	23	95.0%	17.0	10.8	B
	Subtotal	**152**	**144**	**94.7%**	**35.7**	**4.8**	**D**
EB	Left Turn	36	30	84.4%	46.7	12.9	D
	Through	1,180	1,114	94.4%	7.9	1.4	A
	Right Turn						
	Subtotal	**1,216**	**1,144**	**94.1%**	**8.9**	**1.3**	**A**
WB	Left Turn						
	Through	1,892	1,788	94.5%	25.7	7.8	C
	Right Turn	240	222	92.3%	19.6	5.3	B
	Subtotal	**2,132**	**2,010**	**94.3%**	**25.1**	**7.5**	**C**
Total		**3,500**	**3,298**	**94.2%**	**19.9**	**4.5**	**B**

Intersection 10 **Diamond Creek Blvd/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	8	8	105.0%	45.6	23.1	D
	Through	8	11	140.0%	43.5	14.6	D
	Right Turn	52	59	113.1%	6.2	1.4	A
	Subtotal	**68**	**78**	**115.3%**	**15.0**	**3.9**	**B**
SB	Left Turn	216	204	94.4%	33.6	3.6	C
	Through	28	23	82.9%	37.0	17.4	D
	Right Turn	16	18	112.5%	25.5	7.5	C
	Subtotal	**260**	**245**	**94.3%**	**33.3**	**4.4**	**C**
EB	Left Turn	28	25	88.6%	49.5	23.2	D
	Through	724	683	94.3%	16.5	4.1	B
	Right Turn	32	29	91.3%	3.0	0.9	A
	Subtotal	**784**	**737**	**94.0%**	**17.3**	**4.2**	**B**
WB	Left Turn	56	56	100.7%	51.3	11.2	D
	Through	872	800	91.7%	19.8	6.1	B
	Right Turn	296	286	96.8%	11.1	1.9	B
	Subtotal	**1,224**	**1,143**	**93.4%**	**19.3**	**4.5**	**B**
Total		**2,336**	**2,203**	**94.3%**	**20.0**	**3.3**	**B**

Intersection 15 **Foothills Blvd-Northridge Dr/Blue Oaks Blvd-Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	292	280	95.8%	56.5	6.3	E
	Through	56	55	97.9%	54.3	13.4	D
	Right Turn	616	642	104.2%	11.2	1.7	B
	Subtotal	**964**	**976**	**101.3%**	**26.4**	**2.7**	**C**
SB	Left Turn	412	403	97.9%	45.7	6.7	D
	Through	188	190	100.9%	45.6	4.7	D
	Right Turn	88	92	105.0%	17.5	3.3	B
	Subtotal	**688**	**685**	**99.6%**	**41.8**	**4.0**	**D**
EB	Left Turn	32	30	95.0%	43.7	14.6	D
	Through	1,128	1,070	94.9%	30.6	4.2	C
	Right Turn	148	148	100.0%	13.2	2.6	B
	Subtotal	**1,308**	**1,249**	**95.5%**	**28.8**	**3.8**	**C**
WB	Left Turn	256	250	97.7%	48.6	7.4	D
	Through	1,752	1,692	96.6%	19.7	3.5	B
	Right Turn	88	100	113.6%	1.8	0.6	A
	Subtotal	**2,096**	**2,042**	**97.4%**	**22.3**	**2.6**	**C**
Total		**5,056**	**4,953**	**98.0%**	**27.5**	**1.4**	**C**

Intersection 11 **Woodcreek Oaks Blvd/Blue Oaks Blvd-Ciruby Way** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	176	172	98.0%	44.0	8.1	D
	Through	128	112	87.8%	41.6	6.9	D
	Right Turn	220	203	92.2%	24.2	8.0	C
	Subtotal	**524**	**488**	**93.1%**	**35.3**	**5.8**	**D**
SB	Left Turn	220	223	101.3%	46.5	7.0	D
	Through	92	89	96.5%	40.6	8.2	D
	Right Turn	28	32	115.7%	8.0	3.1	A
	Subtotal	**340**	**344**	**101.2%**	**41.4**	**5.5**	**D**
EB	Left Turn	136	139	102.4%	46.4	3.5	D
	Through	772	724	93.8%	32.4	4.2	C
	Right Turn	76	74	97.9%	10.8	3.3	B
	Subtotal	**984**	**938**	**95.3%**	**32.8**	**3.8**	**C**
WB	Left Turn	528	520	98.4%	42.7	8.9	D
	Through	1,388	1,313	94.6%	29.2	4.6	C
	Right Turn						
	Subtotal	**1,916**	**1,832**	**95.6%**	**33.2**	**3.7**	**C**
Total		**3,764**	**3,602**	**95.7%**	**34.1**	**2.3**	**C**

Intersection 17 **Washington Blvd/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	384	384	100.1%	52.5	5.2	D
	Through						
	Right Turn	436	429	98.3%	54.0	11.1	D
	Subtotal	**820**	**813**	**99.2%**	**53.4**	**7.0**	**D**
SB	Left Turn	140	140	100.3%	48.2	5.3	D
	Through	256	262	102.5%	46.2	3.5	D
	Right Turn	272	281	103.4%	4.2	0.7	A
	Subtotal	**668**	**684**	**102.4%**	**29.3**	**2.5**	**C**
EB	Left Turn						
	Through	1,036	938	90.5%	37.9	4.4	D
	Right Turn	1,204	1,059	87.9%	50.0	7.3	D
	Subtotal	**2,240**	**1,997**	**89.1%**	**44.3**	**5.7**	**D**
WB	Left Turn	228	232	101.9%	45.9	4.6	D
	Through	684	637	93.2%	20.8	1.8	C
	Right Turn	412	395	95.9%	4.1	0.6	A
	Subtotal	**1,324**	**1,265**	**95.5%**	**20.2**	**1.5**	**C**
Total		**5,052**	**4,759**	**94.2%**	**37.3**	**2.4**	**D**

Intersection 12 **Woodmeadow Dr/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	12	6	53.3%	43.0	31.7	D
	Through						
	Right Turn	12	10	80.0%	17.0	14.3	B
	Subtotal	**24**	**16**	**66.7%**	**32.4**	**16.9**	**C**
EB	Left Turn	12	10	83.3%	75.4	44.3	E
	Through	1,204	1,187	98.6%	4.7	0.6	A
	Right Turn						
	Subtotal	**1,216**	**1,197**	**98.4%**	**5.3**	**0.6**	**A**
WB	Left Turn						
	Through	1,904	1,802	94.6%	13.8	3.9	B
	Right Turn	12	11	90.0%	10.5	6.9	B
	Subtotal	**1,916**	**1,813**	**94.6%**	**13.8**	**3.9**	**B**
Total		**3,156**	**3,026**	**95.9%**	**10.5**	**2.3**	**B**

Intersection 90 **Eureka Rd/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	420	417	99.2%	50.6	4.2	D
	Through	448	443	98.8%	51.6	6.4	D
	Right Turn	20	22	108.0%	23.7	11.0	C
	Subtotal	**888**	**881**	**99.2%**	**50.6**	**3.6**	**D**
SB	Left Turn	460	456	99.0%	49.1	4.1	D
	Through	496	484	97.7%	59.7	11.8	E
	Right Turn	140	130	93.1%	8.9	4.7	A
	Subtotal	**1,096**	**1,070**	**97.7%**	**49.1**	**7.5**	**D**
EB	Left Turn	176	173	98.4%	54.3	15.6	D
	Through	1,284	1,158	90.2%	33.7	8.8	C
	Right Turn	488	437	89.5%	30.2	4.8	C
	Subtotal	**1,948**	**1,768**	**90.8%**	**35.0**	**8.2**	**C**
WB	Left Turn	80	72	90.5%	63.4	11.0	E
	Through	1,424	1,418	99.6%	48.7	10.2	D
	Right Turn	460	434	94.3%	25.5	8.9	C
	Subtotal	**1,964**	**1,924**	**98.0%**	**44.0**	**9.6**	**D**
Total		**5,896**	**5,644**	**95.7%**	**43.2**	**4.2**	**D**

Intersection 105 **Rocky Ridge Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	336	323	96.1%	61.5	5.6	E
	Through	424	444	104.6%	49.1	7.3	D
	Right Turn	168	164	97.9%	24.1	5.7	C
	Subtotal	**928**	**931**	**100.3%**	**49.1**	**5.4**	**D**
SB	Left Turn	224	212	94.6%	59.0	8.2	E
	Through	620	638	102.9%	67.1	15.6	E
	Right Turn	132	124	93.6%	31.7	5.9	C
	Subtotal	**976**	**974**	**99.8%**	**61.0**	**12.4**	**E**
EB	Left Turn	200	183	91.6%	59.1	8.2	E
	Through	1,448	1,364	94.2%	56.7	10.4	E
	Right Turn	148	126	84.9%	38.9	9.2	D
	Subtotal	**1,796**	**1,673**	**93.1%**	**55.6**	**9.5**	**E**
WB	Left Turn	380	377	99.3%	61.7	14.5	E
	Through	1,712	1,624	94.8%	67.9	12.6	E
	Right Turn	132	123	93.0%	44.8	15.3	D
	Subtotal	**2,224**	**2,124**	**95.5%**	**65.3**	**11.8**	**E**
Total		**5,924**	**5,701**	**96.2%**	**59.1**	**5.3**	**E**

Intersection 102 **Santa Clara Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	40	33	83.0%	42.8	10.9	D
	Through	20	18	88.0%	42.2	13.5	D
	Right Turn	72	84	116.1%	20.4	3.5	C
	Subtotal	**132**	**134**	**101.8%**	**29.0**	**5.1**	**C**
SB	Left Turn	188	204	108.5%	34.3	3.0	C
	Through	56	54	95.7%	34.2	8.5	C
	Right Turn	184	176	95.9%	19.4	2.7	B
	Subtotal	**428**	**434**	**101.4%**	**28.2**	**2.6**	**C**
EB	Left Turn	152	140	92.1%	53.0	7.8	D
	Through	1,748	1,655	94.7%	29.1	2.9	C
	Right Turn	32	29	91.3%	33.8	8.2	C
	Subtotal	**1,932**	**1,824**	**94.4%**	**31.0**	**3.0**	**C**
WB	Left Turn	52	48	93.1%	51.5	15.6	D
	Through	1,936	1,738	89.8%	24.0	5.1	C
	Right Turn	40	36	90.0%	12.2	5.1	B
	Subtotal	**2,028**	**1,823**	**89.9%**	**24.5**	**5.3**	**C**
Total		**4,520**	**4,216**	**93.3%**	**27.8**	**3.7**	**C**

Intersection 103 **Sierra Gardens Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	156	149	95.4%	42.3	6.8	D
	Through	32	34	105.0%	39.1	10.5	D
	Right Turn	28	36	127.1%	30.3	7.2	C
	Subtotal	**216**	**218**	**100.9%**	**39.8**	**5.6**	**D**
SB	Left Turn	220	224	102.0%	35.6	3.7	D
	Through	28	40	142.9%	36.5	7.5	D
	Right Turn	36	34	93.3%	32.6	10.7	C
	Subtotal	**284**	**298**	**104.9%**	**35.3**	**3.7**	**D**
EB	Left Turn	48	44	91.7%	62.2	17.3	E
	Through	1,832	1,730	94.4%	51.3	10.4	D
	Right Turn	44	45	101.8%	58.7	10.9	E
	Subtotal	**1,924**	**1,819**	**94.5%**	**51.7**	**10.3**	**D**
WB	Left Turn	40	39	98.0%	49.6	9.2	D
	Through	2,008	1,843	91.8%	34.7	10.8	C
	Right Turn						
	Subtotal	**2,048**	**1,882**	**91.9%**	**35.0**	**10.2**	**C**
Total		**4,472**	**4,217**	**94.3%**	**42.5**	**5.9**	**D**

Intersection 101 **N. Sunrise Ave/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	348	384	110.2%	50.0	2.9	D
	Through	476	497	104.4%	47.7	4.2	D
	Right Turn	136	136	100.3%	45.2	5.3	D
	Subtotal	**960**	**1,017**	**105.9%**	**48.2**	**3.2**	**D**
SB	Left Turn	132	121	91.5%	81.6	28.4	F
	Through	584	583	99.9%	84.2	28.8	F
	Right Turn	528	506	95.8%	45.7	18.5	D
	Subtotal	**1,244**	**1,210**	**97.3%**	**67.9**	**23.9**	**E**
EB	Left Turn	376	384	102.1%	72.9	11.7	E
	Through	1,636	1,531	93.6%	49.6	6.2	D
	Right Turn	152	150	98.9%	12.7	1.9	B
	Subtotal	**2,164**	**2,065**	**95.4%**	**51.3**	**6.8**	**D**
WB	Left Turn	268	226	84.3%	63.0	7.9	E
	Through	1,856	1,564	84.3%	76.7	9.3	E
	Right Turn	96	86	90.0%	53.9	13.0	D
	Subtotal	**2,220**	**1,876**	**84.5%**	**74.0**	**8.8**	**E**
Total		**6,588**	**6,168**	**93.6%**	**60.8**	**5.7**	**E**

Intersection 104 **Target Dwy/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	104	111	106.5%	51.4	10.6	D
	Through	24	24	100.0%	39.0	14.9	D
	Right Turn	68	69	101.8%	21.7	8.6	C
	Subtotal	**196**	**204**	**104.1%**	**40.3**	**8.6**	**D**
SB	Left Turn	88	79	89.5%	48.7	9.4	D
	Through	12	6	53.3%	47.9	36.6	D
	Right Turn	108	103	95.2%	21.9	6.9	C
	Subtotal	**208**	**188**	**90.4%**	**34.6**	**8.0**	**C**
EB	Left Turn	160	148	92.3%	65.9	8.1	E
	Through	1,720	1,656	96.3%	28.5	5.1	C
	Right Turn	40	44	109.0%	29.7	8.4	C
	Subtotal	**1,920**	**1,847**	**96.2%**	**31.5**	**5.4**	**C**
WB	Left Turn	84	76	90.5%	52.4	11.1	D
	Through	1,904	1,808	95.0%	26.1	5.6	C
	Right Turn	12	14	120.0%	28.1	15.7	C
	Subtotal	**2,000**	**1,898**	**94.9%**	**27.1**	**5.5**	**C**
Total		**4,324**	**4,138**	**95.7%**	**30.0**	**4.5**	**C**

Intersection 98 **Harding Blvd/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	28	22	80.0%	43.6	11.5	D
	Through	28	26	92.9%	33.4	15.3	C
	Right Turn	84	86	101.9%	14.9	3.6	B
	Subtotal	**140**	**134**	**95.7%**	**24.2**	**4.0**	**C**
SB	Left Turn	784	735	93.7%	100.6	38.1	F
	Through	8	8	105.0%	110.8	51.1	F
	Right Turn	236	238	100.8%	50.0	23.8	D
	Subtotal	**1,028**	**981**	**95.4%**	**88.6**	**35.3**	**F**
EB	Left Turn	188	191	101.7%	52.7	5.7	D
	Through	936	927	99.1%	28.6	1.7	C
	Right Turn	8	10	125.0%	22.2	8.5	C
	Subtotal	**1,132**	**1,128**	**99.7%**	**32.7**	**1.8**	**C**
WB	Left Turn	60	62	104.0%	57.4	6.8	E
	Through	1,128	1,119	99.2%	41.0	8.7	D
	Right Turn	464	439	94.7%	21.5	7.7	C
	Subtotal	**1,652**	**1,620**	**98.1%**	**36.4**	**8.2**	**D**
Total		**3,952**	**3,864**	**97.8%**	**48.2**	**9.9**	**D**

Intersection 178 **Harding Blvd/Estates Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	72	72	100.6%	38.4	7.2	D
	Through	648	618	95.3%	9.0	2.7	A
	Right Turn						
	Subtotal	**720**	**690**	**95.8%**	**12.0**	**2.4**	**B**
SB	Left Turn	36	36	98.9%	45.9	9.1	D
	Through	972	977	100.5%	18.7	6.1	B
	Right Turn	124	144	115.8%	19.9	7.6	B
	Subtotal	**1,132**	**1,156**	**102.2%**	**19.7**	**6.3**	**B**
EB	Left Turn	244	259	106.1%	37.6	4.3	D
	Through	4	7	170.0%	32.1	22.2	C
	Right Turn	24	34	143.3%	41.6	17.3	D
	Subtotal	**272**	**300**	**110.3%**	**38.0**	**6.3**	**D**
WB	Left Turn	20	21	104.0%	45.1	10.8	D
	Through	8	9	115.0%	27.9	23.1	C
	Right Turn	20	20	100.0%	11.0	5.5	B
	Subtotal	**48**	**50**	**104.2%**	**27.4**	**4.5**	**C**
Total		**2,172**	**2,196**	**101.1%**	**19.9**	**4.3**	**B**

Intersection 179 **N Sunrise Ave/Roseville Square** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn	132	122	92.1%	37.2	6.4	D
	Through	536	512	95.6%	12.7	2.2	B
	Right Turn	8	11	135.0%	6.7	3.5	A
	Subtotal	**676**	**645**	**95.4%**	**17.3**	**2.4**	**B**
SB	Left Turn	28	26	92.9%	44.8	17.3	D
	Through	808	806	99.8%	27.2	14.0	C
	Right Turn	36	42	115.6%	25.0	13.6	C
	Subtotal	**872**	**874**	**100.2%**	**27.6**	**13.9**	**C**
EB	Left Turn	164	166	101.5%	39.1	6.1	D
	Through	20	24	120.0%	38.4	11.9	D
	Right Turn	108	106	97.8%	20.1	2.9	C
	Subtotal	**292**	**296**	**101.4%**	**32.5**	**4.2**	**C**
WB	Left Turn	112	100	89.3%	51.5	30.9	D
	Through	8	12	145.0%	40.7	26.2	D
	Right Turn	40	43	108.0%	4.3	1.2	A
	Subtotal	**160**	**155**	**96.8%**	**36.9**	**17.2**	**D**
Total		**2,000**	**1,970**	**98.5%**	**25.4**	**6.9**	**C**

Intersection 87 **N. Sunrise Ave./Eureka Rd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	480	475	99.0%	63.2	14.2	E
	Through	416	401	96.4%	40.4	6.6	D
	Right Turn	180	162	90.0%	4.5	0.7	A
	Subtotal	**1076**	**1038**	**96.5%**	**45.4**	**7.5**	**D**
SB	Left Turn	172	174	101.2%	55.1	7.3	E
	Through	428	449	104.9%	45.2	3.8	D
	Right Turn	316	342	108.4%	21.3	4.2	C
	Subtotal	**916**	**965**	**105.4%**	**38.6**	**2.9**	**D**
EB	Left Turn	216	198	91.7%	52.6	3.5	D
	Through	1056	1059	100.3%	29.2	6.2	C
	Right Turn	376	374	99.6%	11.2	1.5	B
	Subtotal	**1648**	**1631**	**99.0%**	**27.9**	**4.8**	**C**
WB	Left Turn	132	124	93.9%	55.9	5.1	E
	Through	1612	1644	102.0%	35.8	6.6	D
	Right Turn	160	172	107.8%	9.8	2.9	A
	Subtotal	**1904**	**1941**	**101.9%**	**34.8**	**6.3**	**C**
Total		**5544**	**5576**	**100.6%**	**35.4**	**3.6**	**D**

Intersection 85 **I-80 WB Ramps/Atlantic St** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	784	820	104.5%	1.6	0.3	A
	Subtotal	**784**	**820**	**104.5%**	**1.6**	**0.3**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	720	737	102.4%	15.0	1.4	B
	Right Turn	268	267	99.7%	11.4	2.5	B
	Subtotal	**988**	**1004**	**101.7%**	**14.1**	**1.6**	**B**
WB	Left Turn	744	724	97.3%	25.1	1.7	C
	Through	1016	1014	99.8%	3.1	0.3	A
	Right Turn						
	Subtotal	**1760**	**1738**	**98.7%**	**12.2**	**0.8**	**B**
Total		**3532**	**3562**	**100.8%**	**10.3**	**0.8**	**B**

Intersection 86 **I-80 EB Ramps/Eureka Rd-Atlantic St** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	196	210	107.1%	61.5	15.4	E
	Through	628	588	93.6%	50.1	7.4	D
	Right Turn	424	408	96.3%	7.3	1.0	A
	Subtotal	**1248**	**1206**	**96.6%**	**37.7**	**4.8**	**D**
SB	Left Turn	284	271	95.4%	55.8	4.4	E
	Through						
	Right Turn	580	540	93.0%	55.1	14.6	E
	Subtotal	**864**	**810**	**93.8%**	**55.2**	**9.6**	**E**
EB	Left Turn	208	218	105.0%	51.9	5.8	D
	Through	1040	1094	105.2%	30.0	3.4	C
	Right Turn	260	258	99.2%	9.0	0.7	A
	Subtotal	**1508**	**1570**	**104.1%**	**29.6**	**2.9**	**C**
WB	Left Turn						
	Through	1100	1136	103.3%	53.9	11.9	D
	Right Turn	1264	1215	96.1%	49.8	10.2	D
	Subtotal	**2364**	**2351**	**99.4%**	**51.9**	**10.7**	**D**
Total		**5984**	**5937**	**99.2%**	**43.5**	**4.2**	**D**

Intersection 88 **Rocky Ridge Dr/Eureka Rd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	384	374	97.4%	50.0	7.4	D
	Through	288	277	96.1%	26.7	4.4	C
	Right Turn	28	27	95.7%	3.0	0.6	A
	Subtotal	**700**	**678**	**96.8%**	**39.0**	**3.9**	**D**
SB	Left Turn	64	63	98.1%	49.9	6.4	D
	Through	300	286	95.3%	50.8	7.5	D
	Right Turn	128	136	106.3%	4.6	1.8	A
	Subtotal	**492**	**485**	**98.5%**	**37.8**	**7.1**	**D**
EB	Left Turn	124	128	102.9%	47.1	7.9	D
	Through	1004	1005	100.1%	26.7	4.0	C
	Right Turn	276	282	102.2%	2.8	0.4	A
	Subtotal	**1404**	**1414**	**100.7%**	**23.7**	**3.2**	**C**
WB	Left Turn	72	68	94.4%	55.1	6.7	E
	Through	1264	1257	99.5%	37.9	4.2	D
	Right Turn	40	41	103.0%	12.0	5.1	B
	Subtotal	**1376**	**1366**	**99.3%**	**38.0**	**4.1**	**D**
Total		**3972**	**3943**	**99.3%**	**33.1**	**2.9**	**C**

Intersection 77 **Roseville Pkwy-Roseville Rd/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	176	168	95.7%	71.6	7.6	E
	Through	560	538	96.0%	54.6	8.7	D
	Right Turn	52	52	100.0%	18.1	3.9	B
	Subtotal	**788**	**758**	**96.2%**	**55.9**	**5.8**	**E**
SB	Left Turn	736	640	87.0%	89.5	15.2	F
	Through	680	611	89.8%	49.2	8.1	D
	Right Turn	100	99	98.8%	9.9	3.9	A
	Subtotal	**1,516**	**1,350**	**89.0%**	**65.9**	**8.5**	**E**
EB	Left Turn	180	179	99.3%	55.9	7.0	E
	Through	1,556	1,547	99.4%	44.8	4.1	D
	Right Turn	200	208	104.0%	26.9	3.7	C
	Subtotal	**1,936**	**1,934**	**99.9%**	**43.9**	**3.6**	**D**
WB	Left Turn	108	107	98.9%	51.0	3.4	D
	Through	1,344	1,393	103.7%	46.4	8.6	D
	Right Turn	716	698	97.5%	21.8	7.6	C
	Subtotal	**2,168**	**2,198**	**101.4%**	**38.8**	**7.6**	**D**
Total		**6,408**	**6,240**	**97.4%**	**48.4**	**3.4**	**D**

Intersection 31 **Foothills Blvd/Pleasant Grove Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	368	338	92.0%	83.1	32.0	F
	Through	372	375	100.9%	46.9	4.4	D
	Right Turn	536	554	103.4%	9.1	1.2	A
	Subtotal	**1,276**	**1,268**	**99.3%**	**40.3**	**10.0**	**D**
SB	Left Turn	256	232	90.6%	64.1	6.5	E
	Through	720	693	96.3%	57.1	4.3	E
	Right Turn	164	160	97.8%	16.1	3.5	B
	Subtotal	**1,140**	**1,086**	**95.2%**	**52.5**	**4.7**	**D**
EB	Left Turn	132	116	87.9%	52.9	8.7	D
	Through	1,068	1,076	100.8%	50.5	7.3	D
	Right Turn	172	173	100.5%	13.7	4.8	B
	Subtotal	**1,372**	**1,365**	**99.5%**	**46.1**	**7.0**	**D**
WB	Left Turn	800	738	92.3%	50.0	7.4	D
	Through	1,424	1,299	91.2%	71.1	18.4	E
	Right Turn	112	106	94.6%	40.3	16.2	D
	Subtotal	**2,336**	**2,143**	**91.7%**	**62.3**	**11.4**	**E**
Total		**6,124**	**5,861**	**95.7%**	**52.0**	**5.8**	**D**

Intersection 174 **Galleria Blvd/Antelope Creek Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	124	123	99.0%	44.7	6.9	D
	Through	1,676	1,573	93.9%	41.5	6.9	D
	Right Turn	188	170	90.4%	2.3	0.4	A
	Subtotal	**1,988**	**1,866**	**93.9%**	**38.1**	**6.0**	**D**
SB	Left Turn	236	222	93.9%	53.7	5.8	D
	Through	1,108	1,104	99.6%	32.9	4.9	C
	Right Turn	144	138	95.6%	11.7	3.7	B
	Subtotal	**1,488**	**1,463**	**98.3%**	**34.0**	**4.6**	**C**
EB	Left Turn	384	369	96.1%	42.4	4.3	D
	Through	72	76	105.0%	39.6	9.6	D
	Right Turn	132	136	103.0%	6.5	0.4	A
	Subtotal	**588**	**581**	**98.8%**	**33.5**	**2.9**	**C**
WB	Left Turn	240	236	98.5%	44.5	5.0	D
	Through	92	92	100.0%	43.9	7.3	D
	Right Turn	388	402	103.7%	8.7	0.6	A
	Subtotal	**720**	**731**	**101.5%**	**24.7**	**2.4**	**C**
Total		**4,784**	**4,640**	**97.0%**	**34.0**	**2.9**	**C**

Intersection 68 **Galleria Blvd/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	508	492	96.9%	96.3	33.3	F
	Through	788	770	97.7%	65.2	10.1	E
	Right Turn	68	67	98.8%	5.6	1.2	A
	Subtotal	**1,364**	**1,329**	**97.4%**	**74.4**	**15.1**	**E**
SB	Left Turn	608	574	94.3%	68.2	11.2	E
	Through	608	570	93.7%	62.2	13.9	E
	Right Turn	356	344	96.7%	11.0	3.8	B
	Subtotal	**1,572**	**1,488**	**94.6%**	**52.8**	**8.2**	**D**
EB	Left Turn	464	436	93.9%	70.6	20.5	E
	Through	1,100	1,019	92.7%	33.6	8.0	C
	Right Turn	464	440	94.8%	2.3	0.4	A
	Subtotal	**2,028**	**1,895**	**93.4%**	**34.9**	**7.8**	**C**
WB	Left Turn	264	226	85.5%	70.0	12.2	E
	Through	2,172	1,954	90.0%	55.7	16.8	E
	Right Turn						
	Subtotal	**2,436**	**2,180**	**89.5%**	**57.1**	**15.5**	**E**
Total		**7,400**	**6,892**	**93.1%**	**53.3**	**5.9**	**D**

Intersection 38 **Pleasant Grove Blvd/Faiway Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	564	502	89.0%	52.2	6.8	D
	Through	964	908	94.1%	32.5	7.8	C
	Right Turn	504	466	92.5%	11.9	4.7	B
	Subtotal	**2,032**	**1,876**	**92.3%**	**32.7**	**6.0**	**C**
SB	Left Turn	104	100	96.2%	66.0	10.7	E
	Through	628	620	98.8%	54.9	8.7	D
	Right Turn	128	132	103.4%	18.0	2.9	B
	Subtotal	**860**	**853**	**99.2%**	**50.7**	**8.0**	**D**
EB	Left Turn	216	208	96.1%	58.7	5.2	E
	Through	408	403	98.7%	47.4	6.7	D
	Right Turn	352	347	98.5%	18.8	2.9	B
	Subtotal	**976**	**957**	**98.1%**	**39.5**	**3.5**	**D**
WB	Left Turn	596	568	95.3%	64.7	13.0	E
	Through	424	422	99.4%	35.6	4.1	D
	Right Turn	124	113	91.0%	10.2	2.8	B
	Subtotal	**1,144**	**1,102**	**96.4%**	**47.9**	**7.2**	**D**
Total		**5,012**	**4,788**	**95.5%**	**40.8**	**4.1**	**D**

Intersection 33 **Hallissy Dr/Pleasant Grove Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	48	45	94.2%	45.9	11.7	D
	Through	44	46	104.5%	34.4	6.5	C
	Right Turn	36	37	102.2%	11.4	10.2	B
	Subtotal	**128**	**128**	**100.0%**	**31.6**	**4.5**	**C**
SB	Left Turn	72	64	89.4%	62.1	25.4	E
	Through	4	2	60.0%	35.1	33.9	D
	Right Turn	20	25	124.0%	7.8	3.7	A
	Subtotal	**96**	**92**	**95.4%**	**47.1**	**18.8**	**D**
EB	Left Turn	20	22	112.0%	63.9	30.1	E
	Through	1,900	1,736	91.4%	37.4	23.6	D
	Right Turn	24	23	95.0%	17.4	14.5	B
	Subtotal	**1,944**	**1,781**	**91.6%**	**37.4**	**23.6**	**D**
WB	Left Turn	84	77	91.9%	35.5	6.8	D
	Through	2,024	1,818	89.8%	12.7	4.6	B
	Right Turn	100	87	87.2%	4.9	1.0	A
	Subtotal	**2,208**	**1,982**	**89.8%**	**13.2**	**4.3**	**B**
Total		**4,376**	**3,983**	**91.0%**	**25.0**	**11.6**	**C**

Intersection 34 **Roseville Pkwy/Pleasant Grove Blvd** **Signal**

SimTraffic Post-Processor **Amoruso Ranch Specific Plan EIR**
Average Results from 10 Runs **Existing Condition**
Volume and Delay by Movement **PM Peak Hour**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1,172	1,067	91.1%	76.5	13.2	E
	Through	544	520	95.7%	39.5	6.0	D
	Right Turn	824	784	95.1%	4.2	0.3	A
	Subtotal	**2,540**	**2,372**	**93.4%**	**44.6**	**6.6**	**D**
SB	Left Turn	196	199	101.4%	52.6	6.5	D
	Through	364	364	100.0%	70.0	50.5	E
	Right Turn	24	25	105.0%	8.9	3.9	A
	Subtotal	**584**	**588**	**100.7%**	**59.6**	**25.6**	**E**
EB	Left Turn	52	40	76.2%	144.9	77.8	F
	Through	1,060	830	78.3%	171.9	84.8	F
	Right Turn	796	578	72.6%	69.3	40.6	E
	Subtotal	**1,908**	**1,447**	**75.8%**	**129.6**	**64.3**	**F**
WB	Left Turn	680	587	86.4%	123.0	116.0	F
	Through	1,272	1,126	88.5%	41.1	8.7	D
	Right Turn	160	142	89.0%	6.2	1.3	A
	Subtotal	**2,112**	**1,855**	**87.8%**	**57.4**	**16.8**	**E**
Total		**7,144**	**6,262**	**87.6%**	**67.4**	**15.2**	**E**

Intersection 35 **Pleasant Grove Blvd/Highland Pointe Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	364	332	91.3%	50.5	8.4	D
	Through	1,692	1,460	86.3%	31.6	9.0	C
	Right Turn	4	5	120.0%	12.4	19.6	B
	Subtotal	**2,060**	**1,797**	**87.2%**	**35.0**	**7.8**	**C**
SB	Left Turn	140	126	90.0%	83.2	10.4	F
	Through	1,520	1,426	93.8%	56.6	14.5	E
	Right Turn	192	184	96.0%	12.5	4.1	B
	Subtotal	**1,852**	**1,737**	**93.8%**	**53.9**	**12.7**	**D**
EB	Left Turn	492	499	101.4%	65.2	13.3	E
	Through	4	3	80.0%	61.8	56.3	E
	Right Turn	360	353	98.0%	55.1	25.0	E
	Subtotal	**856**	**855**	**99.9%**	**60.8**	**18.0**	**E**
WB	Left Turn	160	166	103.8%	64.2	15.7	E
	Through	40	47	117.0%	49.5	8.4	D
	Right Turn	228	243	106.7%	16.3	5.2	B
	Subtotal	**428**	**456**	**106.5%**	**37.3**	**7.9**	**D**
Total		**5,196**	**4,845**	**93.2%**	**46.6**	**6.7**	**D**

Intersection 64 **Chase Dr/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn	52	45	86.9%	40.4	4.2	D
	Through						
	Right Turn	80	80	100.5%	1.0	0.3	A
	Subtotal	**132**	**126**	**95.2%**	**15.1**	**2.3**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,556	1,278	82.1%	11.1	2.4	B
	Right Turn	76	60	79.5%	4.7	0.8	A
	Subtotal	**1,632**	**1,338**	**82.0%**	**10.8**	**2.3**	**B**
WB	Left Turn	136	128	94.4%	50.8	7.5	D
	Through	2,020	1,902	94.1%	9.4	1.7	A
	Right Turn						
	Subtotal	**2,156**	**2,030**	**94.2%**	**12.0**	**1.8**	**B**
Total		**3,920**	**3,494**	**89.1%**	**11.6**	**1.8**	**B**

Intersection 69 **Creekside Ridge Dr/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	28	26	94.3%	51.4	10.3	D
	Through	12	12	96.7%	63.5	17.9	E
	Right Turn	24	20	85.0%	18.5	6.0	B
	Subtotal	**64**	**58**	**91.3%**	**42.2**	**6.7**	**D**
SB	Left Turn	392	384	98.1%	45.6	6.5	D
	Through	4	3	80.0%	31.0	28.1	C
	Right Turn	120	128	107.0%	27.4	4.6	C
	Subtotal	**516**	**516**	**100.0%**	**41.2**	**5.8**	**D**
EB	Left Turn	80	76	95.5%	40.4	8.9	D
	Through	1,624	1,527	94.0%	15.1	3.6	B
	Right Turn	16	13	82.5%	1.9	3.3	A
	Subtotal	**1,720**	**1,617**	**94.0%**	**16.2**	**3.6**	**B**
WB	Left Turn	44	40	90.9%	66.2	15.3	E
	Through	2,260	2,095	92.7%	50.2	13.8	D
	Right Turn	292	269	92.2%	43.6	21.8	D
	Subtotal	**2,596**	**2,404**	**92.6%**	**49.7**	**14.6**	**D**
Total		**4,896**	**4,595**	**93.9%**	**36.9**	**8.0**	**D**

Intersection 65 **Gibson Dr/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	4	1	20.0%	3.6	9.6	A
	Through						

NB	Right Turn	12	14	116.7%	9.2	4.0	A
	Subtotal	**16**	**15**	**92.5%**	**9.6**	**3.2**	**A**
SB	Left Turn	216	215	99.6%	47.5	6.2	D
	Through	4	2	60.0%	21.7	23.2	C
	Right Turn	36	29	80.0%	12.8	3.5	B
	Subtotal	**256**	**246**	**96.3%**	**43.3**	**6.0**	**D**
EB	Left Turn	12	10	86.7%	43.5	18.6	D
	Through	1,624	1,330	81.9%	9.1	2.5	A
	Right Turn						
	Subtotal	**1,636**	**1,340**	**81.9%**	**9.3**	**2.5**	**A**
WB	Left Turn	20	18	92.0%	55.9	13.9	E
	Through	2,116	2,012	95.1%	11.4	1.4	B
	Right Turn	188	173	91.9%	8.2	1.0	A
	Subtotal	**2,324**	**2,203**	**94.8%**	**11.5**	**1.4**	**B**
Total		**4,232**	**3,804**	**89.9%**	**12.8**	**1.2**	**B**

Intersection 71 **N Sunrise Ave/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	520	506	97.4%	56.6	11.0	E
	Through	76	82	107.4%	36.9	8.0	D
	Right Turn	228	232	101.6%	8.1	0.6	A
	Subtotal	**824**	**820**	**99.5%**	**41.2**	**7.3**	**D**
SB	Left Turn	60	61	102.0%	71.4	9.8	E
	Through	180	184	102.0%	55.4	6.7	E
	Right Turn	324	330	102.0%	31.0	4.5	C
	Subtotal	**564**	**575**	**102.0%**	**43.0**	**3.9**	**D**
EB	Left Turn	112	97	86.8%	63.3	6.7	E
	Through	1,748	1,614	92.3%	42.0	6.8	D
	Right Turn	324	311	95.9%	20.8	5.4	C
	Subtotal	**2,184**	**2,022**	**92.6%**	**39.8**	**6.2**	**D**
WB	Left Turn	188	190	101.1%	50.9	6.9	D
	Through	1,896	1,839	97.0%	33.8	4.1	C
	Right Turn	20	19	96.0%	7.4	3.0	A
	Subtotal	**2,104**	**2,048**	**97.3%**	**35.2**	**4.1**	**D**
Total		**5,676**	**5,464**	**96.3%**	**38.7**	**3.1**	**D**

Intersection 67 **Reserve Dr/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	324	306	94.3%	50.5	6.3	D
	Through	28	33	117.1%	49.6	10.8	D
	Right Turn	280	268	95.9%	8.0	1.2	A
	Subtotal	**632**	**607**	**96.0%**	**31.5**	**4.9**	**C**

SB	Left Turn	196	200	102.0%	49.7	10.7	D
	Through	24	18	76.7%	57.1	14.0	E
	Right Turn	88	83	94.5%	12.5	3.6	B
	Subtotal	**308**	**302**	**97.9%**	**39.6**	**6.7**	**D**
EB	Left Turn	36	32	88.9%	63.3	10.6	E
	Through	1,512	1,338	88.5%	45.2	6.2	D
	Right Turn	248	216	87.3%	17.8	4.8	B
	Subtotal	**1,796**	**1,586**	**88.3%**	**41.9**	**5.5**	**D**
WB	Left Turn	228	202	88.6%	74.6	32.8	E
	Through	1,824	1,631	89.4%	33.2	9.9	C
	Right Turn	196	168	85.5%	2.0	0.3	A
	Subtotal	**2,248**	**2,001**	**89.0%**	**34.7**	**10.1**	**C**
Total		**4,984**	**4,496**	**90.2%**	**37.1**	**5.9**	**D**

Intersection 72 **Secret Ravine Pkwy/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	124	120	97.1%	55.0	10.3	D
	Through						
	Right Turn	488	482	98.9%	29.3	5.7	C
	Subtotal	**612**	**603**	**98.5%**	**34.4**	**6.1**	**C**
EB	Left Turn	532	485	91.1%	45.6	7.5	D
	Through	1,528	1,407	92.1%	28.5	13.1	C
	Right Turn	4	2	60.0%	3.4	5.5	A
	Subtotal	**2,064**	**1,894**	**91.8%**	**32.9**	**10.5**	**C**
WB	Left Turn	12	10	86.7%	79.3	60.5	E
	Through	1,688	1,649	97.7%	31.8	7.7	C
	Right Turn	112	109	97.5%	16.0	3.0	B
	Subtotal	**1,812**	**1,768**	**97.6%**	**31.1**	**7.5**	**C**
Total		**4,488**	**4,266**	**95.0%**	**32.3**	**3.7**	**C**

Intersection 70 **Taylor Rd/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	556	551	99.1%	112.8	36.5	F
	Through	300	279	93.1%	76.8	14.5	E
	Right Turn	248	241	97.3%	51.2	15.5	D
	Subtotal	**1,104**	**1,071**	**97.0%**	**89.7**	**25.0**	**F**
SB	Left Turn	340	358	105.4%	74.8	9.1	E
	Through	152	146	96.3%	58.0	11.9	E

SB	Right Turn	144	132	91.7%	32.9	4.6	C
	Subtotal	**636**	**637**	**100.1%**	**62.3**	**7.1**	**E**
EB	Left Turn	180	166	92.4%	71.2	16.7	E
	Through	1,592	1,453	91.3%	44.7	8.3	D
	Right Turn	268	254	94.9%	23.6	8.2	C
	Subtotal	**2,040**	**1,874**	**91.9%**	**44.2**	**7.8**	**D**
WB	Left Turn	268	256	95.7%	67.7	12.3	E
	Through	1,896	1,814	95.7%	52.5	10.9	D
	Right Turn	576	558	96.9%	38.6	10.0	D
	Subtotal	**2,740**	**2,629**	**95.9%**	**51.1**	**10.7**	**D**
Total		**6,520**	**6,211**	**95.3%**	**57.0**	**6.5**	**E**

Intersection 66 **Roseville Pkwy/West Mall** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	40	33	82.0%	55.9	9.6	E
	Through	2,072	1,929	93.1%	29.7	11.5	C
	Right Turn	120	108	90.0%	8.4	1.0	A
	Subtotal	**2,232**	**2,070**	**92.7%**	**28.9**	**10.7**	**C**
SB	Left Turn	200	159	79.4%	50.9	10.3	D
	Through	1,628	1,403	86.2%	18.7	3.1	B
	Right Turn	24	21	88.3%	13.2	2.6	B
	Subtotal	**1,852**	**1,583**	**85.5%**	**21.9**	**3.0**	**C**
EB	Left Turn	24	29	120.0%	40.0	9.1	D
	Through						
	Right Turn	24	24	98.3%	11.5	4.9	B
	Subtotal	**48**	**52**	**109.2%**	**26.7**	**6.5**	**C**
WB	Left Turn	140	140	100.0%	34.9	4.2	C
	Through	4	2	40.0%	14.5	23.7	B
	Right Turn	228	234	102.8%	1.4	0.2	A
	Subtotal	**372**	**376**	**101.1%**	**14.0**	**1.7**	**B**
Total		**4,504**	**4,082**	**90.6%**	**24.7**	**6.0**	**C**

Intersection 73 **Roseville Pkwy/Alexandra Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1,748	1,680	96.1%	11.5	1.6	B
	Right Turn	128	124	96.6%	8.2	2.1	A
	Subtotal	**1,876**	**1,804**	**96.1%**	**11.3**	**1.7**	**B**
SB	Left Turn	128	113	88.1%	55.4	9.8	E
	Through	1,524	1,415	92.9%	18.3	6.2	B
	Right Turn						
	Subtotal	**1,652**	**1,528**	**92.5%**	**21.1**	**6.3**	**C**

EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	64	64	99.4%	45.2	5.9	D
	Through						
	Right Turn	64	74	116.3%	12.2	3.5	B
	Subtotal	**128**	**138**	**107.8%**	**28.0**	**4.9**	**C**
Total		**3,656**	**3,470**	**94.9%**	**16.3**	**3.5**	**B**

Intersection 75 **Roseville Pkwy/Orvietto Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	148	150	101.6%	45.5	12.9	D
	Through	1,524	1,464	96.0%	13.6	4.0	B
	Right Turn	4	2	50.0%	2.3	3.0	A
	Subtotal	**1,676**	**1,616**	**96.4%**	**16.7**	**3.8**	**B**
SB	Left Turn	20	18	92.0%	55.1	28.6	E
	Through	1,380	1,211	87.7%	41.8	36.8	D
	Right Turn	60	58	96.0%	25.6	32.3	C
	Subtotal	**1,460**	**1,287**	**88.1%**	**41.4**	**36.3**	**D**
EB	Left Turn	128	125	97.5%	43.9	8.1	D
	Through	24	28	118.3%	32.8	10.3	C
	Right Turn	204	204	100.0%	10.3	2.0	B
	Subtotal	**356**	**357**	**100.3%**	**24.1**	**5.0**	**C**
WB	Left Turn	4	5	120.0%	29.4	32.8	C
	Through	20	24	118.0%	46.5	11.9	D
	Right Turn						
	Subtotal	**24**	**28**	**118.3%**	**45.1**	**9.5**	**D**
Total		**3,516**	**3,288**	**93.5%**	**27.5**	**16.3**	**C**

Intersection 76 **Roseville Pkwy/Olympus Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	12	12	100.0%	59.1	13.5	E
	Through	1,312	1,265	96.4%	23.9	6.2	C
	Right Turn	128	133	104.1%	1.5	0.1	A
	Subtotal	**1,452**	**1,410**	**97.1%**	**22.0**	**5.1**	**C**
SB	Left Turn	260	229	88.2%	61.3	16.8	E
	Through	1,508	1,385	91.9%	27.6	10.7	C
	Right Turn	44	38	87.3%	21.4	8.0	C
	Subtotal	**1,812**	**1,653**	**91.2%**	**32.2**	**11.2**	**C**
EB	Left Turn	100	91	90.8%	46.0	6.3	D
	Through	52	47	90.8%	41.9	11.3	D

EB	Right Turn	108	105	97.4%	23.5	6.2	C
	Subtotal	**260**	**243**	**93.5%**	**35.5**	**4.3**	**D**
WB	Left Turn	40	44	109.0%	59.0	29.2	E
	Through	72	78	108.3%	39.1	4.2	D
	Right Turn	196	194	99.0%	7.0	0.5	A
	Subtotal	**308**	**316**	**102.5%**	**22.3**	**6.3**	**C**
Total		**3,832**	**3,622**	**94.5%**	**27.5**	**6.3**	**C**

Intersection 74 **Roseville Pkwy/Rocky Ridge Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	56	50	89.3%	54.1	6.4	D
	Through	1,596	1,530	95.9%	8.9	1.8	A
	Right Turn						
	Subtotal	**1,652**	**1,580**	**95.7%**	**10.4**	**2.0**	**B**
SB	Left Turn						
	Through	1,344	1,224	91.0%	19.4	7.7	B
	Right Turn	244	232	95.2%	14.3	5.5	B
	Subtotal	**1,588**	**1,456**	**91.7%**	**18.6**	**7.3**	**B**
EB	Left Turn	284	277	97.5%	44.6	4.7	D
	Through						
	Right Turn	112	113	100.7%	8.3	2.7	A
	Subtotal	**396**	**390**	**98.4%**	**34.0**	**3.7**	**C**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**3,636**	**3,426**	**94.2%**	**16.6**	**3.6**	**B**

Intersection 169 **Stanford Ranch Rd/Fairway Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	156	146	93.8%	44.2	5.9	D
	Through	1,048	967	92.3%	21.5	3.4	C
	Right Turn	212	198	93.4%	5.5	1.8	A
	Subtotal	**1,416**	**1,312**	**92.6%**	**21.6**	**2.2**	**C**
SB	Left Turn	72	66	91.1%	49.0	5.0	D
	Through	796	830	104.3%	28.2	4.3	C
	Right Turn	52	48	92.3%	13.0	4.4	B
	Subtotal	**920**	**944**	**102.6%**	**28.8**	**4.3**	**C**
EB	Left Turn	88	85	96.8%	46.2	6.3	D
	Through	252	243	96.5%	34.9	4.7	C
	Right Turn	220	230	104.7%	17.8	5.3	B
	Subtotal	**560**	**559**	**99.8%**	**29.5**	**2.9**	**C**

WB	Left Turn	188	186	99.1%	41.4	10.4	D
	Through	140	139	99.4%	34.2	5.9	C
	Right Turn	20	18	92.0%	18.2	6.6	B
	Subtotal	**348**	**344**	**98.9%**	**37.1**	**4.8**	**D**
Total		**3,244**	**3,158**	**97.4%**	**26.9**	**1.8**	**C**

Intersection 170 **Stanford Ranch Rd/5 Star Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	576	553	96.0%	38.6	8.7	D
	Through	1,320	1,248	94.5%	25.9	6.1	C
	Right Turn	304	290	95.3%	4.2	1.3	A
	Subtotal	**2,200**	**2,091**	**95.0%**	**26.2**	**5.0**	**C**
SB	Left Turn	60	59	98.0%	82.6	17.9	F
	Through	1,132	1,097	96.9%	67.8	13.9	E
	Right Turn	120	124	103.7%	17.8	4.7	B
	Subtotal	**1,312**	**1,280**	**97.6%**	**63.7**	**12.4**	**E**
EB	Left Turn	120	116	97.0%	62.0	15.6	E
	Through	104	92	88.5%	62.4	14.1	E
	Right Turn	272	265	97.5%	13.2	3.9	B
	Subtotal	**496**	**474**	**95.5%**	**35.1**	**7.0**	**D**
WB	Left Turn	328	346	105.4%	50.2	14.3	D
	Through	88	85	96.4%	41.4	7.5	D
	Right Turn	36	35	97.8%	22.8	8.6	C
	Subtotal	**452**	**466**	**103.0%**	**46.5**	**11.0**	**D**
Total		**4,460**	**4,310**	**96.6%**	**40.5**	**4.4**	**D**

Intersection 32 **Washington Blvd/Pleasant Grove Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	260	262	100.6%	51.9	4.6	D
	Through	396	401	101.2%	39.3	3.3	D
	Right Turn	356	353	99.1%	10.7	1.9	B
	Subtotal	**1,012**	**1,015**	**100.3%**	**32.7**	**2.6**	**C**
SB	Left Turn	172	144	83.7%	66.0	6.3	E
	Through	480	480	100.1%	54.8	5.4	D
	Right Turn	224	216	96.4%	30.1	3.7	C
	Subtotal	**876**	**840**	**95.9%**	**50.4**	**4.5**	**D**
EB	Left Turn	144	160	111.1%	49.4	10.7	D
	Through	1,460	1,470	100.7%	46.3	11.9	D
	Right Turn	164	184	112.0%	30.9	8.9	C
	Subtotal	**1,768**	**1,814**	**102.6%**	**45.0**	**10.8**	**D**
WB	Left Turn	316	280	88.7%	49.7	7.2	D
	Through	1,708	1,548	90.6%	36.6	4.0	D

WB	Right Turn	60	57	95.3%	12.1	3.5	B
	Subtotal	**2,084**	**1,885**	**90.5%**	**37.8**	**4.2**	**D**
Total		**5,740**	**5,555**	**96.8%**	**41.2**	**3.9**	**D**

Intersection 37 **SR 65 NB Ramps/Pleasant Grove** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	464	426	91.9%	48.4	3.3	D
	Through						
	Right Turn	536	527	98.3%	24.3	3.3	C
	Subtotal	**1,000**	**953**	**95.3%**	**35.0**	**2.8**	**C**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,576	1,474	93.5%	24.6	4.9	C
	Right Turn	436	409	93.9%	11.0	1.5	B
	Subtotal	**2,012**	**1,883**	**93.6%**	**21.7**	**4.2**	**C**
WB	Left Turn	192	205	106.9%	52.5	9.8	D
	Through	1,528	1,506	98.6%	7.3	1.6	A
	Right Turn						
	Subtotal	**1,720**	**1,711**	**99.5%**	**12.6**	**2.0**	**B**
Total		**4,732**	**4,548**	**96.1%**	**21.1**	**2.2**	**C**

Intersection 36 **SR 65 SB Ramps/Pleasant Grove Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	108	100	92.6%	46.2	30.9	D
	Through						
	Right Turn	328	302	92.1%	25.5	11.7	C
	Subtotal	**436**	**402**	**92.2%**	**30.6**	**16.1**	**C**
EB	Left Turn						
	Through	1,908	1,752	91.8%	6.5	1.7	A
	Right Turn	12	8	70.0%	6.2	8.0	A
	Subtotal	**1,920**	**1,760**	**91.7%**	**6.5**	**1.7**	**A**
WB	Left Turn						
	Through	1,684	1,667	99.0%	11.8	12.0	B
	Right Turn	308	307	99.7%	8.6	5.7	A
	Subtotal	**1,992**	**1,974**	**99.1%**	**11.3**	**11.1**	**B**
Total		**4,348**	**4,136**	**95.1%**	**11.1**	**7.2**	**B**

Intersection 171 **Galleria Blvd/SR 65 NB Ramps** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	724	680	93.9%	92.4	31.6	F
	Through	1,456	1,368	93.9%	8.0	2.8	A
	Right Turn						
	Subtotal	**2,180**	**2,047**	**93.9%**	**36.1**	**12.2**	**D**
SB	Left Turn						
	Through	1,892	1,778	94.0%	76.1	16.3	E
	Right Turn	68	54	79.4%	48.2	11.1	D
	Subtotal	**1,960**	**1,832**	**93.5%**	**75.3**	**16.0**	**E**
EB	Left Turn						
	Through						
	Right Turn	376	366	97.4%	2.7	0.9	A
	Subtotal	**376**	**366**	**97.4%**	**2.7**	**0.9**	**A**
WB	Left Turn						
	Through						
	Right Turn	744	743	99.9%	1.9	0.5	A
	Subtotal	**744**	**743**	**99.9%**	**1.9**	**0.5**	**A**
Total		**5,260**	**4,989**	**94.8%**	**42.9**	**7.1**	**D**

Intersection 172 **Galleria Blvd/SR 65 SB Ramps** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	2,040	1,866	91.5%	14.8	4.0	B
	Right Turn	584	538	92.1%	14.2	3.4	B
	Subtotal	**2,624**	**2,404**	**91.6%**	**14.7**	**3.4**	**B**
SB	Left Turn	696	662	95.1%	66.1	3.4	E
	Through	1,572	1,502	95.6%	25.2	2.5	C
	Right Turn						
	Subtotal	**2,268**	**2,164**	**95.4%**	**37.7**	**2.6**	**D**
EB	Left Turn						
	Through						
	Right Turn	524	509	97.1%	5.1	1.3	A
	Subtotal	**524**	**509**	**97.1%**	**5.1**	**1.3**	**A**
WB	Left Turn						
	Through	140	132	94.0%	1.7	1.6	A
	Right Turn						
	Subtotal	**140**	**132**	**94.0%**	**1.7**	**1.6**	**A**
Total		**5,556**	**5,208**	**93.7%**	**23.0**	**2.0**	**C**

Intersection 107 **Foothills Blvd/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	101	97	95.7%	49.3	3.6	D
	Right Turn	53	51	95.7%	26.4	5.6	C
	Subtotal	**154**	**147**	**95.7%**	**41.5**	**4.0**	**D**
SB	Left Turn	339	345	101.9%	42.4	5.7	D
	Through	89	112	126.1%	33.1	11.6	C
	Right Turn						
	Subtotal	**428**	**458**	**106.9%**	**39.9**	**5.4**	**D**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	95	86	90.2%	65.0	9.2	E
	Through						
	Right Turn	409	360	88.0%	34.2	7.2	C
	Subtotal	**504**	**446**	**88.4%**	**40.1**	**6.9**	**D**
Total		**1,086**	**1,051**	**96.7%**	**40.2**	**4.0**	**D**

Intersection 110 **Melody Ln/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	59	60	102.0%	15.4	8.9	B
	Subtotal	**59**	**60**	**102.0%**	**15.4**	**8.9**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	403	382	94.9%	12.6	4.3	B
	Right Turn	2	2	100.0%	10.8	6.7	B
	Subtotal	**405**	**384**	**94.9%**	**12.6**	**4.3**	**B**
WB	Left Turn	63	61	96.5%	18.8	2.3	B
	Through	477	434	91.0%	2.9	0.1	A
	Right Turn						
	Subtotal	**540**	**495**	**91.7%**	**4.9**	**0.4**	**A**
Total		**1,004**	**940**	**93.6%**	**8.7**	**2.4**	**A**

Intersection 109 **Northridge Dr/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1	0	40.0%	8.8	12.7	A
	Through						
	Right Turn	4	4	90.0%	13.5	9.8	B
	Subtotal	**5**	**4**	**80.0%**	**16.7**	**12.0**	**B**
SB	Left Turn	9	9	97.8%	64.0	6.5	E
	Through						
	Right Turn	3	3	90.0%	52.2	18.2	D
	Subtotal	**12**	**12**	**95.8%**	**61.0**	**6.5**	**E**
EB	Left Turn	3	6	193.3%	51.7	8.4	D
	Through	393	380	96.6%	6.0	1.5	A
	Right Turn						
	Subtotal	**396**	**385**	**97.3%**	**6.7**	**1.3**	**A**
WB	Left Turn	4	3	80.0%	55.0	20.1	D
	Through	460	415	90.3%	3.8	2.2	A
	Right Turn	2	2	100.0%	4.8	6.2	A
	Subtotal	**466**	**421**	**90.3%**	**4.2**	**2.2**	**A**
Total		**879**	**821**	**93.4%**	**6.2**	**1.6**	**A**

Intersection 111 **Riverside Ave/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	271	242	89.2%	94.3	14.3	F
	Through	146	141	96.6%	30.6	2.0	C
	Right Turn	49	50	101.0%	12.4	2.9	B
	Subtotal	**466**	**432**	**92.7%**	**64.3**	**8.4**	**E**
SB	Left Turn	41	44	107.1%	65.6	7.1	E
	Through	133	133	99.8%	75.5	14.8	E
	Right Turn	39	39	99.7%	51.3	9.3	D
	Subtotal	**213**	**216**	**101.2%**	**69.3**	**10.9**	**E**
EB	Left Turn	43	41	96.3%	57.8	10.8	E
	Through	183	167	91.1%	60.1	12.3	E
	Right Turn	237	226	95.4%	3.6	0.3	A
	Subtotal	**463**	**434**	**93.8%**	**30.7**	**7.1**	**C**
WB	Left Turn	98	97	99.4%	88.9	23.6	F
	Through	252	240	95.1%	81.9	25.7	F
	Right Turn						
	Subtotal	**350**	**337**	**96.3%**	**84.1**	**22.9**	**F**
Total		**1,492**	**1,419**	**95.1%**	**59.5**	**4.8**	**E**

Intersection 108 **Vernon St/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	16	13	81.3%	53.0	9.8	D
	Through	17	18	102.9%	45.8	8.2	D
	Right Turn	33	32	98.2%	17.8	3.8	B
	Subtotal	**66**	**63**	**95.3%**	**32.1**	**2.7**	**C**
SB	Left Turn	23	23	101.7%	58.5	6.7	E
	Through	27	25	94.1%	53.3	8.6	D
	Right Turn	89	85	95.2%	43.4	3.8	D
	Subtotal	**139**	**134**	**96.0%**	**48.0**	**4.3**	**D**
EB	Left Turn	36	35	96.1%	63.5	14.2	E
	Through	348	346	99.3%	32.1	10.0	C
	Right Turn	8	8	95.0%	27.9	13.1	C
	Subtotal	**392**	**388**	**99.0%**	**34.8**	**10.1**	**C**
WB	Left Turn	22	17	78.2%	49.7	6.4	D
	Through	398	367	92.3%	28.0	5.2	C
	Right Turn	11	10	88.2%	14.8	4.6	B
	Subtotal	**431**	**394**	**91.5%**	**28.6**	**5.2**	**C**
Total		**1,028**	**979**	**95.2%**	**33.8**	**5.7**	**C**

Intersection 203 **Riverside Ave/I-80 WB Ramps** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	387	366	94.5%	29.8	12.9	C
	Right Turn	57	55	96.5%	9.4	3.6	A
	Subtotal	**444**	**421**	**94.7%**	**27.1**	**11.6**	**C**
SB	Left Turn						
	Through	217	209	96.1%	26.6	4.4	C
	Right Turn	252	247	98.2%	15.8	3.7	B
	Subtotal	**469**	**456**	**97.2%**	**20.7**	**3.6**	**C**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	132	133	101.0%	43.9	17.8	D
	Through						
	Right Turn	58	59	101.6%	12.7	4.4	B
	Subtotal	**190**	**192**	**101.2%**	**34.2**	**11.8**	**C**
Total		**1,103**	**1,069**	**96.9%**	**25.7**	**5.7**	**C**

Intersection 204 **Riverside Ave/I-80 EB Ramps** **Signal**

SimTraffic Post-Processor **Amoruso EIR**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **PM Peak Hour**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	277	271	97.7%	30.3	3.8	C
	Right Turn						
	Subtotal	**277**	**271**	**97.7%**	**30.3**	**3.8**	**C**
SB	Left Turn	23	24	103.9%	65.7	6.1	E
	Through	262	254	96.9%	30.8	4.3	C
	Right Turn						
	Subtotal	**285**	**278**	**97.4%**	**33.8**	**4.6**	**C**
EB	Left Turn						
	Through	106	103	96.8%	41.5	3.6	D
	Right Turn	52	48	93.1%	21.7	4.5	C
	Subtotal	**158**	**151**	**95.6%**	**35.2**	**3.3**	**D**
WB	Left Turn	42	44	104.5%	46.7	6.0	D
	Through						
	Right Turn	52	49	95.0%	5.1	3.0	A
	Subtotal	**94**	**93**	**99.3%**	**25.0**	**4.6**	**C**
Total		**814**	**793**	**97.4%**	**31.8**	**2.8**	**C**

INTERSECTIONS OUTSIDE OF ROSEVILLE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	201	4	52	635	19	6	5	22	13	1	1
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	212	4	57	690	21	6	5	23	14	1	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	218	767	35	16
Volume Left (vph)	2	57	6	14
Volume Right (vph)	4	21	23	1
Hadj (s)	0.02	0.03	-0.33	0.17
Departure Headway (s)	4.9	4.3	5.8	6.3
Degree Utilization, x	0.30	0.93	0.06	0.03
Capacity (veh/h)	725	822	591	535
Control Delay (s)	9.9	36.4	9.1	9.5
Approach Delay (s)	9.9	36.4	9.1	9.5
Approach LOS	A	E	A	A

Intersection Summary				
Delay		29.5		
Level of Service		D		
Intersection Capacity Utilization		61.7%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	9	145	735	60	39	11
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	10	159	808	66	43	12

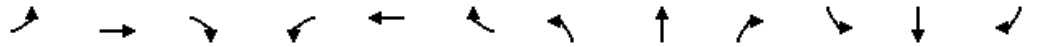
Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total (vph)	169	808	66	55
Volume Left (vph)	10	0	0	43
Volume Right (vph)	0	0	66	12
Hadj (s)	0.05	0.03	-0.67	0.06
Departure Headway (s)	5.0	4.9	4.2	6.1
Degree Utilization, x	0.24	1.0	0.08	0.09
Capacity (veh/h)	707	733	854	572
Control Delay (s)	9.6	79.8	6.3	9.7
Approach Delay (s)	9.6	74.2		9.7
Approach LOS	A	F		A

Intersection Summary			
Delay	61.0		
Level of Service	F		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	144	36	43	729	65	27
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	160	40	48	810	72	30

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total (vph)	160	40	858	102
Volume Left (vph)	0	0	48	72
Volume Right (vph)	0	40	0	30
Hadj (s)	0.03	-0.67	0.05	0.00
Departure Headway (s)	5.5	4.8	4.6	6.1
Degree Utilization, x	0.24	0.05	1.0	0.17
Capacity (veh/h)	647	735	765	572
Control Delay (s)	9.0	6.8	84.8	10.4
Approach Delay (s)	8.6		84.8	10.4
Approach LOS	A		F	B

Intersection Summary			
Delay	65.1		
Level of Service	F		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	1	0	241	1	17	1	192	290	9	335	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	1	0	305	1	22	1	243	367	11	424	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	1	306	22	611	435
Volume Left (vph)	0	305	0	1	11
Volume Right (vph)	0	0	22	367	0
Hadj (s)	0.03	0.53	-0.67	-0.33	0.04
Departure Headway (s)	8.5	7.9	6.7	5.7	6.3
Degree Utilization, x	0.00	0.68	0.04	0.97	0.77
Capacity (veh/h)	383	448	527	623	560
Control Delay (s)	11.5	24.7	8.8	53.5	27.2
Approach Delay (s)	11.5	23.7		53.5	27.2
Approach LOS	B	C		F	D

Intersection Summary				
Delay	38.0			
Level of Service	E			
Intersection Capacity Utilization	55.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	67	322	7	34	81	80	4	7	15	110	44	58
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	79	379	8	40	95	94	5	8	18	129	52	68

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	466	229	31	249
Volume Left (vph)	79	40	5	129
Volume Right (vph)	8	94	18	68
Hadj (s)	0.06	-0.18	-0.28	-0.03
Departure Headway (s)	5.2	5.3	6.0	5.7
Degree Utilization, x	0.67	0.34	0.05	0.40
Capacity (veh/h)	675	638	487	575
Control Delay (s)	17.8	10.9	9.3	12.5
Approach Delay (s)	17.8	10.9	9.3	12.5
Approach LOS	C	B	A	B

Intersection Summary				
Delay		14.6		
Level of Service		B		
Intersection Capacity Utilization		53.3%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	36	39	51	190	153	95
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	42	46	60	224	180	112
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	579	236	292			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	579	236	292			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	94	95			
cM capacity (veh/h)	454	803	1270			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	88	284	292
Volume Left	42	60	0
Volume Right	46	0	112
cSH	587	1270	1700
Volume to Capacity	0.15	0.05	0.17
Queue Length 95th (ft)	13	4	0
Control Delay (s)	12.2	2.0	0.0
Lane LOS	B	A	
Approach Delay (s)	12.2	2.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	152	0	11	0	71	177	16	97	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	0	162	0	12	0	76	188	17	103	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	173	264	120
Volume Left (vph)	0	162	0	17
Volume Right (vph)	0	12	188	0
Hadj (s)	0.00	0.18	-0.39	0.06
Departure Headway (s)	5.0	4.9	4.1	4.7
Degree Utilization, x	0.00	0.24	0.30	0.16
Capacity (veh/h)	655	680	839	722
Control Delay (s)	8.0	9.5	8.9	8.6
Approach Delay (s)	0.0	9.5	8.9	8.6
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.0		
Level of Service	A		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

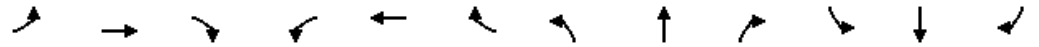
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	138	70	9	165	60	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	145	74	9	174	63	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			219		338	145
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			219		338	145
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		90	97
cM capacity (veh/h)			1350		653	902

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	145	74	9	174	63	29
Volume Left	0	0	9	0	63	0
Volume Right	0	74	0	0	0	29
cSH	1700	1700	1350	1700	653	902
Volume to Capacity	0.09	0.04	0.01	0.10	0.10	0.03
Queue Length 95th (ft)	0	0	1	0	8	3
Control Delay (s)	0.0	0.0	7.7	0.0	11.1	9.1
Lane LOS			A		B	A
Approach Delay (s)	0.0		0.4		10.5	
Approach LOS					B	

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	601	16	0	673	258	332	0	979	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Lane Util. Factor		0.91	1.00		0.91	1.00	0.95	0.95	0.88			
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1681	1681	2787			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1681	1681	2787			
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	683	18	0	765	293	377	0	1112	0	0	0
RTOR Reduction (vph)	0	0	14	0	0	220	0	0	753	0	0	0
Lane Group Flow (vph)	0	683	4	0	765	73	188	189	359	0	0	0
Turn Type		NA	Perm		NA	Perm	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			2			6			8			
Actuated Green, G (s)		13.2	13.2		14.7	14.7	15.6	15.6	15.6			
Effective Green, g (s)		13.2	13.2		14.7	14.7	15.6	15.6	15.6			
Actuated g/C Ratio		0.22	0.22		0.25	0.25	0.26	0.26	0.26			
Clearance Time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Vehicle Extension (s)		1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Lane Grp Cap (vph)		1130	351		1258	391	441	441	731			
v/s Ratio Prot		c0.13			c0.15		0.11	0.11				
v/s Ratio Perm			0.00			0.05			c0.13			
v/c Ratio		0.60	0.01		0.61	0.19	0.43	0.43	0.49			
Uniform Delay, d1		20.8	18.0		19.8	17.6	18.2	18.2	18.5			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.6	0.0		0.6	0.1	0.2	0.2	0.2			
Delay (s)		21.4	18.0		20.4	17.7	18.4	18.4	18.7			
Level of Service		C	B		C	B	B	B	B			
Approach Delay (s)		21.3			19.6			18.7			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	15.9
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	✣	↱
Volume (vph)	0	144	185	0	532	478	0	0	0	477	0	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1583		5085	1583				1681	1609	1504
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1583		5085	1583				1681	1609	1504
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	162	208	0	598	537	0	0	0	536	0	93
RTOR Reduction (vph)	0	0	171	0	0	390	0	0	0	0	45	62
Lane Group Flow (vph)	0	162	37	0	598	147	0	0	0	273	227	22
Turn Type		NA	Perm		NA	Perm				Split	NA	Perm
Protected Phases		2			6					4	4	
Permitted Phases			2			6						4
Actuated Green, G (s)		9.5	9.5		14.5	14.5				13.9	13.9	13.9
Effective Green, g (s)		9.5	9.5		14.5	14.5				13.9	13.9	13.9
Actuated g/C Ratio		0.18	0.18		0.27	0.27				0.26	0.26	0.26
Clearance Time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Vehicle Extension (s)		1.0	1.0		1.0	1.0				1.0	1.0	1.0
Lane Grp Cap (vph)		909	283		1388	432				440	421	393
v/s Ratio Prot		c0.03			c0.12					c0.16	0.14	
v/s Ratio Perm			0.02			0.09						0.01
v/c Ratio		0.18	0.13		0.43	0.34				0.62	0.54	0.06
Uniform Delay, d1		18.5	18.3		15.9	15.5				17.3	16.8	14.7
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.0	0.1		0.1	0.2				2.0	0.7	0.0
Delay (s)		18.5	18.4		16.0	15.6				19.2	17.5	14.7
Level of Service		B	B		B	B				B	B	B
Approach Delay (s)		18.5			15.8			0.0			17.9	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	15.2
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	571	13	2	590	122	14	48	4	384	46	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.41	1.00	1.00	0.42	1.00	1.00	0.73	1.00	1.00	0.72	1.00	1.00
Satd. Flow (perm)	766	3539	1583	1515	3539	1583	2620	1863	1583	2613	1863	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	614	14	2	634	131	15	52	4	413	49	39
RTOR Reduction (vph)	0	0	9	0	0	84	0	0	3	0	0	26
Lane Group Flow (vph)	32	614	5	2	634	47	15	52	1	413	49	13
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	11.5	11.5	11.5	11.5	11.5	11.5	10.8	10.8	10.8	10.8	10.8	10.8
Effective Green, g (s)	11.5	11.5	11.5	11.5	11.5	11.5	10.8	10.8	10.8	10.8	10.8	10.8
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	0.36	0.33	0.33	0.33	0.33	0.33	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	272	1260	563	539	1260	563	876	622	529	873	622	529
v/s Ratio Prot		0.17			c0.18			0.03			0.03	
v/s Ratio Perm	0.04		0.00	0.00		0.03	0.01		0.00	c0.16		0.01
v/c Ratio	0.12	0.49	0.01	0.00	0.50	0.08	0.02	0.08	0.00	0.47	0.08	0.02
Uniform Delay, d1	7.0	8.1	6.7	6.7	8.2	6.9	7.2	7.4	7.2	8.5	7.3	7.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	0.0	0.0	0.3	0.1	0.0	0.1	0.0	0.4	0.1	0.0
Delay (s)	7.2	8.4	6.7	6.7	8.5	7.0	7.2	7.4	7.2	8.9	7.4	7.2
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		8.3			8.2			7.4			8.6	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	32.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	0	13	89	12	6	61
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	16	113	15	8	77

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	16	128	85
Volume Left (vph)	0	113	8
Volume Right (vph)	16	0	77
Hadj (s)	-0.57	0.21	-0.49
Departure Headway (s)	3.6	4.3	3.7
Degree Utilization, x	0.02	0.15	0.09
Capacity (veh/h)	955	820	923
Control Delay (s)	6.7	8.1	7.1
Approach Delay (s)	6.7	8.1	7.1
Approach LOS	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR
Vol, veh/h	0	15	172	10	79	86	0	144	8
Peak Hour Factor	0.95	0.83	0.83	0.95	0.83	0.83	0.95	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	18	207	11	95	104	0	173	10
Number of Lanes	0	1	2	0	2	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	3	3	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	3
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	3
HCM Control Delay	8.3	8.6	11.1
HCM LOS	A	A	B

Lane	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	100%	100%	100%	0%	0%	0%
Vol Right, %	0%	0%	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	86	86	36	53	86	144	8
LT Vol	0	86	86	36	53	0	0	0
Through Vol	0	0	0	0	0	86	0	8
RT Vol	15	0	0	0	0	0	144	0
Lane Flow Rate	18	104	104	42	63	104	173	10
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.031	0.16	0.11	0.065	0.098	0.14	0.292	0.013
Departure Headway (Hd)	6.078	5.574	3.826	5.568	5.568	4.862	6.051	4.854
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	586	640	926	639	640	732	590	730
Service Time	3.844	3.34	1.591	3.339	3.339	2.633	3.832	2.635
HCM Lane V/C Ratio	0.031	0.163	0.112	0.066	0.098	0.142	0.293	0.014
HCM Control Delay	9	9.4	7.1	8.7	9	8.4	11.3	7.7
HCM Lane LOS	A	A	A	A	A	A	B	A
HCM 95th-tile Q	0.1	0.6	0.4	0.2	0.3	0.5	1.2	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	16	38	680	193	35	42	5	268	474	41	8	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0	5.0		5.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		1.00	0.91	1.00		0.97
Frt	1.00	0.86		1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00		0.95	0.97	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	1770	1598		1681	1710	1583		1770	5085	1583		3433
Flt Permitted	0.95	1.00		0.95	0.18	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	1770	1598		1681	315	1583		1770	5085	1583		3433
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	18	43	764	217	39	47	6	301	533	46	9	64
RTOR Reduction (vph)	0	258	0	0	0	25	0	0	0	36	0	0
Lane Group Flow (vph)	18	549	0	128	128	22	0	307	533	10	0	73
Turn Type	Prot	NA		Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases						8				2		
Actuated Green, G (s)	1.5	32.1		10.0	47.1	40.6		15.0	19.7	19.7		6.0
Effective Green, g (s)	1.5	32.1		10.0	47.1	40.6		15.0	19.7	19.7		6.0
Actuated g/C Ratio	0.02	0.37		0.11	0.54	0.46		0.17	0.22	0.22		0.07
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	30	584		191	327	732		302	1140	355		234
v/s Ratio Prot	0.01	c0.34		c0.08	0.04			c0.17	c0.10			0.02
v/s Ratio Perm					0.16	0.01				0.01		
v/c Ratio	0.60	0.94		0.67	0.39	0.03		1.02	0.47	0.03		0.31
Uniform Delay, d1	42.9	26.9		37.3	11.9	12.9		36.4	29.5	26.6		38.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	28.3	23.1		8.9	0.8	0.0		56.1	0.3	0.0		0.8
Delay (s)	71.2	50.0		46.2	12.7	12.9		92.5	29.8	26.6		39.7
Level of Service	E	D		D	B	B		F	C	C		D
Approach Delay (s)		50.4			26.9				51.4			
Approach LOS		D			C				D			

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations	↑↑↑	↱
Volume (vph)	218	4
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	5.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.89	0.89
Adj. Flow (vph)	245	4
RTOR Reduction (vph)	0	4
Lane Group Flow (vph)	245	0
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	10.7	10.7
Effective Green, g (s)	10.7	10.7
Actuated g/C Ratio	0.12	0.12
Clearance Time (s)	5.0	5.0
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	619	192
v/s Ratio Prot	0.05	
v/s Ratio Perm		0.00
v/c Ratio	0.40	0.00
Uniform Delay, d1	35.6	33.9
Progression Factor	1.00	1.00
Incremental Delay, d2	0.4	0.0
Delay (s)	36.0	33.9
Level of Service	D	C
Approach Delay (s)	36.8	
Approach LOS	D	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	255	61	34	129	16	222	208	71	53	189	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	48	315	75	42	159	20	274	257	88	65	233	22
RTOR Reduction (vph)	0	0	61	0	0	16	0	0	59	0	0	17
Lane Group Flow (vph)	48	315	14	42	159	4	274	257	29	65	233	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.7	10.3	10.3	2.2	9.8	9.8	9.4	17.4	17.4	3.8	11.8	11.8
Effective Green, g (s)	2.7	10.3	10.3	2.2	9.8	9.8	9.4	17.4	17.4	3.8	11.8	11.8
Actuated g/C Ratio	0.05	0.19	0.19	0.04	0.18	0.18	0.18	0.32	0.32	0.07	0.22	0.22
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	88	678	303	140	645	288	600	1146	512	242	777	347
v/s Ratio Prot	c0.03	c0.09		0.01	0.04		c0.08	0.07		0.02	c0.07	
v/s Ratio Perm			0.01			0.00			0.02			0.00
v/c Ratio	0.55	0.46	0.05	0.30	0.25	0.01	0.46	0.22	0.06	0.27	0.30	0.01
Uniform Delay, d1	24.9	19.3	17.7	25.0	18.8	18.0	19.9	13.2	12.5	23.6	17.5	16.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	0.5	0.1	1.2	0.2	0.0	0.6	0.1	0.0	0.6	0.2	0.0
Delay (s)	31.6	19.8	17.8	26.2	19.0	18.0	20.4	13.3	12.5	24.2	17.7	16.4
Level of Service	C	B	B	C	B	B	C	B	B	C	B	B
Approach Delay (s)		20.7			20.3			16.4			19.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	30	62	229	81	353	543	60	48	150	264	47	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	39	82	301	107	464	714	79	63	197	347	62	209
RTOR Reduction (vph)	0	0	0	88	0	0	51	0	0	279	0	0
Lane Group Flow (vph)	0	121	301	19	464	714	28	63	197	68	62	209
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	7	4		3	8		5	2		1	6
Permitted Phases				4			8			2		
Actuated Green, G (s)		10.9	15.6	15.6	26.4	31.1	31.1	6.6	17.2	17.2	6.5	17.1
Effective Green, g (s)		10.9	15.6	15.6	26.4	31.1	31.1	6.6	17.2	17.2	6.5	17.1
Actuated g/C Ratio		0.12	0.18	0.18	0.30	0.36	0.36	0.08	0.20	0.20	0.07	0.20
Clearance Time (s)		5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1
Vehicle Extension (s)		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Grp Cap (vph)		221	633	283	535	1262	564	133	367	312	131	365
v/s Ratio Prot		0.07	0.09		c0.26	c0.20		c0.04	0.11		0.04	c0.11
v/s Ratio Perm				0.01			0.02			0.04		
v/c Ratio		0.55	0.48	0.07	0.87	0.57	0.05	0.47	0.54	0.22	0.47	0.57
Uniform Delay, d1		35.8	32.1	29.8	28.7	22.6	18.4	38.6	31.4	29.4	38.7	31.7
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.5	0.6	0.1	13.4	0.6	0.0	1.0	1.5	0.4	1.0	2.2
Delay (s)		37.3	32.7	29.9	42.2	23.2	18.4	39.6	32.9	29.7	39.7	33.9
Level of Service		D	C	C	D	C	B	D	C	C	D	C
Approach Delay (s)			33.2			29.9			31.8			33.1
Approach LOS			C			C			C			C

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	87.2	Sum of lost time (s)	21.5
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Volume (vph)	101
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.1
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.76
Adj. Flow (vph)	133
RTOR Reduction (vph)	107
Lane Group Flow (vph)	26
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	17.1
Effective Green, g (s)	17.1
Actuated g/C Ratio	0.20
Clearance Time (s)	6.1
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	310
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.08
Uniform Delay, d1	28.6
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	28.8
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	3	750	6	19	287	17	4	3	170	36	5	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	3	781	6	20	299	18	4	3	177	38	5	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	791	336	184	46
Volume Left (vph)	3	20	4	38
Volume Right (vph)	6	18	177	3
Hadj (s)	0.03	0.01	-0.54	0.16
Departure Headway (s)	5.2	5.6	6.0	7.2
Degree Utilization, x	1.0	0.53	0.31	0.09
Capacity (veh/h)	681	624	568	458
Control Delay (s)	103.4	14.7	11.7	10.9
Approach Delay (s)	103.4	14.7	11.7	10.9
Approach LOS	F	B	B	B

Intersection Summary				
Delay		65.8		
Level of Service		F		
Intersection Capacity Utilization		64.9%	ICU Level of Service	C
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	8	698	194	51	50	8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	9	751	209	55	54	9

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total (vph)	759	209	55	62
Volume Left (vph)	9	0	0	54
Volume Right (vph)	0	0	55	9
Hadj (s)	0.04	0.03	-0.67	0.12
Departure Headway (s)	4.5	5.3	4.6	6.3
Degree Utilization, x	0.96	0.31	0.07	0.11
Capacity (veh/h)	780	667	764	549
Control Delay (s)	43.7	9.5	6.8	10.0
Approach Delay (s)	43.7	8.9		10.0
Approach LOS	E	A		B

Intersection Summary			
Delay	33.3		
Level of Service	D		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	691	50	28	202	42	66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	720	52	29	210	44	69

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total (vph)	720	52	240	113
Volume Left (vph)	0	0	29	44
Volume Right (vph)	0	52	0	69
Hadj (s)	0.03	-0.67	0.06	-0.25
Departure Headway (s)	5.1	4.4	5.3	5.9
Degree Utilization, x	1.0	0.06	0.35	0.19
Capacity (veh/h)	695	801	671	586
Control Delay (s)	61.7	6.5	11.1	10.3
Approach Delay (s)	58.0		11.1	10.3
Approach LOS	F		B	B

Intersection Summary			
Delay	43.2		
Level of Service	E		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	0	3	131	2	8	3	279	165	14	230	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	3	142	2	9	3	303	179	15	250	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	5	145	9	486	265
Volume Left (vph)	2	142	0	3	15
Volume Right (vph)	3	0	9	179	0
Hadj (s)	-0.25	0.53	-0.67	-0.19	0.05
Departure Headway (s)	6.0	6.8	5.6	4.6	5.1
Degree Utilization, x	0.01	0.27	0.01	0.62	0.38
Capacity (veh/h)	490	482	578	752	675
Control Delay (s)	9.0	11.2	7.5	15.0	11.1
Approach Delay (s)	9.0	11.0		15.0	11.1
Approach LOS	A	B		B	B

Intersection Summary				
Delay	13.1			
Level of Service	B			
Intersection Capacity Utilization	46.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	28	179	5	6	265	90	3	6	15	119	4	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	195	5	7	288	98	3	7	16	129	4	49

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	230	392	26	183
Volume Left (vph)	30	7	3	129
Volume Right (vph)	5	98	16	49
Hadj (s)	0.05	-0.11	-0.32	0.01
Departure Headway (s)	5.1	4.7	5.5	5.5
Degree Utilization, x	0.32	0.51	0.04	0.28
Capacity (veh/h)	670	736	552	597
Control Delay (s)	10.4	12.6	8.7	10.6
Approach Delay (s)	10.4	12.6	8.7	10.6
Approach LOS	B	B	A	B

Intersection Summary			
Delay	11.4		
Level of Service	B		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	142	58	45	247	216	67
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	160	65	51	278	243	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	659	280	318			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	659	280	318			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	61	91	96			
cM capacity (veh/h)	411	759	1242			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	225	328	318
Volume Left	160	51	0
Volume Right	65	0	75
cSH	474	1242	1700
Volume to Capacity	0.47	0.04	0.19
Queue Length 95th (ft)	63	3	0
Control Delay (s)	19.3	1.6	0.0
Lane LOS	C	A	
Approach Delay (s)	19.3	1.6	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	219	1	25	0	127	231	15	45	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	231	1	26	0	134	243	16	47	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	258	377	63
Volume Left (vph)	0	231	0	16
Volume Right (vph)	0	26	243	0
Hadj (s)	0.00	0.15	-0.35	0.08
Departure Headway (s)	5.3	5.1	4.3	5.1
Degree Utilization, x	0.00	0.36	0.45	0.09
Capacity (veh/h)	608	665	796	646
Control Delay (s)	8.3	10.9	10.9	8.6
Approach Delay (s)	0.0	10.9	10.9	8.6
Approach LOS	A	B	B	A

Intersection Summary			
Delay	10.7		
Level of Service	B		
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	267	55	36	168	58	64
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	300	62	40	189	65	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			362		570	300
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			362		570	300
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		86	90
cM capacity (veh/h)			1197		467	740

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	300	62	40	189	65	72
Volume Left	0	0	40	0	65	0
Volume Right	0	62	0	0	0	72
cSH	1700	1700	1197	1700	467	740
Volume to Capacity	0.18	0.04	0.03	0.11	0.14	0.10
Queue Length 95th (ft)	0	0	3	0	12	8
Control Delay (s)	0.0	0.0	8.1	0.0	14.0	10.4
Lane LOS			A		B	B
Approach Delay (s)	0.0		1.4		12.1	
Approach LOS					B	

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	30.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	482	93	0	867	410	274	0	347	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Lane Util. Factor		0.91	1.00		0.91	1.00	0.95	0.95	0.88			
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1681	1681	2787			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1681	1681	2787			
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	554	107	0	997	471	315	0	399	0	0	0
RTOR Reduction (vph)	0	0	86	0	0	331	0	0	305	0	0	0
Lane Group Flow (vph)	0	554	21	0	997	140	157	158	94	0	0	0
Turn Type		NA	Perm		NA	Perm	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			2			6			8			
Actuated Green, G (s)		11.9	11.9		17.7	17.7	14.0	14.0	14.0			
Effective Green, g (s)		11.9	11.9		17.7	17.7	14.0	14.0	14.0			
Actuated g/C Ratio		0.20	0.20		0.30	0.30	0.24	0.24	0.24			
Clearance Time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Vehicle Extension (s)		1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Lane Grp Cap (vph)		1017	316		1512	470	395	395	655			
v/s Ratio Prot		c0.11			c0.20		0.09	c0.09				
v/s Ratio Perm			0.01			0.09			0.03			
v/c Ratio		0.54	0.07		0.66	0.30	0.40	0.40	0.14			
Uniform Delay, d1		21.4	19.3		18.3	16.1	19.2	19.2	18.0			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.3	0.0		0.8	0.1	0.2	0.2	0.0			
Delay (s)		21.7	19.3		19.1	16.2	19.4	19.4	18.0			
Level of Service		C	B		B	B	B	B	B			
Approach Delay (s)		21.3			18.2			18.7			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	15.9
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	✣	↱
Volume (vph)	0	312	543	0	488	658	0	0	0	253	1	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1583		5085	1583				1681	1607	1504
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1583		5085	1583				1681	1607	1504
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	367	639	0	574	774	0	0	0	298	1	68
RTOR Reduction (vph)	0	0	498	0	0	562	0	0	0	0	2	48
Lane Group Flow (vph)	0	367	141	0	574	212	0	0	0	152	152	13
Turn Type		NA	Perm		NA	Perm				Split	NA	Perm
Protected Phases		2			6					4	4	
Permitted Phases			2			6						4
Actuated Green, G (s)		11.7	11.7		14.6	14.6				11.7	11.7	11.7
Effective Green, g (s)		11.7	11.7		14.6	14.6				11.7	11.7	11.7
Actuated g/C Ratio		0.22	0.22		0.27	0.27				0.22	0.22	0.22
Clearance Time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Vehicle Extension (s)		1.0	1.0		1.0	1.0				1.0	1.0	1.0
Lane Grp Cap (vph)		1118	348		1395	434				369	353	330
v/s Ratio Prot		0.07			0.11					0.09	c0.09	
v/s Ratio Perm			c0.09			c0.13						0.01
v/c Ratio		0.33	0.40		0.41	0.49				0.41	0.43	0.04
Uniform Delay, d1		17.4	17.8		15.8	16.2				17.8	17.9	16.3
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	0.3		0.1	0.3				0.3	0.3	0.0
Delay (s)		17.5	18.0		15.9	16.5				18.1	18.2	16.4
Level of Service		B	B		B	B				B	B	B
Approach Delay (s)		17.8			16.2			0.0			17.8	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	53.2	Sum of lost time (s)	15.2
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	701	21	5	615	295	13	44	11	169	33	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.40	1.00	1.00	0.36	1.00	1.00	0.73	1.00	1.00	0.73	1.00	1.00
Satd. Flow (perm)	741	3539	1583	1303	3539	1583	2651	1863	1583	2623	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	762	23	5	668	321	14	48	12	184	36	52
RTOR Reduction (vph)	0	0	13	0	0	188	0	0	9	0	0	39
Lane Group Flow (vph)	65	762	10	5	668	133	14	48	3	184	36	13
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	12.5	12.5	12.5	12.5	12.5	12.5	7.7	7.7	7.7	7.7	7.7	7.7
Effective Green, g (s)	12.5	12.5	12.5	12.5	12.5	12.5	7.7	7.7	7.7	7.7	7.7	7.7
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41	0.25	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	1464	655	539	1464	655	675	475	403	668	475	403
v/s Ratio Prot		c0.22			0.19			0.03			0.02	
v/s Ratio Perm	0.09		0.01	0.00		0.08	0.01		0.00	c0.07		0.01
v/c Ratio	0.21	0.52	0.01	0.01	0.46	0.20	0.02	0.10	0.01	0.28	0.08	0.03
Uniform Delay, d1	5.7	6.6	5.2	5.2	6.4	5.7	8.4	8.6	8.4	9.0	8.5	8.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.0	0.0	0.2	0.2	0.0	0.1	0.0	0.2	0.1	0.0
Delay (s)	6.0	6.9	5.2	5.2	6.6	5.8	8.4	8.7	8.4	9.2	8.6	8.5
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		6.8			6.4			8.6			9.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	30.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	17	11	76	4	15	93
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	20	13	90	5	18	111

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	33	95	129
Volume Left (vph)	0	90	18
Volume Right (vph)	13	0	111
Hadj (s)	-0.20	0.22	-0.45
Departure Headway (s)	4.1	4.4	3.7
Degree Utilization, x	0.04	0.12	0.13
Capacity (veh/h)	851	790	926
Control Delay (s)	7.2	8.0	7.3
Approach Delay (s)	7.2	8.0	7.3
Approach LOS	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR
Vol, veh/h	0	3	67	4	106	100	0	121	8
Peak Hour Factor	0.95	0.90	0.90	0.90	0.90	0.90	0.95	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	74	4	118	111	0	134	9
Number of Lanes	0	1	2	0	2	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	3	3	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	3
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	3
HCM Control Delay	7.6	8.2	9.9
HCM LOS	A	A	A

Lane	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	100%	100%	100%	0%	0%	0%
Vol Right, %	0%	0%	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	34	34	39	71	100	121	8
LT Vol	0	34	34	39	71	0	0	0
Through Vol	0	0	0	0	0	100	0	8
RT Vol	3	0	0	0	0	0	121	0
Lane Flow Rate	3	37	37	44	79	111	134	9
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.006	0.056	0.038	0.063	0.112	0.137	0.215	0.011
Departure Headway (Hd)	5.944	5.441	3.696	5.153	5.153	4.449	5.757	4.561
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	602	658	965	696	696	807	622	783
Service Time	3.681	3.177	1.432	2.879	2.879	2.175	3.496	2.299
HCM Lane V/C Ratio	0.005	0.056	0.038	0.063	0.114	0.138	0.215	0.011
HCM Control Delay	8.7	8.5	6.6	8.2	8.5	7.9	10.1	7.4
HCM Lane LOS	A	A	A	A	A	A	B	A
HCM 95th-tile Q	0	0.2	0.1	0.2	0.4	0.5	0.8	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	5	44	220	230	68	104	9	354	550	74	21	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0	5.0		5.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		1.00	0.91	1.00		0.97
Frt	1.00	0.88		1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00		0.95	0.97	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	1770	1630		1681	1722	1583		1770	5085	1583		3433
Flt Permitted	0.95	1.00		0.95	0.49	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	1770	1630		1681	873	1583		1770	5085	1583		3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	5	45	224	235	69	106	9	361	561	76	21	99
RTOR Reduction (vph)	0	184	0	0	0	73	0	0	0	53	0	0
Lane Group Flow (vph)	5	85	0	150	154	33	0	370	561	23	0	120
Turn Type	Prot	NA		Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases						8				2		
Actuated Green, G (s)	1.1	12.6		9.9	27.5	21.4		17.2	20.9	20.9		6.3
Effective Green, g (s)	1.1	12.6		9.9	27.5	21.4		17.2	20.9	20.9		6.3
Actuated g/C Ratio	0.02	0.18		0.14	0.39	0.31		0.25	0.30	0.30		0.09
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	27	294		238	465	486		436	1524	474		310
v/s Ratio Prot	0.00	0.05		c0.09	0.05			c0.21	c0.11			0.03
v/s Ratio Perm					c0.08	0.02				0.01		
v/c Ratio	0.19	0.29		0.63	0.33	0.07		0.85	0.37	0.05		0.39
Uniform Delay, d1	33.9	24.7		28.2	14.7	17.1		25.0	19.2	17.3		29.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	3.3	0.6		5.3	0.4	0.1		14.2	0.2	0.0		0.8
Delay (s)	37.2	25.2		33.5	15.1	17.1		39.3	19.4	17.4		30.7
Level of Service	D	C		C	B	B		D	B	B		C
Approach Delay (s)		25.5			22.4				26.5			
Approach LOS		C			C				C			

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations	↑↑↑	↱
Volume (vph)	264	7
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	5.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	269	7
RTOR Reduction (vph)	0	6
Lane Group Flow (vph)	269	1
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	10.0	10.0
Effective Green, g (s)	10.0	10.0
Actuated g/C Ratio	0.14	0.14
Clearance Time (s)	5.0	5.0
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	729	227
v/s Ratio Prot	0.05	
v/s Ratio Perm		0.00
v/c Ratio	0.37	0.00
Uniform Delay, d1	27.0	25.6
Progression Factor	1.00	1.00
Incremental Delay, d2	0.3	0.0
Delay (s)	27.3	25.6
Level of Service	C	C
Approach Delay (s)	28.3	
Approach LOS	C	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	181	62	87	172	20	264	264	112	43	251	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	32	185	63	89	176	20	269	269	114	44	256	83
RTOR Reduction (vph)	0	0	54	0	0	16	0	0	71	0	0	63
Lane Group Flow (vph)	32	185	9	89	176	4	269	269	43	44	256	20
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.5	8.1	8.1	5.1	10.7	10.7	9.9	21.7	21.7	2.3	14.1	14.1
Effective Green, g (s)	2.5	8.1	8.1	5.1	10.7	10.7	9.9	21.7	21.7	2.3	14.1	14.1
Actuated g/C Ratio	0.04	0.14	0.14	0.09	0.19	0.19	0.17	0.38	0.38	0.04	0.25	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	77	501	224	306	662	296	594	1342	600	138	872	390
v/s Ratio Prot	0.02	c0.05		c0.03	c0.05		c0.08	0.08		0.01	c0.07	
v/s Ratio Perm			0.01			0.00			0.03			0.01
v/c Ratio	0.42	0.37	0.04	0.29	0.27	0.01	0.45	0.20	0.07	0.32	0.29	0.05
Uniform Delay, d1	26.6	22.2	21.2	24.4	19.9	18.9	21.2	11.9	11.3	26.7	17.5	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.5	0.1	0.5	0.2	0.0	0.6	0.1	0.1	1.3	0.2	0.1
Delay (s)	30.2	22.7	21.3	24.9	20.1	19.0	21.8	12.0	11.4	28.0	17.7	16.5
Level of Service	C	C	C	C	C	B	C	B	B	C	B	B
Approach Delay (s)		23.2			21.5			15.9			18.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	57.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	19	226	487	14	97	252	55	13	120	121	89	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	20	235	507	15	101	262	57	14	125	126	93	105
RTOR Reduction (vph)	0	0	0	10	0	0	47	0	0	99	0	0
Lane Group Flow (vph)	0	255	507	5	101	262	10	14	125	27	93	105
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	7	4		3	8		5	2		1	6
Permitted Phases				4			8			2		
Actuated Green, G (s)		21.3	28.7	28.7	7.9	15.3	15.3	1.0	17.5	17.5	7.5	24.0
Effective Green, g (s)		21.3	28.7	28.7	7.9	15.3	15.3	1.0	17.5	17.5	7.5	24.0
Actuated g/C Ratio		0.26	0.35	0.35	0.10	0.18	0.18	0.01	0.21	0.21	0.09	0.29
Clearance Time (s)		5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1
Vehicle Extension (s)		2.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0
Lane Grp Cap (vph)		453	1222	546	168	651	291	21	392	333	159	538
v/s Ratio Prot		c0.14	c0.14		0.06	0.07		0.01	c0.07		c0.05	0.06
v/s Ratio Perm				0.00			0.01			0.02		
v/c Ratio		0.56	0.41	0.01	0.60	0.40	0.04	0.67	0.32	0.08	0.58	0.20
Uniform Delay, d1		26.9	20.8	17.9	36.1	29.9	27.8	40.9	27.8	26.3	36.3	22.3
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.0	0.2	0.0	4.1	0.4	0.1	58.7	0.5	0.1	3.5	0.2
Delay (s)		27.8	21.0	17.9	40.2	30.3	27.9	99.5	28.2	26.4	39.8	22.4
Level of Service		C	C	B	D	C	C	F	C	C	D	C
Approach Delay (s)			23.2			32.3			31.1			27.2
Approach LOS			C			C			C			C

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	21.5
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

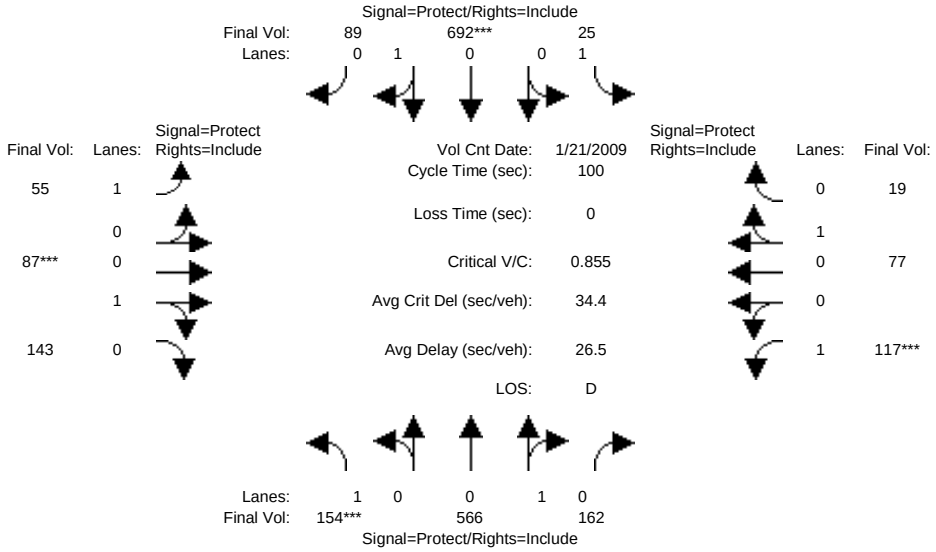
Movement	SBR
Lane Configurations	
Volume (vph)	112
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.1
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	117
RTOR Reduction (vph)	83
Lane Group Flow (vph)	34
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	24.0
Effective Green, g (s)	24.0
Actuated g/C Ratio	0.29
Clearance Time (s)	6.1
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	457
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.07
Uniform Delay, d1	21.5
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	21.5
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing AM Peak Hour

Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 21 Jan 2009 <<												
Base Vol:	154	566	162	25	692	89	55	87	143	117	77	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	154	566	162	25	692	89	55	87	143	117	77	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	154	566	162	25	692	89	55	87	143	117	77	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	154	566	162	25	692	89	55	87	143	117	77	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	154	566	162	25	692	89	55	87	143	117	77	19
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.78	0.22	1.00	0.89	0.11	1.00	0.38	0.62	1.00	0.80	0.20
Final Sat.:	1500	1166	334	1500	1329	171	1500	567	933	1500	1203	297
Capacity Analysis Module:												
Vol/Sat:	0.10	0.49	0.49	0.02	0.52	0.52	0.04	0.15	0.15	0.08	0.06	0.06
Crit Volume:	154				781			230		117		
Crit Moves:	****				****			****		****		

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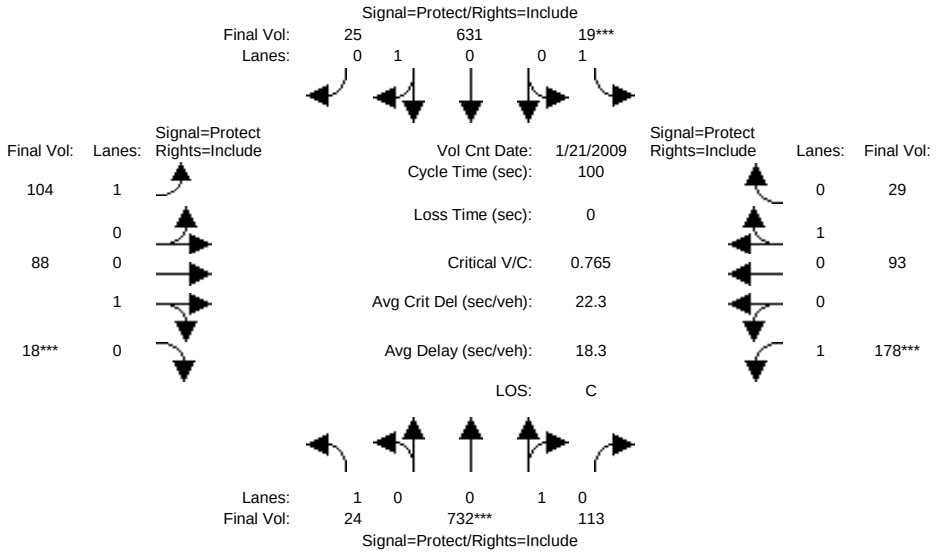
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing PM Peak Hour

Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 21 Jan 2009 <<												
Base Vol:	24	732	113	19	631	25	104	88	18	178	93	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	732	113	19	631	25	104	88	18	178	93	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	732	113	19	631	25	104	88	18	178	93	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	732	113	19	631	25	104	88	18	178	93	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	732	113	19	631	25	104	88	18	178	93	29
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.87	0.13	1.00	0.96	0.04	1.00	0.83	0.17	1.00	0.76	0.24
Final Sat.:	1500	1299	201	1500	1443	57	1500	1245	255	1500	1143	357
Capacity Analysis Module:												
Vol/Sat:	0.02	0.56	0.56	0.01	0.44	0.44	0.07	0.07	0.07	0.12	0.08	0.08
Crit Volume:		845			19				106	178		
Crit Moves:		****			****				****	****		

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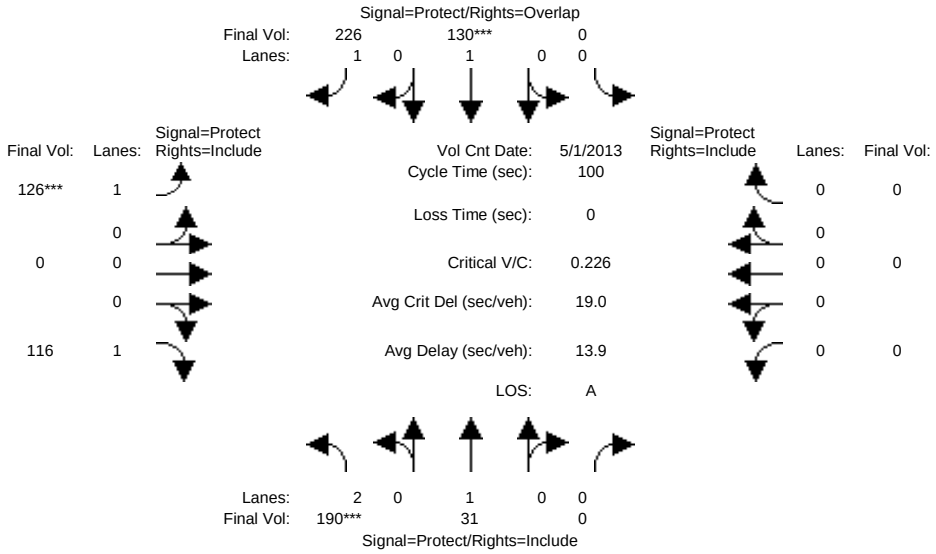
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing AM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	190	31	0	0	130	226	126	0	116	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	31	0	0	130	226	126	0	116	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	31	0	0	130	226	126	0	116	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	31	0	0	130	226	126	0	116	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	31	0	0	130	226	126	0	116	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.02	0.00	0.00	0.08	0.15	0.08	0.00	0.07	0.00	0.00	0.00
Crit Volume:	95				130		126				0	
Crit Moves:	****				****		****					

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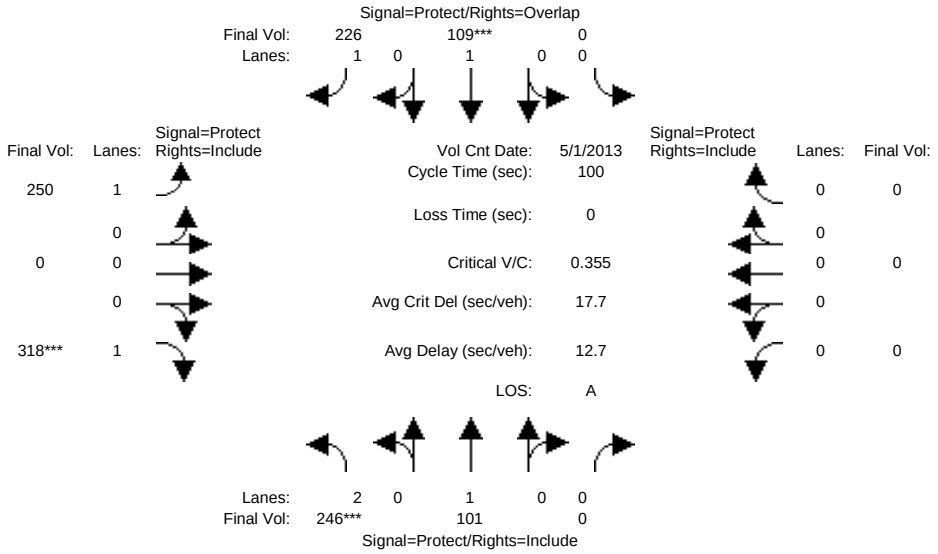
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing PM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	246	101	0	0	109	226	250	0	318	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	246	101	0	0	109	226	250	0	318	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	246	101	0	0	109	226	250	0	318	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	246	101	0	0	109	226	250	0	318	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	246	101	0	0	109	226	250	0	318	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.07	0.00	0.00	0.07	0.15	0.16	0.00	0.21	0.00	0.00	0.00
Crit Volume:	123				109				318	0		
Crit Moves:	****				****				****			

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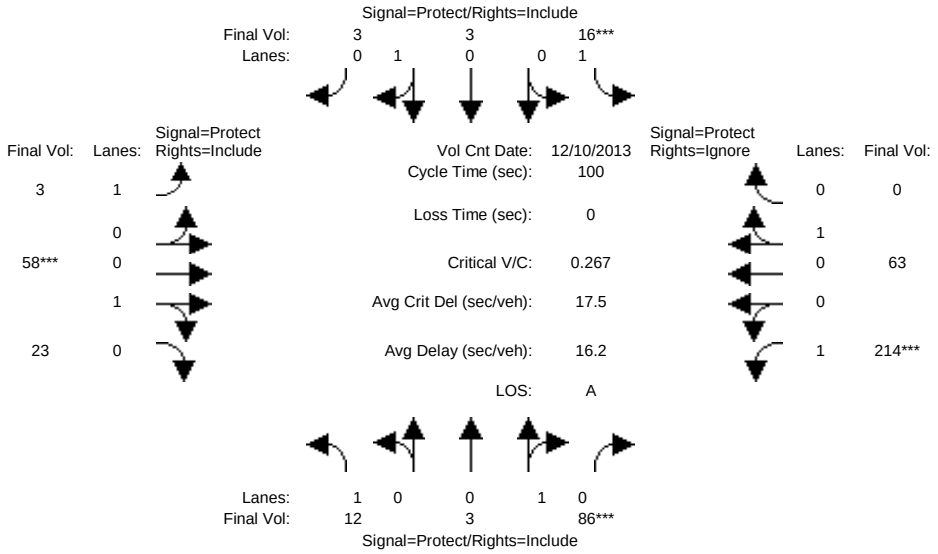
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing AM Peak Hour

Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 10 Dec 2013 <<												
Base Vol:	12	3	86	16	3	3	3	58	23	214	63	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	3	86	16	3	3	3	58	23	214	63	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	12	3	86	16	3	3	3	58	23	214	63	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	3	86	16	3	3	3	58	23	214	63	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	12	3	86	16	3	3	3	58	23	214	63	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.03	0.97	1.00	0.50	0.50	1.00	0.72	0.28	1.00	1.00	0.00
Final Sat.:	1500	51	1449	1500	750	750	1500	1074	426	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.06	0.06	0.01	0.00	0.00	0.00	0.05	0.05	0.14	0.04	0.00
Crit Volume:			89	16				81		214		
Crit Moves:			****	****				****		****		

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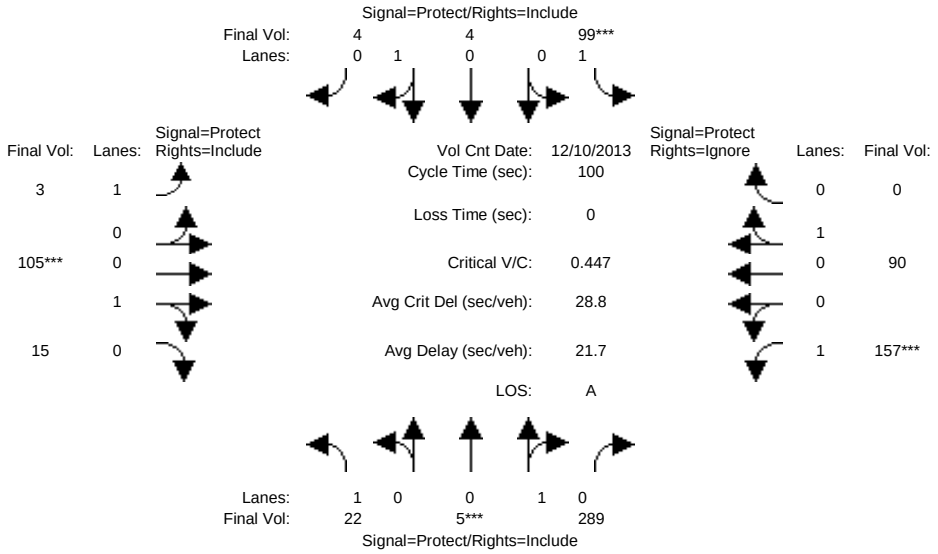
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing PM Peak Hour

Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 10 Dec 2013 <<												
Base Vol:	22	5	289	99	4	4	3	105	15	157	90	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	5	289	99	4	4	3	105	15	157	90	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	22	5	289	99	4	4	3	105	15	157	90	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	5	289	99	4	4	3	105	15	157	90	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	22	5	289	99	4	4	3	105	15	157	90	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	1.00	0.50	0.50	1.00	0.88	0.12	1.00	1.00	0.00
Final Sat.:	1500	26	1474	1500	750	750	1500	1313	188	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.20	0.20	0.07	0.01	0.01	0.00	0.08	0.08	0.10	0.06	0.00
Crit Volume:		294			99			120			157	
Crit Moves:		****			****			****			****	

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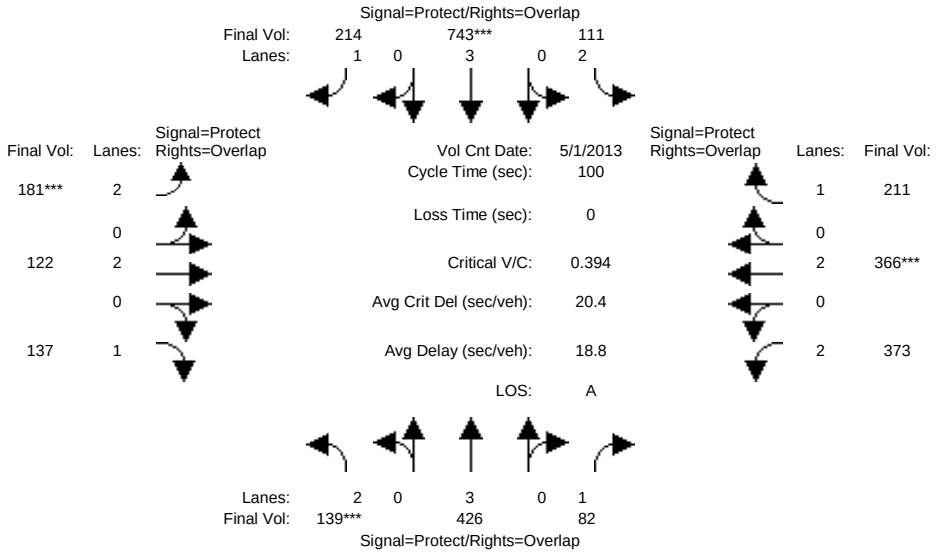
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing AM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	139	426	82	111	743	214	181	122	137	373	366	211
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	139	426	82	111	743	214	181	122	137	373	366	211
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	139	426	82	111	743	214	181	122	137	373	366	211
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	426	82	111	743	214	181	122	137	373	366	211
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	139	426	82	111	743	214	181	122	137	373	366	211
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.05	0.09	0.05	0.04	0.17	0.14	0.06	0.04	0.09	0.12	0.12	0.14
Crit Volume:	70			248			91			183		
Crit Moves:	****			****			****			****		

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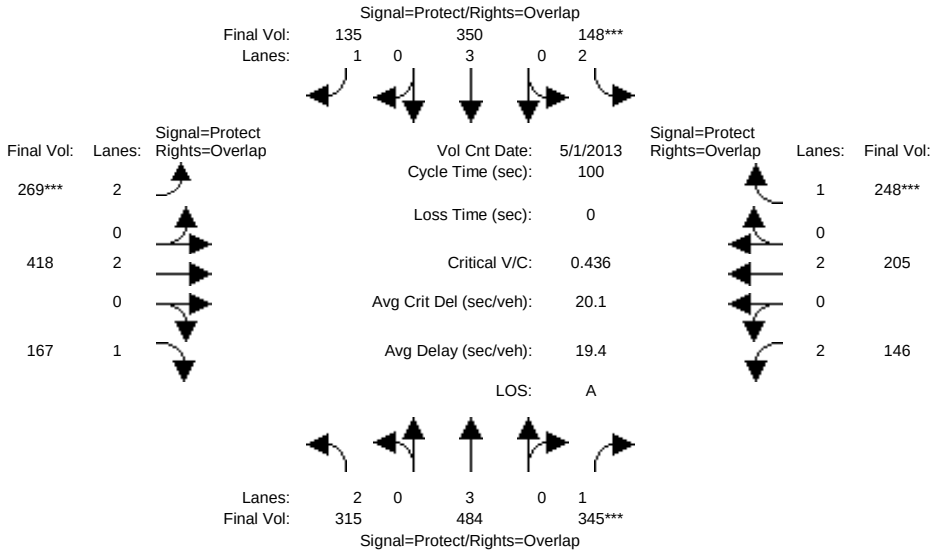
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing PM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	315	484	345	148	350	135	269	418	167	146	205	248
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	315	484	345	148	350	135	269	418	167	146	205	248
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	315	484	345	148	350	135	269	418	167	146	205	248
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	315	484	345	148	350	135	269	418	167	146	205	248
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	315	484	345	148	350	135	269	418	167	146	205	248
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.23	0.05	0.08	0.09	0.09	0.14	0.11	0.05	0.07	0.17
Crit Volume:			345		0			135				248
Crit Moves:			****		****			****				****

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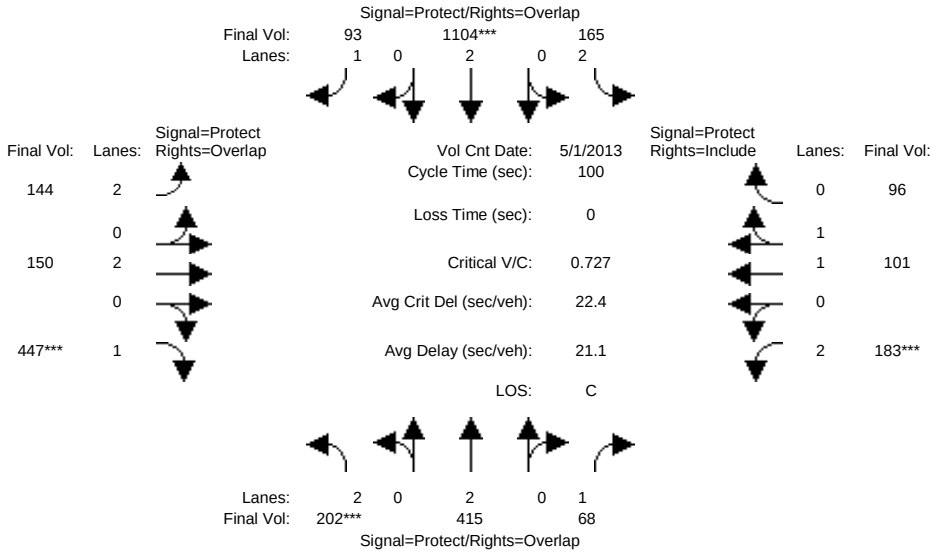
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing AM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	202	415	68	165	1104	93	144	150	447	183	101	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	202	415	68	165	1104	93	144	150	447	183	101	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	202	415	68	165	1104	93	144	150	447	183	101	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	202	415	68	165	1104	93	144	150	447	183	101	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	202	415	68	165	1104	93	144	150	447	183	101	96
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.03	0.97
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	1538	1462
Capacity Analysis Module:												
Vol/Sat:	0.07	0.14	0.05	0.06	0.37	0.06	0.05	0.05	0.30	0.06	0.07	0.07
Crit Volume:	0			552					447	92		
Crit Moves:	****			****					****	****		

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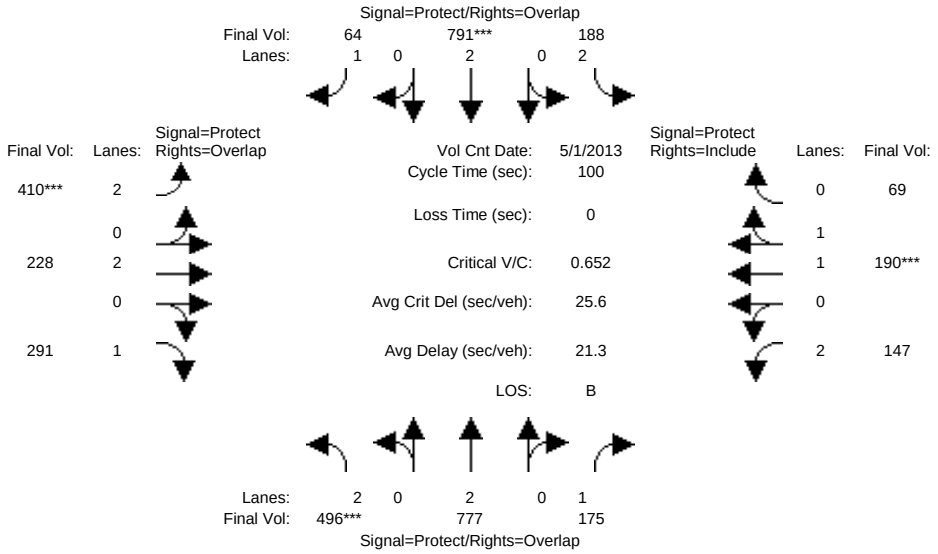
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing PM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	496	777	175	188	791	64	410	228	291	147	190	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	496	777	175	188	791	64	410	228	291	147	190	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	496	777	175	188	791	64	410	228	291	147	190	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	496	777	175	188	791	64	410	228	291	147	190	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	496	777	175	188	791	64	410	228	291	147	190	69
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.47	0.53
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	2201	799
Capacity Analysis Module:												
Vol/Sat:	0.17	0.26	0.12	0.06	0.26	0.04	0.14	0.08	0.19	0.05	0.09	0.09
Crit Volume:	248				396		205				130	
Crit Moves:	****				****		****				****	

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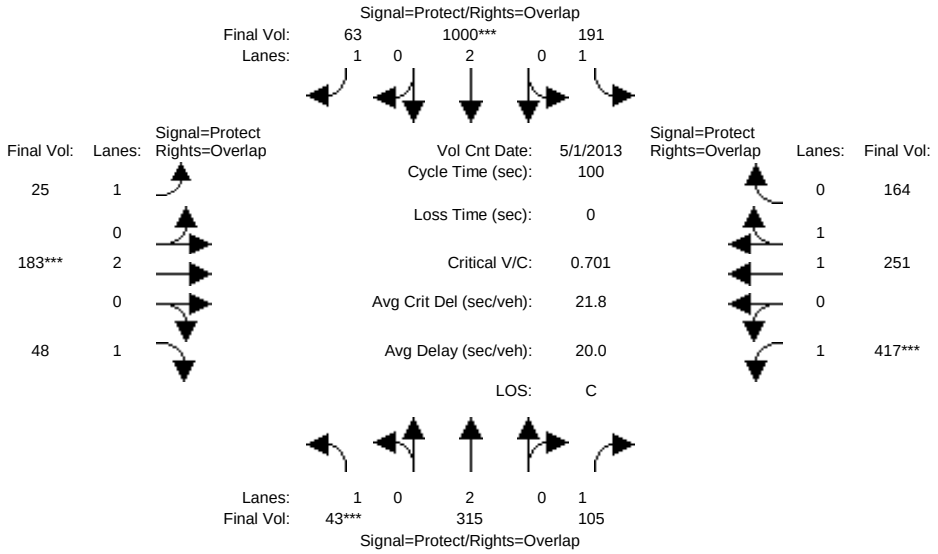
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing AM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	43	315	105	191	1000	63	25	183	48	417	251	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	315	105	191	1000	63	25	183	48	417	251	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	315	105	191	1000	63	25	183	48	417	251	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	315	105	191	1000	63	25	183	48	417	251	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	315	105	191	1000	63	25	183	48	417	251	164
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.21	0.79
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	1814	1186
Capacity Analysis Module:												
Vol/Sat:	0.03	0.11	0.07	0.13	0.33	0.04	0.02	0.06	0.03	0.28	0.14	0.14
Crit Volume:	43				500			92			417	
Crit Moves:	****				****			****			****	

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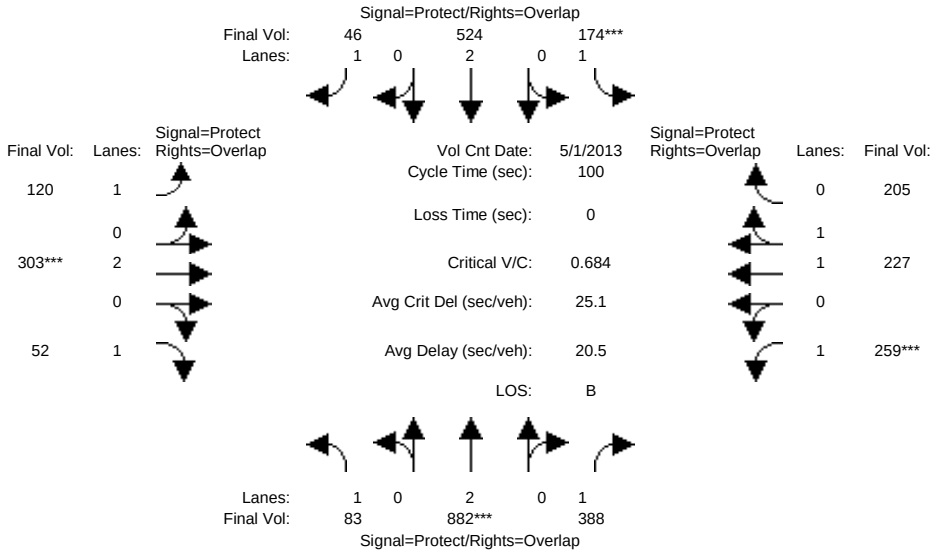
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing PM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	83	882	388	174	524	46	120	303	52	259	227	205
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	882	388	174	524	46	120	303	52	259	227	205
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	882	388	174	524	46	120	303	52	259	227	205
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	882	388	174	524	46	120	303	52	259	227	205
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	882	388	174	524	46	120	303	52	259	227	205
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.05	0.95
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	1576	1424
Capacity Analysis Module:												
Vol/Sat:	0.06	0.29	0.26	0.12	0.17	0.03	0.08	0.10	0.03	0.17	0.14	0.14
Crit Volume:		441			174			152			259	
Crit Moves:		****			****			****			****	

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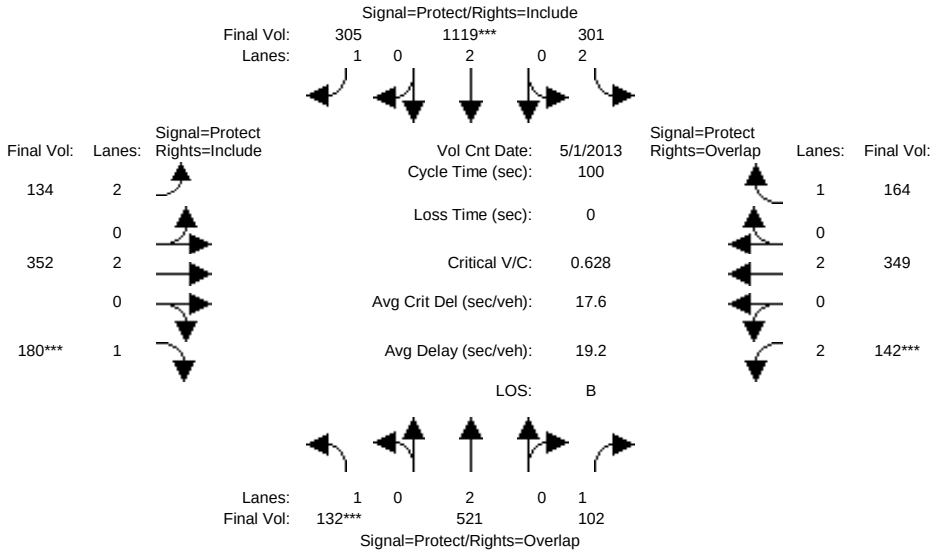
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing AM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	132	521	102	301	1119	305	134	352	180	142	349	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	132	521	102	301	1119	305	134	352	180	142	349	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	132	521	102	301	1119	305	134	352	180	142	349	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	132	521	102	301	1119	305	134	352	180	142	349	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	132	521	102	301	1119	305	134	352	180	142	349	164
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.09	0.17	0.07	0.10	0.37	0.20	0.04	0.12	0.12	0.05	0.12	0.11
Crit Volume:	132				560				180	71		
Crit Moves:	****				****				****	****		

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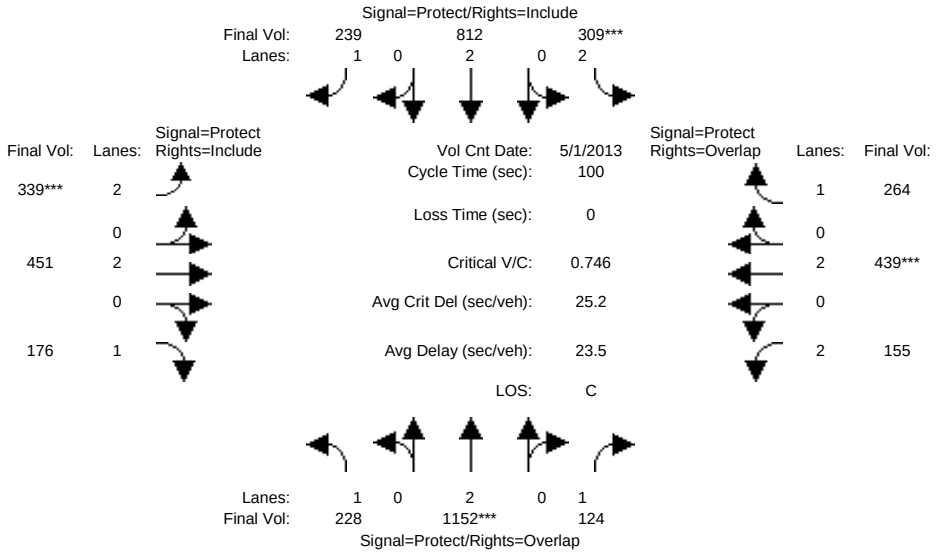
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing PM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	228	1152	124	309	812	239	339	451	176	155	439	264
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	228	1152	124	309	812	239	339	451	176	155	439	264
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	228	1152	124	309	812	239	339	451	176	155	439	264
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	228	1152	124	309	812	239	339	451	176	155	439	264
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	228	1152	124	309	812	239	339	451	176	155	439	264
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.15	0.38	0.08	0.10	0.27	0.16	0.11	0.15	0.12	0.05	0.15	0.18
Crit Volume:		576			155			170			220	
Crit Moves:		****			****			****			****	

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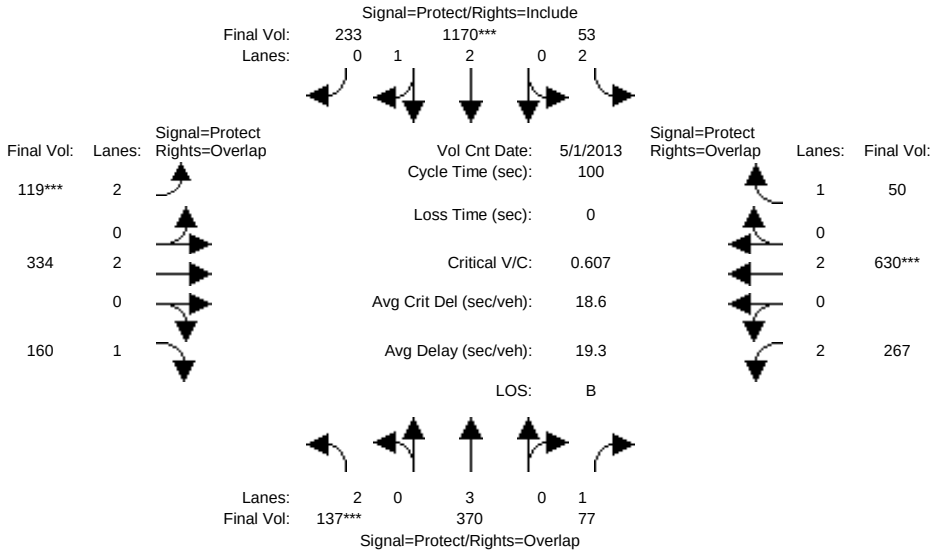
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing AM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	137	370	77	53	1170	233	119	334	160	267	630	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	137	370	77	53	1170	233	119	334	160	267	630	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	137	370	77	53	1170	233	119	334	160	267	630	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	137	370	77	53	1170	233	119	334	160	267	630	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	137	370	77	53	1170	233	119	334	160	267	630	50
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.50	0.50	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3753	747	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.05	0.08	0.05	0.02	0.31	0.31	0.04	0.11	0.11	0.09	0.21	0.03
Crit Volume:	69				468		60				315	
Crit Moves:	****				****		****				****	

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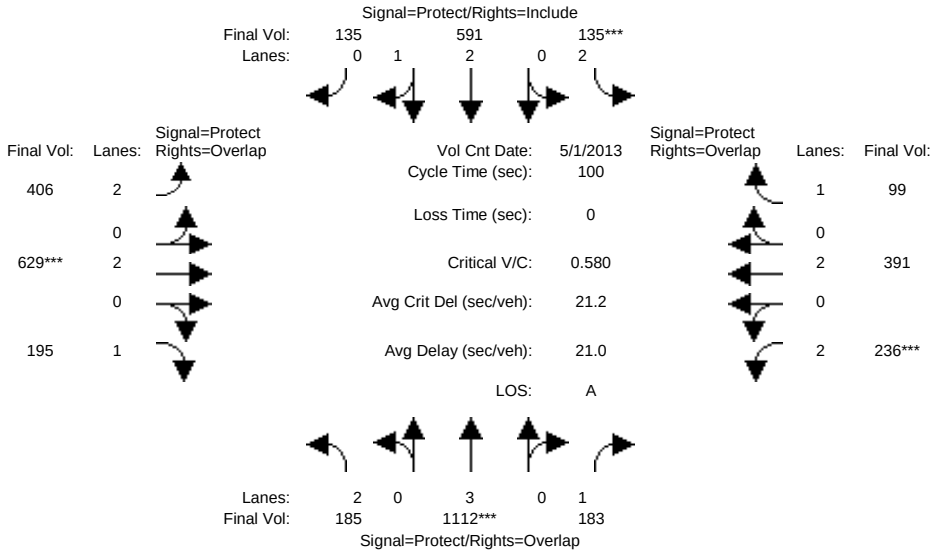
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing PM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 1 May 2013 <<												
Base Vol:	185	1112	183	135	591	135	406	629	195	236	391	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	1112	183	135	591	135	406	629	195	236	391	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	185	1112	183	135	591	135	406	629	195	236	391	99
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	1112	183	135	591	135	406	629	195	236	391	99
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	1112	183	135	591	135	406	629	195	236	391	99
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.44	0.56	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3663	837	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.12	0.05	0.16	0.16	0.14	0.21	0.13	0.08	0.13	0.07
Crit Volume:		371			68			315			118	
Crit Moves:		****			****			****			****	

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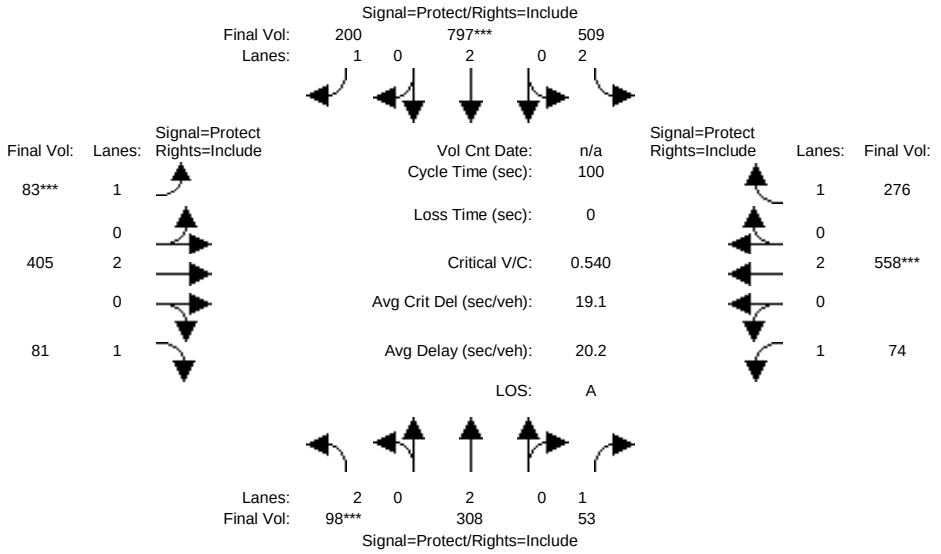
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing AM Peak Hour

Intersection #320: Walerga Rd and Elkhorn Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	98	308	53	509	797	200	83	405	81	74	558	276
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	308	53	509	797	200	83	405	81	74	558	276
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	308	53	509	797	200	83	405	81	74	558	276
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	308	53	509	797	200	83	405	81	74	558	276
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	308	53	509	797	200	83	405	81	74	558	276
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.03	0.10	0.04	0.17	0.27	0.13	0.06	0.14	0.05	0.05	0.19	0.18
Crit Volume:	49			399			83			279		
Crit Moves:	****			****			****			****		

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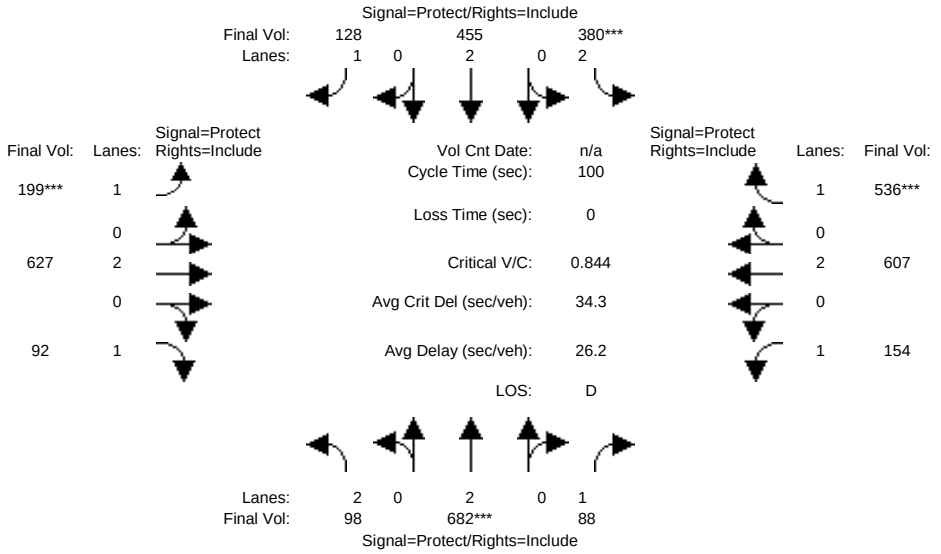
City of Roseville
Existing Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Existing PM Peak Hour

Intersection #320: Walerga Rd and Elkhorn Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	98	682	88	380	455	128	199	627	92	154	607	536
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	682	88	380	455	128	199	627	92	154	607	536
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	682	88	380	455	128	199	627	92	154	607	536
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	682	88	380	455	128	199	627	92	154	607	536
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	682	88	380	455	128	199	627	92	154	607	536
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.06	0.13	0.15	0.09	0.13	0.21	0.06	0.10	0.20	0.36
Crit Volume:		341			190			199				536
Crit Moves:		****			****			****				****

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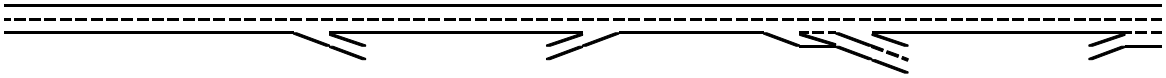
FREEWAY FACILITIES

Location	1	2	3	4	5	6	



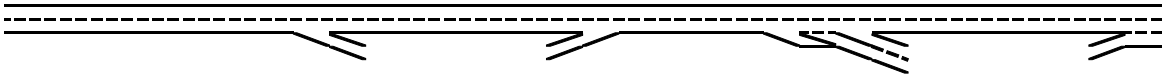
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Define Freeway Segment							
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	V
Length (ft)	1,780	1,500	2,960	1,500	1,500	1,250	
Accel Length				270			
Decel Length		120			1,500		
Mainline Volume	4,062	4,062	3,437	3,437	3,983	3,333	
On Ramp Volume				546			
Off Ramp Volume		625			650		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (GP)							
GP Volume (vph)	4,062	4,062	3,437	3,983	3,983	3,333	
PHF	0.85	0.85	0.85	0.85	0.85	0.85	
GP Lanes	2	2	2	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	4,874	4,874	4,124	4,780	4,780	4,000	
GP Flow (pcphpl)	2,437	2,437	2,062	2,390	2,390	2,000	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	1.04	1.04	0.88	1.02	1.02	0.85	
Speed (mph)	-	-	58.8	-	-	59.9	
Density (pcphpl)	-	-	35.1	-	-	33.4	
LOS	F	F	E	F	F	D	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		4,874		4,199	4,780		
GP_{IN} Cap (pcph)		4,700		4,700	4,700		
GP_{IN} v/c ratio		1.04		0.89	1.02		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		4,230		4,780	4,085		
GP_{OUT} Cap (pcph)		4,700		4,700	4,700		
GP_{OUT} v/c ratio		0.90		1.02	0.87		

Location	1	2	3	4	5	6	



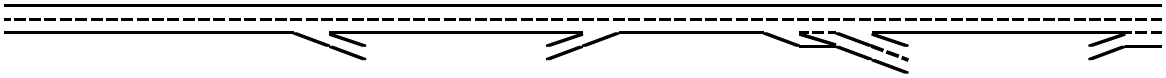
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)				546			
PHF				0.95			
Total Lanes				1			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				2.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.990			
f_P				1.00			
On Flow (pcph)				580			
On Flow (pcphpl)				580			
Calculate On Ramp Roadway Operations							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.28			

Location	1	2	3	4	5	6	



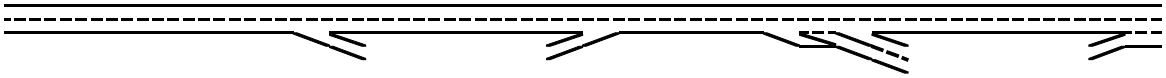
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Calculate Off Ramp Flow Rate							
Off Volume (vph)		625			650		
PHF		0.98			0.95		
Total Lanes		1			2		
Terrain		Level			Level		
Grade %		0.0%			0.0%		
Grade Length (mi)		0.00			0.00		
Truck & Bus %		2.0%			3.0%		
RV %		0.0%			0.0%		
E_T		1.5			1.5		
E_R		1.2			1.2		
f_{HV}		0.990			0.985		
f_P		1.00			1.00		
Off Flow (pcph)		644			694		
Off Flow (pcphpl)		644			347		
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right			Right		
Off Ramp Speed		45			45		
Off Ramp Cap (pcph)		2,100			4,200		
Off Ramp v/c ratio		0.31			0.17		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)				4,199			
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)				0.585			
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}				1.000			
v_{12} (pcph)				4,199			
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)				4,199			
v_{R12a} (pcph)				4,780			
Merge Speed Index				-			
Merge Area Speed				-			
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Merge v/c ratio				1.04			
Merge Density				-			
Merge LOS				F			

Location	1	2	3	4	5	6	



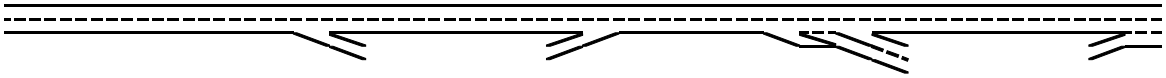
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)		4,874			4,780		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)		0.609			0.609		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		1.000			1.000		
v_{12} (pcph)		4,874			4,780		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		4,874			4,780		
Diverge Speed Index		-			-		
Diverge Area Speed		-			-		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio		1.11			1.09		
Diverge Density		-			-		
Diverge LOS		F			F		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to Mainline Flow Rate for Weave Segments							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	1	2	3	4	5	6	



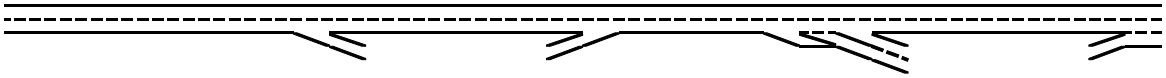
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Calculate Mainline to Off Ramp Flow Rate for Weave Segments							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Location	1	2	3	4	5	6	



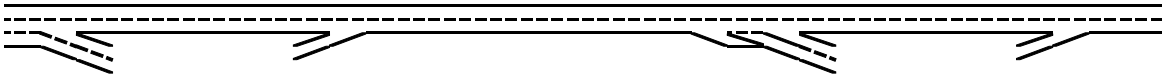
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Calculate Weave Segment Operations							
Weave Type							Or
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	1.04	1.11	0.88	1.04	1.09	0.85	
Segment Density	-	-	35.1	-	-	33.4	
Segment LOS	F	F	E	F	F	D	
Over Capacity	Segment GP Lanes	Segment GP Lanes In GP Lanes Diverge		Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes In GP Lanes Diverge		

Location	7	8	9	10	11	12	13



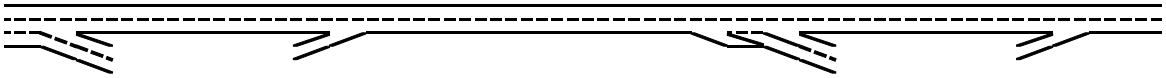
Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Define Freeway Segment							
Type	Weave	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	3,370	1,920	1,500	3,300	1,500	1,800	1,500
Accel Length			375				620
Decel Length					1,500		
Mainline Volume	3,333	2,230	2,230	2,571	2,571	1,260	1,260
On Ramp Volume	265		341				39
Off Ramp Volume	1,368				1,311		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose L							
GP Volume (vph)	3,598	2,230	2,571	2,571	2,571	1,260	1,299
PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85
GP Lanes	3	2	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,318	2,676	3,085	3,085	3,085	1,512	1,559
GP Flow (pcphpl)	1,439	1,338	1,543	1,543	1,543	756	779
Calculate Speed in General Purpose Lane							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in General Purpose							
v/c ratio	0.61	0.57	0.66	0.66	0.66	0.32	0.33
Speed (mph)	65.0	65.0	64.7	64.7	64.7	65.0	65.0
Density (pcphpl)	22.1	20.6	23.8	23.8	23.8	11.6	12.0
LOS	C	C	C	C	C	B	B
Calculate Operations for Entering GP Lan							
GP_{IN} Vol (pcph)	4,034		2,717		3,085		1,502
GP_{IN} Cap (pcph)	4,700		4,700		4,700		4,700
GP_{IN} v/c ratio	0.86		0.58		0.66		0.32
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	2,856		3,085		1,520		1,559
GP_{OUT} Cap (pcph)	4,700		4,700		4,700		4,700
GP_{OUT} v/c ratio	0.61		0.66		0.32		0.33

Location	7	8	9	10	11	12	13



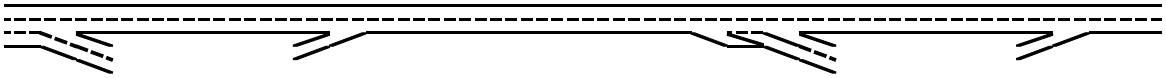
Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Calculate Flow Rate in Express Lanes (EL							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	265		341				39
PHF	0.95		0.94				0.7
Total Lanes	1		1				1
Terrain	Level		Level				Level
Grade %	0.0%		0.0%				0.0%
Grade Length (mi)	0.00		0.00				0.00
Truck & Bus %	3.0%		3.0%				3.0%
RV %	0.0%		0.0%				0.0%
E_T	1.5		1.5				1.5
E_R	1.2		1.2				1.2
f_{HV}	0.985		0.985				0.985
f_P	1.00		1.00				1.00
On Flow (pcph)	283		368				57
On Flow (pcphpl)	283		368				57
Calculate On Ramp Roadway Operations							
On Ramp Type			Right				Right
On Ramp Speed (mph)			45				25
On Ramp Cap (pcph)			2,100				1,900
On Ramp v/c ratio			0.18				0.03

Location	7	8	9	10	11	12	13



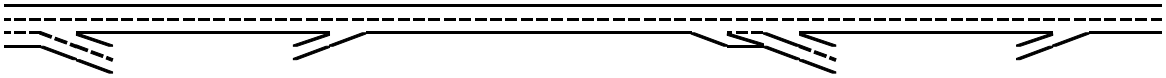
Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Calculate Off Ramp Flow Rate							
Off Volume (vph)	1,368				1,311		
PHF	0.95				0.85		
Total Lanes	2				2		
Terrain	Level				Level		
Grade %	0.0%				0.0%		
Grade Length (mi)	0.00				0.00		
Truck & Bus %	3.0%				3.0%		
RV %	0.0%				0.0%		
E_T	1.5				1.5		
E_R	1.2				1.2		
f_{HV}	0.985				0.985		
f_P	1.00				1.00		
Off Flow (pcph)	1,462				1,565		
Off Flow (pcphpl)	731				783		
Calculate Off Ramp Roadway Operations							
Off Ramp Type					Right		
Off Ramp Speed					45		
Off Ramp Cap (pcph)					4,200		
Off Ramp v/c ratio					0.37		
Determine Adjacent Ramp for Three-Lane							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operation							
Effective v_P (pcph)			2,717				1,502
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)			0.588				0.595
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}			1.000				1.000
v_{12} (pcph)			2,717				1,502
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)			2,717				1,502
v_{R12a} (pcph)			3,085				1,559
Merge Speed Index			0.37				0.31
Merge Area Speed			56.4				57.9
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed			56.4				57.9
Merge v/c ratio			0.67				0.34
Merge Density			27.0				13.7
Merge LOS			C				B

Location	7	8	9	10	11	12	13



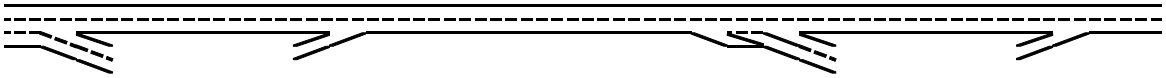
Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Calculate Diverge Influence Area Operatic							
Effective v_P (pcph)					3,085		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)					0.611		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}					1.000		
v_{12} (pcph)					3,085		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)					3,085		
Diverge Speed Index					0.44		
Diverge Area Speed					54.9		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed					54.9		
Diverge v/c ratio					0.70		
Diverge Density					17.3		
Diverge LOS					B		
Calculate On Ramp to Off Ramp Flow Rat							
On to Off Volume (vph)	27						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to Off Flow (pcph)	28						
Calculate On Ramp to Mainline Flow Rate							
On to ML Volume (vph)	239						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to ML Flow (pcph)	255						

Location	7	8	9	10	11	12	13



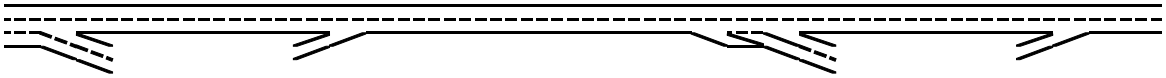
Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Calculate Mainline to Off Ramp Flow Rate							
ML to Off Volume (vph)	1,342						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	6.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.971						
f_P	1.00						
ML to Off Flow (pcph)	1,454						
Calculate General Purpose Lanes to Gene							
GP to GP Volume (vph)	1,992						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	6.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.971						
f_P	1.00						
GP to GP Flow (pcph)	2,159						

Location	7	8	9	10	11	12	13



Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Calculate Weave Segment Operations							
Weave Type	ne-sided						
Weave Length	2,370						
Segment Lanes	3						
Weave Lanes	3						
Weave Flow (pcph)	1,709						
Non-Weave Flow	2,188						
Segment Flow	3,897						
Max Weave Length	5,552						
Length Check	OK						
Ideal Weave Capacity	2,107						
f_{HV}	0.972						
f_P	0.999						
Capacity Condition 1	6,136						
Capacity Condition 2	7,748						
Weave v/c ratio	0.62						
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.62	0.57	0.67	0.66	0.70	0.32	0.34
Segment Density		20.6	27.0	23.8	17.3	11.6	13.7
Segment LOS		C	C	C	B	B	B
Over Capacity							

Location		14	15	16	17	18	19	

Key

<> Express Lane (HOV)

No Trucks

Name	mp	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Define Freeway Segment								
Type		Merge	Basic	Diverge	Basic	Weave	Basic	
Length (ft)		1,500	5,960	1,500	2,590	2,680	900	
Accel Length		1,180						
Decel Length				175				
Mainline Volume		1,299	1,557	1,557	1,205	1,205	999	
On Ramp Volume		258				414		
Off Ramp Volume				352		620		
Express Lane Volume								
EL On Ramp Volume								
EL Off Ramp Volume								
Calculate Flow Rate in General Purpose L								
GP Volume (vph)		1,557	1,557	1,557	1,205	1,619	999	
PHF		0.85	0.85	0.85	0.85	0.85	0.85	
GP Lanes		2	2	2	2	3	3	
Terrain		Level	Level	Level	Level	Level	Level	
Grade %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)		0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	
RV %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T		1.5	1.5	1.5	1.5	1.5	1.5	
E_R		1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}		0.980	0.980	0.980	0.980	0.980	0.980	
f_P		1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)		1,868	1,868	1,868	1,446	1,943	1,199	
GP Flow (pcphpl)		934	934	934	723	648	400	
Calculate Speed in General Purpose Lane								
Lane Width (ft)								
Shoulder Width								
TRD								
f_{LW}								
f_{LC}								
Calculated FFS								
Measured FFS								
FFS Curve		65	65	65	65	65	65	
Calculate Operations in General Purpose								
v/c ratio		0.40	0.40	0.40	0.31	0.28	0.17	
Speed (mph)		65.0	65.0	65.0	65.0	65.0	65.0	
Density (pcphpl)		14.4	14.4	14.4	11.1	10.0	6.1	
LOS		B	B	B	B	A	A	
Calculate Operations for Entering GP Lan								
GP_{IN} Vol (pcph)		1,564		1,868		1,492		
GP_{IN} Cap (pcph)		4,700		4,700		4,700		
GP_{IN} v/c ratio		0.33		0.40		0.32		
Calculate Operations for Exiting GP Lane								
GP_{OUT} Vol (pcph)		1,868		1,490		1,180		
GP_{OUT} Cap (pcph)		4,700		4,700		4,700		
GP_{OUT} v/c ratio		0.40		0.32		0.25		

Location		14	15	16	17	18	19	

Key

<> Express Lane (HOV)

No Trucks

Name	mp	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Calculate Flow Rate in Express Lanes (EL								
Calculate Speed in Express Lanes								
Calculate Operations in Express Lanes								
Calculate On Ramp Flow Rate								
On Volume (vph)		258				414		
PHF		0.86				0.95		
Total Lanes		1				1		
Terrain		Level				Level		
Grade %		0.0%				0.0%		
Grade Length (mi)		0.00				0.00		
Truck & Bus %		3.0%				7.0%		
RV %		0.0%				0.0%		
E_T		1.5				1.5		
E_R		1.2				1.2		
f_{HV}		0.985				0.966		
f_P		1.00				1.00		
On Flow (pcph)		305				451		
On Flow (pcphpl)		305				451		
Calculate On Ramp Roadway Operations								
On Ramp Type		Right				Right		
On Ramp Speed (mph)		45				45		
On Ramp Cap (pcph)		2,100				2,100		
On Ramp v/c ratio		0.15				0.21		

Location		14	15	16	17	18	19	

Key

<> Express Lane (HOV)

No Trucks

Name	mp	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Calculate Off Ramp Flow Rate								
Off Volume (vph)				352		620		
PHF				0.94		0.825		
Total Lanes				1		1		
Terrain				Level		Level		
Grade %				0.0%		0.0%		
Grade Length (mi)				0.00		0.00		
Truck & Bus %				2.0%		3.0%		
RV %				0.0%		0.0%		
E_T				1.5		1.5		
E_R				1.2		1.2		
f_{HV}				0.990		0.985		
f_P				1.00		1.00		
Off Flow (pcph)				378		763		
Off Flow (pcphpl)				378		763		
Calculate Off Ramp Roadway Operations								
Off Ramp Type				Right		Right		
Off Ramp Speed				45		45		
Off Ramp Cap (pcph)				2,100		2,100		
Off Ramp v/c ratio				0.18		0.36		
Determine Adjacent Ramp for Three-Lane								
Up Type								
Up Distance								
Up Flow (pcph)								
Down Type								
Down Distance								
Down Flow (pcph)								
Calculate Merge Influence Area Operation								
Effective v_P (pcph)		1,564						
Up Ramp L_{EQ}								
Down Ramp L_{EQ}								
P_{FM} (Eqn 13-3)		0.611						
P_{FM} (Eqn 13-4)								
P_{FM} (Eqn 13-5)								
P_{FM}		1.000						
v_{12} (pcph)		1,564						
v_3 (pcph)								
v_{34} (pcph)								
v_{12a} (pcph)		1,564						
v_{R12a} (pcph)		1,868						
Merge Speed Index		0.24						
Merge Area Speed		59.5						
Outer Lanes Volume								
Outer Lanes Speed								
Segment Speed		59.5						
Merge v/c ratio		0.41						
Merge Density		12.5						
Merge LOS		B						

Location		14	15	16	17	18	19	

Key

<> Express Lane (HOV)

No Trucks

Name	np	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Calculate Diverge Influence Area Operatic								
Effective v_P (pcph)				1,868				
Up Ramp L_{EQ}								
Down Ramp L_{EQ}								
P_{FD} (Eqn 13-9)				0.696				
P_{FD} (Eqn 13-10)								
P_{FD} (Eqn 13-11)								
P_{FD}				1.000				
v_{12} (pcph)				1,868				
v_3 (pcph)								
v_{34} (pcph)								
v_{12a} (pcph)				1,868				
Diverge Speed Index				0.33				
Diverge Area Speed				57.4				
Outer Lanes Volume								
Outer Lanes Speed								
Segment Speed				57.4				
Diverge v/c ratio				0.42				
Diverge Density				18.7				
Diverge LOS				B				
Calculate On Ramp to Off Ramp Flow Rat								
On to Off Volume (vph)						41		
PHF						0.8		
Terrain						Level		
Grade %						0.0%		
Grade Length (mi)						0.00		
Truck & Bus %						7.0%		
RV %						0.0%		
E_T						1.5		
E_R						1.2		
f_{HV}						0.966		
f_P						1.00		
On to Off Flow (pcph)						54		
Calculate On Ramp to Mainline Flow Rate								
On to ML Volume (vph)						373		
PHF						0.8		
Terrain						Level		
Grade %						0.0%		
Grade Length (mi)						0.00		
Truck & Bus %						3.0%		
RV %						0.0%		
E_T						1.5		
E_R						1.2		
f_{HV}						0.985		
f_P						1.00		
On to ML Flow (pcph)						473		

Location		14	15	16	17	18	19	

Key

<> Express Lane (HOV)

No Trucks

Name	mp	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Calculate Mainline to Off Ramp Flow Rate								
ML to Off Volume (vph)						579		
PHF						0.83		
Terrain						Level		
Grade %						0.0%		
Grade Length (mi)						0.00		
Truck & Bus %						3.0%		
RV %						0.0%		
E_T						1.5		
E_R						1.2		
f_{HV}						0.985		
f_P						1.00		
ML to Off Flow (pcph)						708		
Calculate General Purpose Lanes to Gene								
GP to GP Volume (vph)						626		
PHF						0.825		
Terrain						Level		
Grade %						0.0%		
Grade Length (mi)						0.00		
Truck & Bus %						3.0%		
RV %						0.0%		
E_T						1.5		
E_R						1.2		
f_{HV}						0.985		
f_P						1.00		
GP to GP Flow (pcph)						771		

Location		14	15	16	17	18	19	

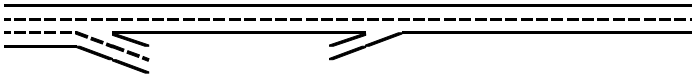
Key

<> Express Lane (HOV)

No Trucks

Name	mp	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Calculate Weave Segment Operations								
Weave Type						One-sided		
Weave Length						1,680		
Segment Lanes						3		
Weave Lanes						3		
Weave Flow (pcph)						1,180		
Non-Weave Flow						824		
Segment Flow						2,005		
Max Weave Length						7,317		
Length Check						OK		
Ideal Weave Capacity						1,919		
f_{HV}						0.985		
f_P						0.997		
Capacity Condition 1						5,649		
Capacity Condition 2						5,833		
Weave v/c ratio						0.35		
Interchange Density						0.666666667		
Lane Changes On to ML								
Lane Changes ML to Off								
Lane Changes On to Off								
Min Lane Change Rate						0		
Weave LC Rate						564		
Non-Weave LC Rate 1						503		
Non-Weave LC Rate 2						1,873		
Non-Weave LC Rate 3						-2,043		
Segment LC Rate						1,066		
Weave Intensity Factor						0.158		
Weave Speed						58.2		
Non-Weave Speed						61.8		
Segment Speed						59.6		
Weave Density						11.2		
Weave LOS						B		
Summarize Segment Operations								
Segment v/c ratio		0.41	0.40	0.42	0.31	0.35	0.17	
Segment Density		12.5	14.4	18.7	11.1	11.2	6.1	
Segment LOS		B	B	B	B	B	A	
Over Capacity								

Location	20	21	22	23



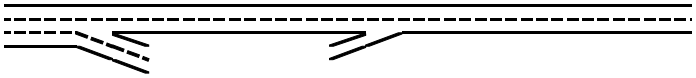
Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segment				
Type	Basic	Basic	Merge	Basic
Length (ft)	1,500	2,870	1,500	8,600
Accel Length			600	
Decel Length				
Mainline Volume	999	587	587	714
On Ramp Volume			127	
Off Ramp Volume	412			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Calculate Flow Rate in General Purpose L				
GP Volume (vph)	999	587	714	714
PHF	0.85	0.85	0.85	0.85
GP Lanes	3	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00
GP Flow (pcph)	1,199	704	857	857
GP Flow (pcphpl)	400	352	428	428
Calculate Speed in General Purpose Lane				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	65	65	65	65
Calculate Operations in General Purpose				
v/c ratio	0.17	0.15	0.18	0.18
Speed (mph)	65.0	65.0	65.0	65.0
Density (pcphpl)	6.1	5.4	6.6	6.6
LOS	A	A	A	A
Calculate Operations for Entering GP Lan				
GP_{IN} Vol (pcph)			713	
GP_{IN} Cap (pcph)			4,700	
GP_{IN} v/c ratio			0.15	
Calculate Operations for Exiting GP Lane				
GP_{OUT} Vol (pcph)	721		857	
GP_{OUT} Cap (pcph)	4,700		4,700	
GP_{OUT} v/c ratio	0.15		0.18	

Location	20	21	22	23



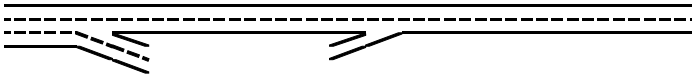
Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in Express Lanes (EL				
Calculate Speed in Express Lanes				
Calculate Operations in Express Lanes				
Calculate On Ramp Flow Rate				
On Volume (vph)			127	
PHF			0.9	
Total Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			4.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.980	
f_P			1.00	
On Flow (pcph)			144	
On Flow (pcphpl)			144	
Calculate On Ramp Roadway Operations				
On Ramp Type			Right	
On Ramp Speed (mph)			45	
On Ramp Cap (pcph)			2,100	
On Ramp v/c ratio			0.07	

Location	20	21	22	23



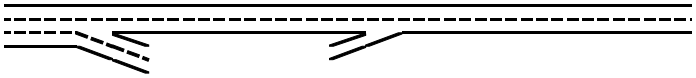
Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flow Rate				
Off Volume (vph)	412			
PHF	0.88			
Total Lanes	2			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	4.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.980			
f_P	1.00			
Off Flow (pcph)	478			
Off Flow (pcphpl)	239			
Calculate Off Ramp Roadway Operations				
Off Ramp Type	Right			
Off Ramp Speed	45			
Off Ramp Cap (pcph)	4,200			
Off Ramp v/c ratio	0.11			
Determine Adjacent Ramp for Three-Lane				
Up Type				
Up Distance				
Up Flow (pcph)				
Down Type				
Down Distance				
Down Flow (pcph)				
Calculate Merge Influence Area Operation				
Effective v_P (pcph)			713	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.594	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			713	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			713	
v_{R12a} (pcph)			857	
Merge Speed Index			0.28	
Merge Area Speed			58.6	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			58.6	
Merge v/c ratio			0.19	
Merge Density			8.3	
Merge LOS			A	

Location	20	21	22	23



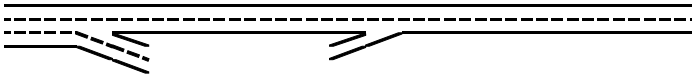
Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influence Area Operatic				
Effective v_P (pcph)				
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)				
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}				
v_{12} (pcph)				
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				
Diverge Speed Index				
Diverge Area Speed				
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				
Diverge v/c ratio				
Diverge Density				
Diverge LOS				
Calculate On Ramp to Off Ramp Flow Rat				
On to Off Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
On to Off Flow (pcph)				
Calculate On Ramp to Mainline Flow Rate				
On to ML Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
On to ML Flow (pcph)				

Location	20	21	22	23



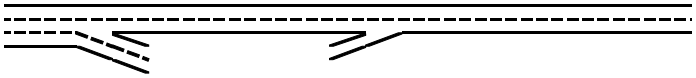
Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to Off Ramp Flow Rate				
ML to Off Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
ML to Off Flow (pcph)				
Calculate General Purpose Lanes to Gene				
GP to GP Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
GP to GP Flow (pcph)				

Location	20	21	22	23



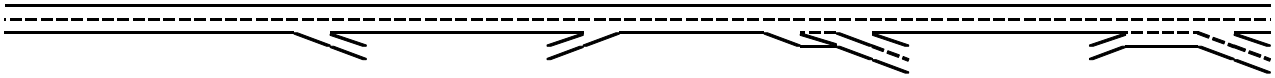
Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segment Operations				
Weave Type				
Weave Length				
Segment Lanes				
Weave Lanes				
Weave Flow (pcph)				
Non-Weave Flow				
Segment Flow				
Max Weave Length				
Length Check				
Ideal Weave Capacity				
f_{HV}				
f_P				
Capacity Condition 1				
Capacity Condition 2				
Weave v/c ratio				
Interchange Density				
Lane Changes On to ML				
Lane Changes ML to Off				
Lane Changes On to Off				
Min Lane Change Rate				
Weave LC Rate				
Non-Weave LC Rate 1				
Non-Weave LC Rate 2				
Non-Weave LC Rate 3				
Segment LC Rate				
Weave Intensity Factor				
Weave Speed				
Non-Weave Speed				
Segment Speed				
Weave Density				
Weave LOS				
Summarize Segment Operations				
Segment v/c ratio	0.17	0.15	0.19	0.18
Segment Density	6.1	5.4	8.3	6.6
Segment LOS	A	A	A	A
Over Capacity				

Location	1	2	3	4	5	6	7



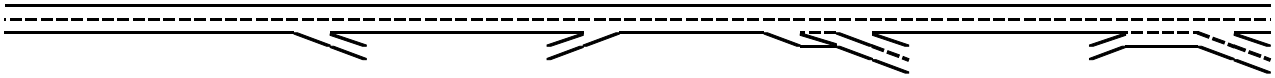
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Define Freeway Segment							
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	Weave
Length (ft)	1,780	1,500	2,960	1,500	1,500	1,250	3,370
Accel Length				270			
Decel Length		120			1,500		
Mainline Volume	4,504	4,504	3,358	3,358	4,283	3,301	3,301
On Ramp Volume				925			614
Off Ramp Volume		1,146			982		1,173
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (GP)							
GP Volume (vph)	4,504	4,504	3,358	4,283	4,283	3,301	3,915
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	2	2	2	3
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,836	4,836	3,605	4,599	4,599	3,544	4,203
GP Flow (pcphpl)	2,418	2,418	1,803	2,299	2,299	1,772	1,401
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes							
v/c ratio	1.03	1.03	0.77	0.98	0.98	0.75	0.60
Speed (mph)	-	-	62.7	53.5	53.5	63.0	65.0
Density (pcphpl)	-	-	28.8	43.0	43.0	28.1	21.6
LOS	F	F	D	E	E	D	C
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		4,836		3,615	4,599		3,547
GP_{IN} Cap (pcph)		4,700		4,700	4,700		4,700
GP_{IN} v/c ratio		1.03		0.77	0.98		0.75
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		3,655		4,599	3,549		2,950
GP_{OUT} Cap (pcph)		4,700		4,700	4,700		4,700
GP_{OUT} v/c ratio		0.78		0.98	0.76		0.63

Location	1	2	3	4	5	6	7



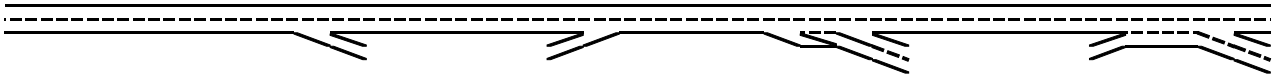
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)				925			614
PHF				0.95			0.95
Total Lanes				1			1
Terrain				Level			Level
Grade %				0.0%			0.0%
Grade Length (mi)				0.00			0.00
Truck & Bus %				2.0%			3.0%
RV %				0.0%			0.0%
E_T				1.5			1.5
E_R				1.2			1.2
f_{HV}				0.990			0.985
f_P				1.00			1.00
On Flow (pcph)				983			656
On Flow (pcphpl)				983			656
Calculate On Ramp Roadway Operations							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.47			

Location	1	2	3	4	5	6	7



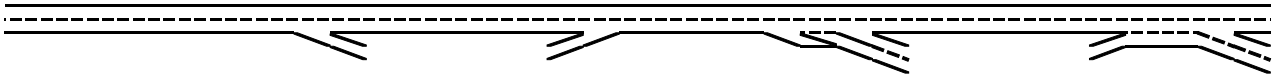
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Calculate Off Ramp Flow Rate							
Off Volume (vph)		1,146			982		1,173
PHF		0.98			0.95		0.95
Total Lanes		1			2		2
Terrain		Level			Level		Level
Grade %		0.0%			0.0%		0.0%
Grade Length (mi)		0.00			0.00		0.00
Truck & Bus %		2.0%			3.0%		3.0%
RV %		0.0%			0.0%		0.0%
E_T		1.5			1.5		1.5
E_R		1.2			1.2		1.2
f_{HV}		0.990			0.985		0.985
f_P		1.00			1.00		1.00
Off Flow (pcph)		1,181			1,049		1,253
Off Flow (pcphpl)		1,181			525		627
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right			Right		
Off Ramp Speed		45			45		
Off Ramp Cap (pcph)		2,100			4,200		
Off Ramp v/c ratio		0.56			0.25		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)				3,615			
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)				0.585			
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}				1.000			
v_{12} (pcph)				3,615			
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)				3,615			
v_{R12a} (pcph)				4,599			
Merge Speed Index				0.68			
Merge Area Speed				49.3			
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed				49.3			
Merge v/c ratio				1.00			
Merge Density				39.2			
Merge LOS				E			

Location	1	2	3	4	5	6	7



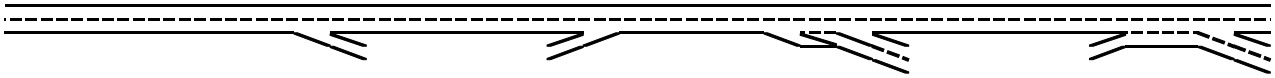
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)		4,836			4,599		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)		0.585			0.597		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		1.000			1.000		
v_{12} (pcph)		4,836			4,599		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		4,836			4,599		
Diverge Speed Index		-			0.39		
Diverge Area Speed		-			56.0		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed					56.0		
Diverge v/c ratio		1.10			1.05		
Diverge Density		-			30.3		
Diverge LOS		F			F		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments							
On to Off Volume (vph)							61
PHF							0.95
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							3.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.985
f_P							1.00
On to Off Flow (pcph)							66
Calculate On Ramp to Mainline Flow Rate for Weave Segments							
On to ML Volume (vph)							553
PHF							0.95
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							3.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.985
f_P							1.00
On to ML Flow (pcph)							590

Location	1	2	3	4	5	6	7



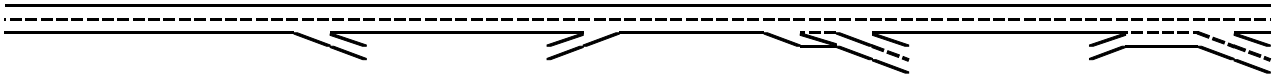
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Calculate Mainline to Off Ramp Flow Rate for Weave Segments							
ML to Off Volume (vph)							1,112
PHF							0.95
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							6.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.971
f_P							1.00
ML to Off Flow (pcph)							1,205
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments							
GP to GP Volume (vph)							2,189
PHF							0.95
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							6.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.971
f_P							1.00
GP to GP Flow (pcph)							2,374

Location	1	2	3	4	5	6	7



Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Calculate Weave Segment Operations							
Weave Type							One-sided
Weave Length							2,370
Segment Lanes							3
Weave Lanes							3
Weave Flow (pcph)							1,796
Non-Weave Flow							2,439
Segment Flow							4,235
Max Weave Length							5,386
Length Check							OK
Ideal Weave Capacity							2,119
f_{HV}							0.973
f_P							0.998
Capacity Condition 1							6,174
Capacity Condition 2							8,016
Weave v/c ratio							0.67
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	1.03	1.10	0.77	1.00	1.05	0.75	0.67
Segment Density	-	-	28.8	39.2	-	28.1	
Segment LOS	F	F	D	E	F	D	
Over Capacity	Segment GP Lanes	Segment GP Lanes In GP Lanes Diverge			Diverge		

Location	8	9	10	11	12	13	14

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Define Freeway Segmer							
Type	Basic	Merge	Basic	Diverge	Basic	Merge	Merge
Length (ft)	1,920	1,500	3,300	1,500	1,800	1,500	1,500
Accel Length		375				620	1,180
Decel Length				1,500			
Mainline Volume	2,742	2,742	3,252	3,252	2,603	2,603	2,699
On Ramp Volume		510				96	414
Off Ramp Volume				649			
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in G							
GP Volume (vph)	2,742	3,252	3,252	3,252	2,603	2,699	3,113
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,944	3,492	3,492	3,492	2,795	2,898	3,342
GP Flow (pcphpl)	1,472	1,746	1,746	1,746	1,397	1,449	1,671
Calculate Speed in Gen							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in							
v/c ratio	0.63	0.74	0.74	0.74	0.59	0.62	0.71
Speed (mph)	64.9	63.3	63.3	63.3	65.0	65.0	64.0
Density (pcphpl)	22.7	27.6	27.6	27.6	21.5	22.3	26.1
LOS	C	D	D	D	C	C	D
Calculate Operations fo							
GP_{IN} Vol (pcph)		2,941		3,492		2,759	2,854
GP_{IN} Cap (pcph)		4,700		4,700		4,700	4,700
GP_{IN} v/c ratio		0.63		0.74		0.59	0.61
Calculate Operations fo							
GP_{OUT} Vol (pcph)		3,492		2,717		2,898	3,342
GP_{OUT} Cap (pcph)		4,700		4,700		4,700	4,700
GP_{OUT} v/c ratio		0.74		0.58		0.62	0.71

Location	8	9	10	11	12	13	14

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Calculate Flow Rate in I							
Calculate Speed in Expl							
Calculate Operations in							
Calculate On Ramp Flo							
On Volume (vph)		510				96	414
PHF		0.94				0.7	0.86
Total Lanes		1				1	1
Terrain		Level				Level	Level
Grade %		0.0%				0.0%	0.0%
Grade Length (mi)		0.00				0.00	0.00
Truck & Bus %		3.0%				3.0%	3.0%
RV %		0.0%				0.0%	0.0%
E_T		1.5				1.5	1.5
E_R		1.2				1.2	1.2
f_{HV}		0.985				0.985	0.985
f_P		1.00				1.00	1.00
On Flow (pcph)		551				139	489
On Flow (pcphpl)		551				139	489
Calculate On Ramp Roa							
On Ramp Type		Right				Right	Right
On Ramp Speed (mph)		45				25	45
On Ramp Cap (pcph)		2,100				1,900	2,100
On Ramp v/c ratio		0.26				0.07	0.23

Location	8	9	10	11	12	13	14

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Calculate Off Ramp Flo							
Off Volume (vph)				649			
PHF				0.85			
Total Lanes				2			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				3.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.985			
f_P				1.00			
Off Flow (pcph)				775			
Off Flow (pcphpl)				387			
Calculate Off Ramp Roa							
Off Ramp Type				Right			
Off Ramp Speed				45			
Off Ramp Cap (pcph)				4,200			
Off Ramp v/c ratio				0.18			
Determine Adjacent Ra							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influen							
Effective v_P (pcph)		2,941				2,759	2,854
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)		0.588				0.595	0.611
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}		1.000				1.000	1.000
v_{12} (pcph)		2,941				2,759	2,854
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		2,941				2,759	2,854
v_{R12a} (pcph)		3,492				2,898	3,342
Merge Speed Index		0.42				0.36	0.33
Merge Area Speed		55.4				56.7	57.5
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed		55.4				56.7	57.5
Merge v/c ratio		0.76				0.63	0.73
Merge Density		30.1				24.1	23.9
Merge LOS		D				C	C

Location	8	9	10	11	12	13	14

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Calculate Diverge Influe							
Effective v_P (pcph)				3,492			
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)				0.637			
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}				1.000			
v_{12} (pcph)				3,492			
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)				3,492			
Diverge Speed Index				0.37			
Diverge Area Speed				56.5			
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed				56.5			
Diverge v/c ratio				0.79			
Diverge Density				20.8			
Diverge LOS				C			
Calculate On Ramp to C							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to M							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	8	9	10	11	12	13	14

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Calculate Mainline to Of							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purpo							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Location	8	9	10	11	12	13	14

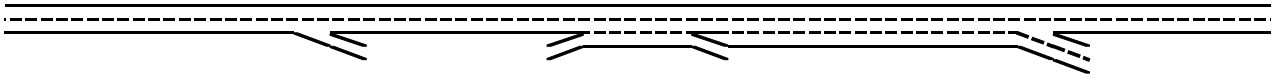
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Calculate Weave Segme							
Weave Type							
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Op							
Segment v/c ratio	0.63	0.76	0.74	0.79	0.59	0.63	0.73
Segment Density	22.7	30.1	27.6	20.8	21.5	24.1	23.9
Segment LOS	C	D	D	C	C	C	C
Over Capacity							

Location	15	16	17	18	19	20	21



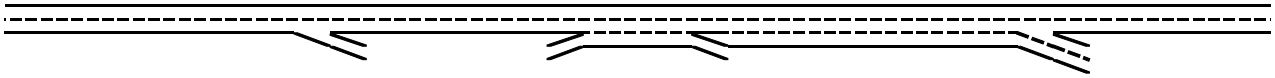
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Define Freeway Segmer							
Type	Basic	Diverge	Basic	Weave	Basic	Basic	Basic
Length (ft)	5,960	1,500	2,590	2,680	900	1,500	2,870
Accel Length							
Decel Length		175					
Mainline Volume	3,113	3,113	2,536	2,536	1,893	1,893	828
On Ramp Volume				352			
Off Ramp Volume		577		995		1,065	
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in G							
GP Volume (vph)	3,113	3,113	2,536	2,888	1,893	1,893	828
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	3	3	3	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,342	3,342	2,723	3,101	2,032	2,032	889
GP Flow (pcphpl)	1,671	1,671	1,361	1,034	677	677	445
Calculate Speed in Gen							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in							
v/c ratio	0.71	0.71	0.58	0.44	0.29	0.29	0.19
Speed (mph)	64.0	64.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	26.1	26.1	20.9	15.9	10.4	10.4	6.8
LOS	D	D	C	B	A	A	A
Calculate Operations fo							
GP_{IN} Vol (pcph)		3,342		2,725			
GP_{IN} Cap (pcph)		4,700		4,700			
GP_{IN} v/c ratio		0.71		0.58			
Calculate Operations fo							
GP_{OUT} Vol (pcph)		2,722		1,877		798	
GP_{OUT} Cap (pcph)		4,700		4,700		4,700	
GP_{OUT} v/c ratio		0.58		0.40		0.17	

Location	15	16	17	18	19	20	21



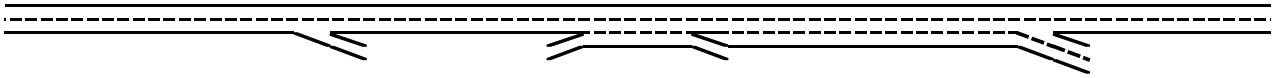
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Calculate Flow Rate in I							
Calculate Speed in Expi							
Calculate Operations in							
Calculate On Ramp Flo							
On Volume (vph)				352			
PHF				0.95			
Total Lanes				1			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				3.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.985			
f_P				1.00			
On Flow (pcph)				376			
On Flow (pcphpl)				376			
Calculate On Ramp Roa							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.18			

Location	15	16	17	18	19	20	21



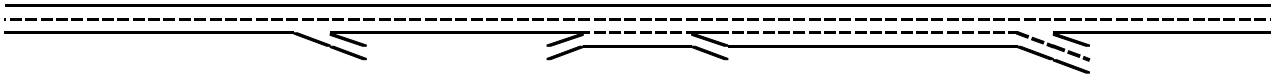
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Calculate Off Ramp Flo							
Off Volume (vph)		577		995		1,065	
PHF		0.94		0.825		0.88	
Total Lanes		1		1		2	
Terrain		Level		Level		Level	
Grade %		0.0%		0.0%		0.0%	
Grade Length (mi)		0.00		0.00		0.00	
Truck & Bus %		2.0%		3.0%		4.0%	
RV %		0.0%		0.0%		0.0%	
E_T		1.5		1.5		1.5	
E_R		1.2		1.2		1.2	
f_{HV}		0.990		0.985		0.980	
f_P		1.00		1.00		1.00	
Off Flow (pcph)		620		1,224		1,234	
Off Flow (pcphpl)		620		1,224		617	
Calculate Off Ramp Roa							
Off Ramp Type		Right		Right		Right	
Off Ramp Speed		45		45		45	
Off Ramp Cap (pcph)		2,100		2,100		4,200	
Off Ramp v/c ratio		0.30		0.58		0.29	
Determine Adjacent Ra							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influen							
Effective v_P (pcph)							
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)							
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}							
v_{12} (pcph)							
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							
v_{R12a} (pcph)							
Merge Speed Index							
Merge Area Speed							
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Merge v/c ratio							
Merge Density							
Merge LOS							

Location	15	16	17	18	19	20	21



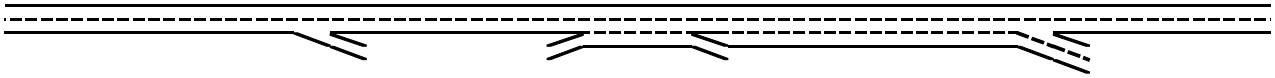
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Calculate Diverge Influe							
Effective v_P (pcph)		3,342					
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)		0.648					
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		1.000					
v_{12} (pcph)		3,342					
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		3,342					
Diverge Speed Index		0.35					
Diverge Area Speed		56.9					
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed		56.9					
Diverge v/c ratio		0.76					
Diverge Density		31.4					
Diverge LOS		D					
Calculate On Ramp to C							
On to Off Volume (vph)				35			
PHF				0.8			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				3.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.985			
f_P				1.00			
On to Off Flow (pcph)				45			
Calculate On Ramp to M							
On to ML Volume (vph)				317			
PHF				0.8			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				7.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.966			
f_P				1.00			
On to ML Flow (pcph)				410			

Location	15	16	17	18	19	20	21



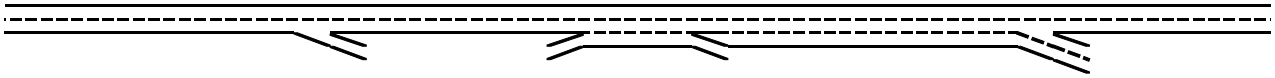
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Calculate Mainline to O							
ML to Off Volume (vph)				960			
PHF				0.83			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				3.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.985			
f_P				1.00			
ML to Off Flow (pcph)				1,174			
Calculate General Purp							
GP to GP Volume (vph)				1,576			
PHF				0.825			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				3.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.985			
f_P				1.00			
GP to GP Flow (pcph)				1,939			

Location	15	16	17	18	19	20	21



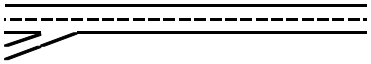
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Calculate Weave Segme							
Weave Type				One-sided			
Weave Length				1,680			
Segment Lanes				3			
Weave Lanes				3			
Weave Flow (pcph)				1,584			
Non-Weave Flow				1,984			
Segment Flow				3,567			
Max Weave Length				5,612			
Length Check				OK			
Ideal Weave Capacity				2,049			
f_{HV}				0.983			
f_P				0.996			
Capacity Condition 1				6,020			
Capacity Condition 2				7,721			
Weave v/c ratio				0.58			
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Op							
Segment v/c ratio	0.71	0.76	0.58	0.58	0.29	0.29	0.19
Segment Density	26.1	31.4	20.9		10.4	10.4	6.8
Segment LOS	D	D	C		A	A	A
Over Capacity							

Location	22	23



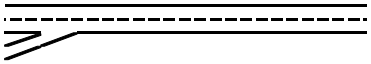
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segmer		
Type	Merge	Basic
Length (ft)	1,500	8,600
Accel Length	600	
Decel Length		
Mainline Volume	828	915
On Ramp Volume	87	
Off Ramp Volume		
Express Lane Volume		
EL On Ramp Volume		
EL Off Ramp Volume		
Calculate Flow Rate in G		
GP Volume (vph)	915	915
PHF	0.95	0.95
GP Lanes	2	2
Terrain	Level	Level
Grade %	0.0%	0.0%
Grade Length (mi)	0.00	0.00
Truck & Bus %	4.0%	4.0%
RV %	0.0%	0.0%
E_T	1.5	1.5
E_R	1.2	1.2
f_{HV}	0.980	0.980
f_P	1.00	1.00
GP Flow (pcph)	982	982
GP Flow (pcphpl)	491	491
Calculate Speed in Gen		
Lane Width (ft)		
Shoulder Width		
TRD		
f_{LW}		
f_{LC}		
Calculated FFS		
Measured FFS		
FFS Curve	65	65
Calculate Operations in		
v/c ratio	0.21	0.21
Speed (mph)	65.0	65.0
Density (pcphpl)	7.6	7.6
LOS	A	A
Calculate Operations fo		
GP_{IN} Vol (pcph)	884	
GP_{IN} Cap (pcph)	4,700	
GP_{IN} v/c ratio	0.19	
Calculate Operations fo		
GP_{OUT} Vol (pcph)	982	
GP_{OUT} Cap (pcph)	4,700	
GP_{OUT} v/c ratio	0.21	

Location	22	23



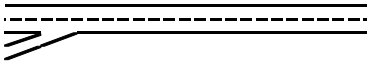
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in		
Calculate Speed in Exp		
Calculate Operations in		
Calculate On Ramp Flo		
On Volume (vph)	87	
PHF	0.9	
Total Lanes	1	
Terrain	Level	
Grade %	0.0%	
Grade Length (mi)	0.00	
Truck & Bus %	4.0%	
RV %	0.0%	
E_T	1.5	
E_R	1.2	
f_{HV}	0.980	
f_P	1.00	
On Flow (pcph)	99	
On Flow (pcphpl)	99	
Calculate On Ramp Roa		
On Ramp Type	Right	
On Ramp Speed (mph)	45	
On Ramp Cap (pcph)	2,100	
On Ramp v/c ratio	0.05	

Location	22	23



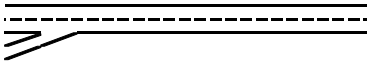
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flo		
Off Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
Off Flow (pcph)		
Off Flow (pcphpl)		
Calculate Off Ramp Roa		
Off Ramp Type		
Off Ramp Speed		
Off Ramp Cap (pcph)		
Off Ramp v/c ratio		
Determine Adjacent Ra		
Up Type		
Up Distance		
Up Flow (pcph)		
Down Type		
Down Distance		
Down Flow (pcph)		
Calculate Merge Influen		
Effective v_P (pcph)	884	
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FM} (Eqn 13-3)	0.594	
P_{FM} (Eqn 13-4)		
P_{FM} (Eqn 13-5)		
P_{FM}	1.000	
v_{12} (pcph)	884	
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)	884	
v_{R12a} (pcph)	982	
Merge Speed Index	0.28	
Merge Area Speed	58.6	
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed	58.6	
Merge v/c ratio	0.21	
Merge Density	9.3	
Merge LOS	A	

Location	22	23



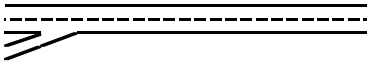
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influe		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FD} (Eqn 13-9)		
P_{FD} (Eqn 13-10)		
P_{FD} (Eqn 13-11)		
P_{FD}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
Diverge Speed Index		
Diverge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Diverge v/c ratio		
Diverge Density		
Diverge LOS		
Calculate On Ramp to C		
On to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to Off Flow (pcph)		
Calculate On Ramp to M		
On to ML Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to ML Flow (pcph)		

Location	22	23



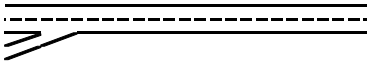
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to O		
ML to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
ML to Off Flow (pcph)		
Calculate General Purp		
GP to GP Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
GP to GP Flow (pcph)		

Location	22	23



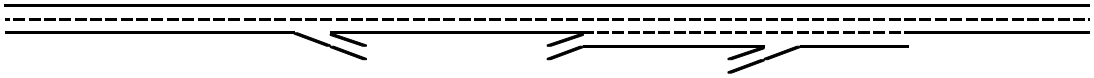
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segme		
Weave Type		
Weave Length		
Segment Lanes		
Weave Lanes		
Weave Flow (pcph)		
Non-Weave Flow		
Segment Flow		
Max Weave Length		
Length Check		
Ideal Weave Capacity		
f_{HV}		
f_P		
Capacity Condition 1		
Capacity Condition 2		
Weave v/c ratio		
Interchange Density		
Lane Changes On to ML		
Lane Changes ML to Off		
Lane Changes On to Off		
Min Lane Change Rate		
Weave LC Rate		
Non-Weave LC Rate 1		
Non-Weave LC Rate 2		
Non-Weave LC Rate 3		
Segment LC Rate		
Weave Intensity Factor		
Weave Speed		
Non-Weave Speed		
Segment Speed		
Weave Density		
Weave LOS		
Summarize Segment Op		
Segment v/c ratio	0.21	0.21
Segment Density	9.3	7.6
Segment LOS	A	A
Over Capacity		

Location	1	2	3	4	5	6



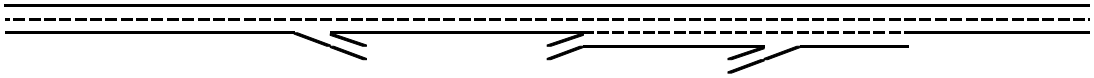
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Define Freeway Segment						
Type	Basic	Diverge	Basic	Basic	Merge	Basic
Length (ft)	8,330	1,500	1,800	1,000	1,500	870
Accel Length					720	
Decel Length		150				
Mainline Volume	959	959	878	878	1,577	2,121
On Ramp Volume				699	544	
Off Ramp Volume		81				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	959	959	878	1,577	2,121	2,121
PHF	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	2	2	2	3	3	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	1,076	1,076	985	1,770	2,380	2,380
GP Flow (pcphpl)	538	538	493	590	793	1,190
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.23	0.23	0.21	0.25	0.34	0.51
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	8.3	8.3	7.6	9.1	12.2	18.3
LOS	A	A	A	A	B	C
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)		1,076		966	1,641	
GP_{IN} Cap (pcph)		4,700		4,700	7,050	
GP_{IN} v/c ratio		0.23		0.21	0.23	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)		983			2,380	
GP_{OUT} Cap (pcph)		4,700			7,050	
GP_{OUT} v/c ratio		0.21			0.34	

Location	1	2	3	4	5	6



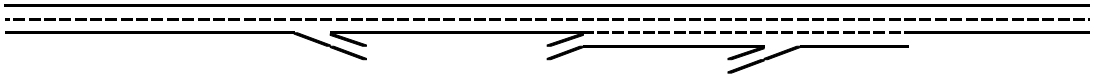
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)				699	544	
PHF				0.878	0.743	
Total Lanes				1	1	
Terrain				Level	Level	
Grade %				0.0%	0.0%	
Grade Length (mi)				0.00	0.00	
Truck & Bus %				2.0%	2.0%	
RV %				0.0%	0.0%	
E_T				1.5	1.5	
E_R				1.2	1.2	
f_{HV}				0.990	0.990	
f_P				1.00	1.00	
On Flow (pcph)				804	739	
On Flow (pcphpl)				804	739	
Calculate On Ramp Roadway Operations						
On Ramp Type				Right	Right	
On Ramp Speed (mph)				25	45	
On Ramp Cap (pcph)				1,900	2,100	
On Ramp v/c ratio				0.42	0.35	

Location	1	2	3	4	5	6



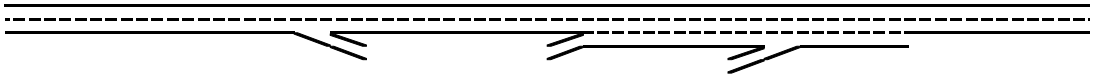
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Off Ramp Flow Rate						
Off Volume (vph)		81				
PHF		0.88				
Total Lanes		1				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		93				
Off Flow (pcphpl)		93				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		2,100				
Off Ramp v/c ratio		0.04				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type					On	
Up Distance					1,000	
Up Flow (pcph)					804	
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)					1,641	
Up Ramp L_{EQ}					780	
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)					0.598	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}					0.598	
v_{12} (pcph)					981	
v_3 (pcph)					660	
v_{34} (pcph)						
v_{12a} (pcph)					981	
v_{R12a} (pcph)					1,720	
Merge Speed Index					0.28	
Merge Area Speed					58.6	
Outer Lanes Volume					660	
Outer Lanes Speed					64.4	
Segment Speed					60.1	
Merge v/c ratio					0.37	
Merge Density					14.0	
Merge LOS					B	

Location	1	2	3	4	5	6



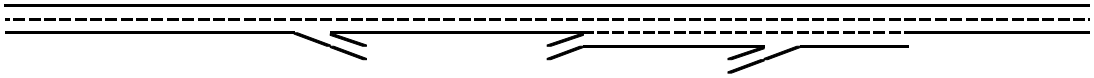
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)		1,076				
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)		0.729				
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}		1.000				
v_{12} (pcph)		1,076				
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)		1,076				
Diverge Speed Index		0.31				
Diverge Area Speed		58.0				
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed		58.0				
Diverge v/c ratio		0.24				
Diverge Density		12.2				
Diverge LOS		B				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	1	2	3	4	5	6



Key

<> Express Lane (HOV)

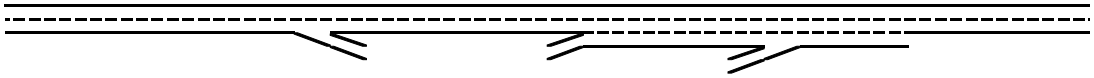
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

Existing Conditions
Time Period: 2014 AM Peak Hour

Location	1	2	3	4	5	6



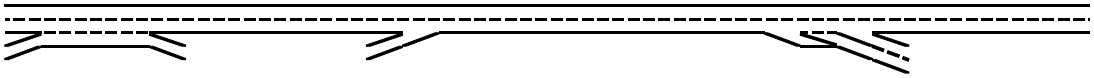
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.23	0.24	0.21	0.25	0.37	0.51
Segment Density	8.3	12.2	7.6	9.1	14.0	18.3
Segment LOS	A	B	A	A	B	C
Over Capacity						

Location	7	8	9	10	11	12



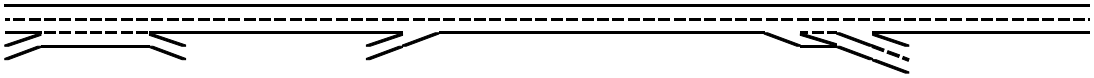
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Basic	Diverge	Basic
Length (ft)	3,050	1,120	1,500	7,650	1,500	2,000
Accel Length			450			
Decel Length					1,500	
Mainline Volume	2,121	2,496	2,496	3,068	3,068	2,508
On Ramp Volume	886		572			
Off Ramp Volume	511				560	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,007	2,496	3,068	3,068	3,068	2,508
PHF	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,375	2,801	3,443	3,443	3,443	2,815
GP Flow (pcphpl)	1,125	1,401	1,721	1,721	1,721	1,407
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.48	0.60	0.73	0.73	0.73	0.60
Speed (mph)	65.0	65.0	63.5	63.5	63.5	65.0
Density (pcphpl)	17.3	21.5	27.1	27.1	27.1	21.7
LOS	B	C	D	D	D	C
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	2,372		2,828		3,443	
GP_{IN} Cap (pcph)	4,700		4,700		4,700	
GP_{IN} v/c ratio	0.50		0.60		0.73	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	2,636		3,443		2,708	
GP_{OUT} Cap (pcph)	4,700		4,700		4,700	
GP_{OUT} v/c ratio	0.56		0.73		0.58	

Location	7	8	9	10	11	12



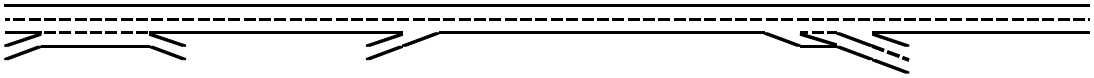
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5		1.5	1.5
E_R	1.2	1.2	1.2		1.2	1.2
f_{HV}	0.990	0.990	0.990		0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	886		572			
PHF	0.893		0.94			
Total Lanes	1		1			
Terrain	Level		Level			
Grade %	0.0%		0.0%			
Grade Length (mi)	0.00		0.00			
Truck & Bus %	2.0%		2.0%			
RV %	0.0%		0.0%			
E_T	1.5		1.5			
E_R	1.2		1.2			
f_{HV}	0.990		0.990			
f_P	1.00		1.00			
On Flow (pcph)	1,002		615			
On Flow (pcphpl)	1,002		615			
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right			
On Ramp Speed (mph)	45		25			
On Ramp Cap (pcph)	2,100		1,900			
On Ramp v/c ratio	0.48		0.32			

Location	7	8	9	10	11	12



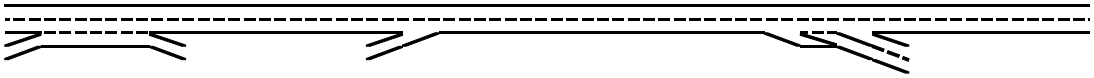
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	511				560	
PHF	0.706				0.77	
Total Lanes	1				2	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	4.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.980				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	738				735	
Off Flow (pcphpl)	738				367	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				4,200	
Off Ramp v/c ratio	0.35				0.17	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			2,828			
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.590			
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000			
v_{12} (pcph)			2,828			
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			2,828			
v_{R12a} (pcph)			3,443			
Merge Speed Index			0.42			
Merge Area Speed			55.3			
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed			55.3			
Merge v/c ratio			0.75			
Merge Density			29.2			
Merge LOS			D			

Location	7	8	9	10	11	12



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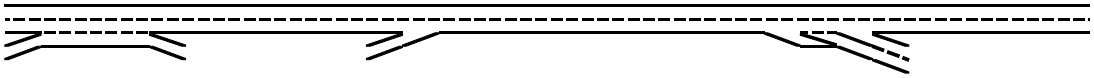
<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					3,443	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.640	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					3,443	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					3,443	
Diverge Speed Index					0.36	
Diverge Area Speed					56.6	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed					56.6	
Diverge v/c ratio					0.78	
Diverge Density					20.4	
Diverge LOS					C	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	89					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	95					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	797					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	852					

Location	7	8	9	10	11	12



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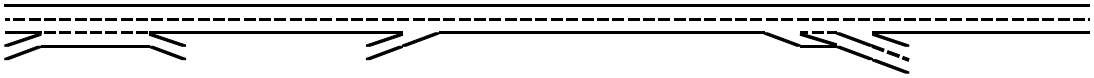
<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	422					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
ML to Off Flow (pcph)	502					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	1,699					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
GP to GP Flow (pcph)	2,018					

Location	7	8	9	10	11	12



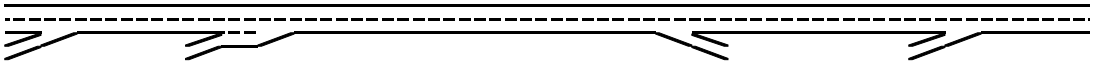
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,050					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	1,354					
Non-Weave Flow	2,113					
Segment Flow	3,467					
Max Weave Length	6,575					
Length Check	OK					
Ideal Weave Capacity	2,004					
f_{HV}	0.989					
f_P	0.996					
Capacity Condition 1	5,922					
Capacity Condition 2	6,055					
Weave v/c ratio	0.58					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.58	0.60	0.75	0.73	0.78	0.60
Segment Density		21.5	29.2	27.1	20.4	21.7
Segment LOS		C	D	D	C	C
Over Capacity						

Location	13	14	15	16	17	18



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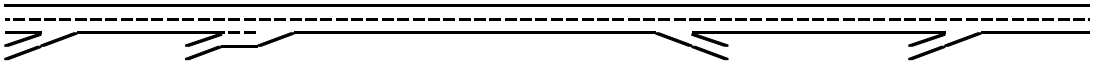
<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Define Freeway Segment						
Type	Merge	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	1,500	770	1,500	1,680	1,000
Accel Length	500	1,450				380
Decel Length				200		
Mainline Volume	2,508	2,986	3,208	3,208	2,633	2,633
On Ramp Volume	478	222				394
Off Ramp Volume				575		
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	2,986	3,208	3,208	3,208	2,633	3,027
PHF	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	2	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,351	3,600	3,600	3,600	2,955	3,397
GP Flow (pcphpl)	1,675	1,800	1,800	1,800	1,477	1,698
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.71	0.77	0.77	0.77	0.63	0.72
Speed (mph)	63.9	62.7	62.7	62.7	64.9	63.7
Density (pcphpl)	26.2	28.7	28.7	28.7	22.8	26.6
LOS	D	D	D	D	C	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	2,805	3,338		3,600		2,952
GP_{IN} Cap (pcph)	4,700	4,700		4,700		4,700
GP_{IN} v/c ratio	0.60	0.71		0.77		0.63
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,351	3,600		2,967		3,397
GP_{OUT} Cap (pcph)	4,700	4,700		4,700		4,700
GP_{OUT} v/c ratio	0.71	0.77		0.63		0.72

Location	13	14	15	16	17	18



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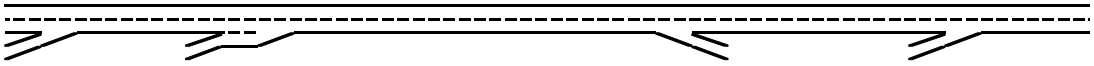
<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5		1.5	1.5	1.5
E_R	1.2	1.2		1.2	1.2	1.2
f_{HV}	0.990	0.990		0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	478	222				394
PHF	0.885	0.854				0.895
Total Lanes	1	1				1
Terrain	Level	Level				Level
Grade %	0.0%	0.0%				0.0%
Grade Length (mi)	0.00	0.00				0.00
Truck & Bus %	2.0%	2.0%				2.0%
RV %	0.0%	0.0%				0.0%
E_T	1.5	1.5				1.5
E_R	1.2	1.2				1.2
f_{HV}	0.990	0.990				0.990
f_P	1.00	1.00				1.00
On Flow (pcph)	546	263				445
On Flow (pcphpl)	546	263				445
Calculate On Ramp Roadway Operations						
On Ramp Type	Right	Right				Right
On Ramp Speed (mph)	25	45				25
On Ramp Cap (pcph)	1,900	2,100				1,900
On Ramp v/c ratio	0.29	0.13				0.23

Location	13	14	15	16	17	18



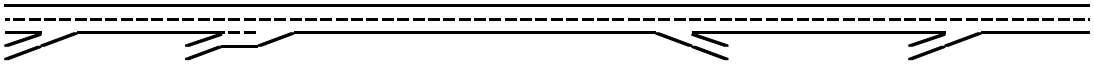
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)				575		
PHF				0.927		
Total Lanes				1		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				4.2%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.979		
f_P				1.00		
Off Flow (pcph)				633		
Off Flow (pcphpl)				633		
Calculate Off Ramp Roadway Operations						
Off Ramp Type				Right		
Off Ramp Speed				45		
Off Ramp Cap (pcph)				2,100		
Off Ramp v/c ratio				0.30		
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)	2,805	3,338				2,952
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)	0.592	0.618				0.588
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}	1.000	1.000				1.000
v_{12} (pcph)	2,805	3,338				2,952
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)	2,805	3,338				2,952
v_{R12a} (pcph)	3,351	3,600				3,397
Merge Speed Index	0.41	0.33				0.42
Merge Area Speed	55.6	57.3				55.4
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed	55.6	57.3				55.4
Merge v/c ratio	0.73	0.78				0.74
Merge Density	28.2	24.3				29.4
Merge LOS	D	C				D

Location	13	14	15	16	17	18



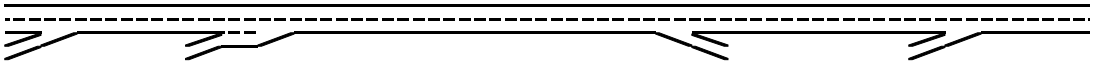
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)				3,600		
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)				0.641		
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}				1.000		
v_{12} (pcph)				3,600		
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)				3,600		
Diverge Speed Index				0.35		
Diverge Area Speed				56.8		
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed				56.8		
Diverge v/c ratio				0.82		
Diverge Density				33.4		
Diverge LOS				D		
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	13	14	15	16	17	18



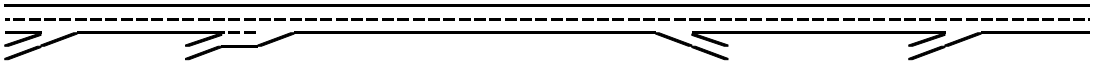
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Location	13	14	15	16	17	18



Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.73	0.78	0.77	0.82	0.63	0.74
Segment Density	28.2	24.3	28.7	33.4	22.8	29.4
Segment LOS	D	C	D	D	C	D
Over Capacity						

Location	19	20	21	22	23	24

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Merge	Diverge	Basic
Length (ft)	3,140	1,610	1,180	1,500	1,500	1,120
Accel Length			550	580		
Decel Length					140	
Mainline Volume	3,027	3,092	3,092	3,491	3,990	3,278
On Ramp Volume	812		399	499		
Off Ramp Volume	747				712	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,839	3,092	3,491	3,990	3,990	3,278
PHF	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.2%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.979	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,355	3,470	3,918	4,478	4,478	3,679
GP Flow (pcphpl)	1,452	1,735	1,959	2,239	2,239	1,839
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.62	0.74	0.83	0.95	0.95	0.78
Speed (mph)	65.0	63.4	60.6	55.0	55.0	62.3
Density (pcphpl)	22.3	27.4	32.3	40.7	40.7	29.5
LOS	C	D	D	E	E	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	3,471		3,493	3,947	4,478	
GP_{IN} Cap (pcph)	4,700		4,700	4,700	4,700	
GP_{IN} v/c ratio	0.74		0.74	0.84	0.95	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,495		3,918	4,478	3,721	
GP_{OUT} Cap (pcph)	4,700		4,700	4,700	4,700	
GP_{OUT} v/c ratio	0.74		0.83	0.95	0.79	

Location	19	20	21	22	23	24

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	812		399	499		
PHF	0.94		0.95	0.95		
Total Lanes	1		1	1		
Terrain	Level		Level	Level		
Grade %	0.0%		0.0%	0.0%		
Grade Length (mi)	0.00		0.00	0.00		
Truck & Bus %	4.6%		2.0%	2.0%		
RV %	0.0%		0.0%	0.0%		
E_T	1.5		1.5	1.5		
E_R	1.2		1.2	1.2		
f_{HV}	0.978		0.990	0.990		
f_P	1.00		1.00	1.00		
On Flow (pcph)	884		424	531		
On Flow (pcphpl)	884		424	531		
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right	Right		
On Ramp Speed (mph)	45		25	45		
On Ramp Cap (pcph)	2,100		1,900	2,100		
On Ramp v/c ratio	0.42		0.22	0.25		

Location	19	20	21	22	23	24

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	747				712	
PHF	0.877				0.95	
Total Lanes	1				1	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	2.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.990				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	860				757	
Off Flow (pcphpl)	860				757	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				2,100	
Off Ramp v/c ratio	0.41				0.36	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,493	3,947		
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.593	0.594		
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000	1.000		
v_{12} (pcph)			3,493	3,947		
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			3,493	3,947		
v_{R12a} (pcph)			3,918	4,478		
Merge Speed Index			0.49	0.61		
Merge Area Speed			53.7	50.9		
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed			53.7	50.9		
Merge v/c ratio			0.85	0.97		
Merge Density			32.4	36.5		
Merge LOS			D	E		

Location	19	20	21	22	23	24

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					4,478	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.613	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					4,478	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					4,478	
Diverge Speed Index					0.37	
Diverge Area Speed					56.6	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed					56.6	
Diverge v/c ratio					1.02	
Diverge Density					41.5	
Diverge LOS					F	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	81					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	87					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	731					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	781					

Location	19	20	21	22	23	24

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	666					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	6.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.971					
f_P	1.00					
ML to Off Flow (pcph)	722					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	2,361					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	6.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.971					
f_P	1.00					
GP to GP Flow (pcph)	2,560					

Location	19	20	21	22	23	24

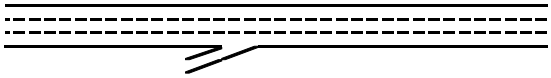
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,140					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	1,503					
Non-Weave Flow	2,647					
Segment Flow	4,149					
Max Weave Length	6,260					
Length Check	OK					
Ideal Weave Capacity	2,035					
f_{HV}	0.974					
f_P	0.997					
Capacity Condition 1	5,928					
Capacity Condition 2	6,436					
Weave v/c ratio	0.68					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.68	0.74	0.85	0.97	1.02	0.78
Segment Density		27.4	32.4	36.5	-	29.5
Segment LOS		D	D	E	F	D
Over Capacity					Diverge	

Location	25	26	27



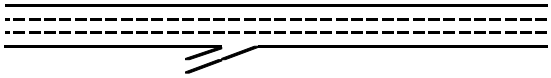
Key

<> Express Lane (HOV)

No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segment			
Type	Basic	Merge	Basic
Length (ft)	1,950	1,500	750
Accel Length		590	
Decel Length			
Mainline Volume	3,278	3,278	3,999
On Ramp Volume		721	
Off Ramp Volume			
Express Lane Volume			
EL On Ramp Volume			
EL Off Ramp Volume			
Calculate Flow Rate in General Purpose Lanes (GP			
GP Volume (vph)	3,278	3,999	3,999
PHF	0.9	0.9	0.9
GP Lanes	3	3	3
Terrain	Level	Level	Level
Grade %	100.0%	0.0%	0.0%
Grade Length (mi)	1.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5
E_R	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990
f_P	2.00	1.00	1.00
GP Flow (pcph)	1,839	4,488	4,488
GP Flow (pcphpl)	613	1,496	1,496
Calculate Speed in General Purpose Lanes			
Lane Width (ft)			
Shoulder Width			
TRD			
f_{LW}			
f_{LC}			
Calculated FFS			
Measured FFS			
FFS Curve	65	65	65
Calculate Operations in General Purpose Lanes			
v/c ratio	0.26	0.64	0.64
Speed (mph)	65.0	64.9	64.9
Density (pcphpl)	9.4	23.1	23.1
LOS	A	C	C
Calculate Operations for Entering GP Lanes			
GP_{IN} Vol (pcph)		3,660	
GP_{IN} Cap (pcph)		7,050	
GP_{IN} v/c ratio		0.52	
Calculate Operations for Exiting GP Lanes			
GP_{OUT} Vol (pcph)		4,488	
GP_{OUT} Cap (pcph)		7,050	
GP_{OUT} v/c ratio		0.64	

Location	25	26	27



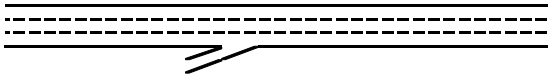
Key

<> Express Lane (HOV)

No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in Express Lanes (EL)			
EL Volume (vph)			
PHF			
Express Lanes	0	0	0
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T		1.5	1.5
E_R		1.2	1.2
f_{HV}		0.990	0.990
f_P			
EL Flow (pcph)			
EL Flow (pcphpl)			
Calculate Speed in Express Lanes			
Lane Width (ft)			
Shoulder Width			
TRD			
f_{LW}			
f_{LC}			
Calc'd FFS			
Measured FFS			
FFS			
Calculate Operations in Express Lanes			
EL_{IN} v/c ratio			
Calculate On Ramp Flow Rate			
On Volume (vph)		721	
PHF		0.88	
Total Lanes		1	
Terrain		Level	
Grade %		0.0%	
Grade Length (mi)		0.00	
Truck & Bus %		2.0%	
RV %		0.0%	
E_T		1.5	
E_R		1.2	
f_{HV}		0.990	
f_P		1.00	
On Flow (pcph)		828	
On Flow (pcphpl)		828	
Calculate On Ramp Roadway Operations			
On Ramp Type		Right	
On Ramp Speed (mph)		45	
On Ramp Cap (pcph)		2,100	
On Ramp v/c ratio		0.39	

Location	25	26	27



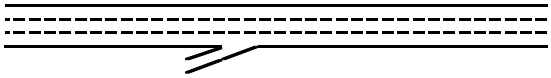
Key

<> Express Lane (HOV)

No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flow Rate			
Off Volume (vph)			
PHF			
Total Lanes			
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T			
E_R			
f_{HV}			
f_P			
Off Flow (pcph)			
Off Flow (pcphpl)			
Calculate Off Ramp Roadway Operations			
Off Ramp Type			
Off Ramp Speed			
Off Ramp Cap (pcph)			
Off Ramp v/c ratio			
Determine Adjacent Ramp for Three-Lane Mainline			
Up Type		No	
Up Distance			
Up Flow (pcph)			
Down Type		No	
Down Distance			
Down Flow (pcph)			
Calculate Merge Influence Area Operations			
Effective v_P (pcph)		3,660	
Up Ramp L_{EQ}			
Down Ramp L_{EQ}			
P_{FM} (Eqn 13-3)		0.594	
P_{FM} (Eqn 13-4)			
P_{FM} (Eqn 13-5)			
P_{FM}		0.594	
v_{12} (pcph)		2,174	
v_3 (pcph)		1,486	
v_{34} (pcph)			
v_{12a} (pcph)		2,174	
v_{R12a} (pcph)		3,002	
Merge Speed Index		0.35	
Merge Area Speed		57.0	
Outer Lanes Volume		1,486	
Outer Lanes Speed		61.5	
Segment Speed		58.4	
Merge v/c ratio		0.65	
Merge Density		24.8	
Merge LOS		C	

Location	25	26	27



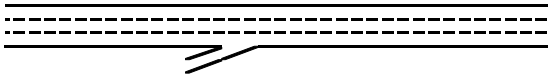
Key

<> Express Lane (HOV)

No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influence Area Operations			
Effective v_P (pcph)			
Up Ramp L_{EQ}			
Down Ramp L_{EQ}			
P_{FD} (Eqn 13-9)			
P_{FD} (Eqn 13-10)			
P_{FD} (Eqn 13-11)			
P_{FD}			
v_{12} (pcph)			
v_3 (pcph)			
v_{34} (pcph)			
v_{12a} (pcph)			
Diverge Speed Index			
Diverge Area Speed			
Outer Lanes Volume			
Outer Lanes Speed			
Segment Speed			
Diverge v/c ratio			
Diverge Density			
Diverge LOS			
Calculate On Ramp to Off Ramp Flow Rate for Wea			
On to Off Volume (vph)			
PHF			
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T			
E_R			
f_{HV}			
f_P			
On to Off Flow (pcph)			
Calculate On Ramp to Mainline Flow Rate for Weav			
On to ML Volume (vph)			
PHF			
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T			
E_R			
f_{HV}			
f_P			
On to ML Flow (pcph)			

Location	25	26	27



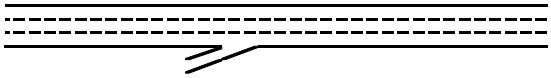
Key

<> Express Lane (HOV)

No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to Off Ramp Flow Rate for Weav			
ML to Off Volume (vph)			
PHF			
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T			
E_R			
f_{HV}			
f_P			
ML to Off Flow (pcph)			
Calculate General Purpose Lanes to General Purpo			
GP to GP Volume (vph)			
PHF			
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T			
E_R			
f_{HV}			
f_P			
GP to GP Flow (pcph)			

Location	25	26	27



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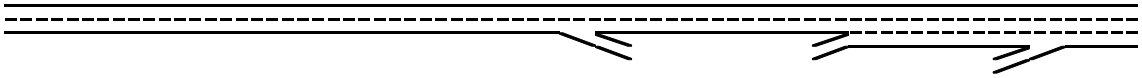
<> Express Lane (HOV)

No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segment Operations			
Weave Type			
Weave Length			
Segment Lanes			
Weave Lanes			
Weave Flow (pcph)			
Non-Weave Flow			
Segment Flow			
Max Weave Length			
Length Check			
Ideal Weave Capacity			
f_{HV}			
f_P			
Capacity Condition 1			
Capacity Condition 2			
Weave v/c ratio			
Interchange Density			
Lane Changes On to ML			
Lane Changes ML to Off			
Lane Changes On to Off			
Min Lane Change Rate			
Weave LC Rate			
Non-Weave LC Rate 1			
Non-Weave LC Rate 2			
Non-Weave LC Rate 3			
Segment LC Rate			
Weave Intensity Factor			
Weave Speed			
Non-Weave Speed			
Segment Speed			
Weave Density			
Weave LOS			
Summarize Segment Operations			
Segment v/c ratio	0.26	0.65	0.64
Segment Density	9.4	24.8	23.1
Segment LOS	A	C	C
Over Capacity			

Location	1	2	3	4	5



Key

<> Express Lane (HOV)

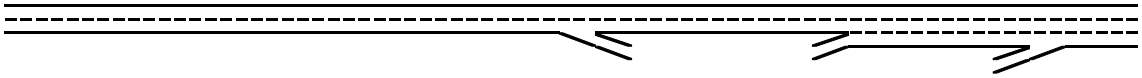
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direc Ramp
Define Freeway Segment					
Type	Basic	Diverge	Basic	Basic	Merge
Length (ft)	8,330	1,500	1,800	1,000	1,500
Accel Length					720
Decel Length		150			
Mainline Volume	883	883	731	731	1,020
On Ramp Volume				289	185
Off Ramp Volume		152			
Express Lane Volume					
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP)					
GP Volume (vph)	883	883	731	1,020	1,205
PHF	0.9	0.9	0.9	0.9	0.9
GP Lanes	2	2	2	3	3
Terrain	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	991	991	820	1,145	1,352
GP Flow (pcphpl)	495	495	410	382	451
Calculate Speed in General Purpose Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calculated FFS					
Measured FFS					
FFS Curve	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.21	0.21	0.17	0.16	0.19
Speed (mph)	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	7.6	7.6	6.3	5.9	6.9
LOS	A	A	A	A	A
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)		991		816	1,138
GP_{IN} Cap (pcph)		4,700		4,700	7,050
GP_{IN} v/c ratio		0.21		0.17	0.16
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)		829			1,352
GP_{OUT} Cap (pcph)		4,700			7,050
GP_{OUT} v/c ratio		0.18			0.19

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

Existing Conditions
Time Period: 2014 AM Peak Hour

Location	1	2	3	4	5



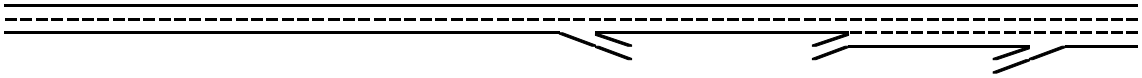
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direc Ramp
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)					
PHF					
Express Lanes	0	0	0	0	0
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P					
EL Flow (pcph)					
EL Flow (pcphpl)					
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS					
FFS					
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio					
Calculate On Ramp Flow Rate					
On Volume (vph)				289	185
PHF				0.881	0.872
Total Lanes				1	1
Terrain				Level	Level
Grade %				0.0%	0.0%
Grade Length (mi)				0.00	0.00
Truck & Bus %				0.3%	1.6%
RV %				0.0%	0.0%
E_T				1.5	1.5
E_R				1.2	1.2
f_{HV}				0.999	0.992
f_P				1.00	1.00
On Flow (pcph)				329	214
On Flow (pcphpl)				329	214
Calculate On Ramp Roadway Operations					
On Ramp Type				Right	Right
On Ramp Speed (mph)				25	45
On Ramp Cap (pcph)				1,900	2,100
On Ramp v/c ratio				0.17	0.10

Location	1	2	3	4	5



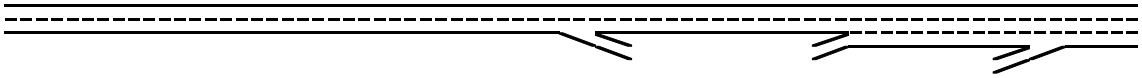
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direc Ramp
Calculate Off Ramp Flow Rate					
Off Volume (vph)		152			
PHF		0.95			
Total Lanes		1			
Terrain		Level			
Grade %		0.0%			
Grade Length (mi)		0.00			
Truck & Bus %		3.0%			
RV %		0.0%			
E_T		1.5			
E_R		1.2			
f_{HV}		0.985			
f_P		1.00			
Off Flow (pcph)		162			
Off Flow (pcphpl)		162			
Calculate Off Ramp Roadway Operations					
Off Ramp Type		Right			
Off Ramp Speed		45			
Off Ramp Cap (pcph)		2,100			
Off Ramp v/c ratio		0.08			
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps					
Up Type					On
Up Distance					1,000
Up Flow (pcph)					329
Down Type					
Down Distance					
Down Flow (pcph)					
Calculate Merge Influence Area Operations					
Effective v_P (pcph)					1,138
Up Ramp L_{EQ}					560
Down Ramp L_{EQ}					
P_{FM} (Eqn 13-3)					0.598
P_{FM} (Eqn 13-4)					
P_{FM} (Eqn 13-5)					
P_{FM}					0.598
v_{12} (pcph)					680
v_3 (pcph)					458
v_{34} (pcph)					
v_{12a} (pcph)					680
v_{R12a} (pcph)					894
Merge Speed Index					0.27
Merge Area Speed					58.9
Outer Lanes Volume					458
Outer Lanes Speed					65.0
Segment Speed					60.8
Merge v/c ratio					0.19
Merge Density					7.8
Merge LOS					A

Location	1	2	3	4	5



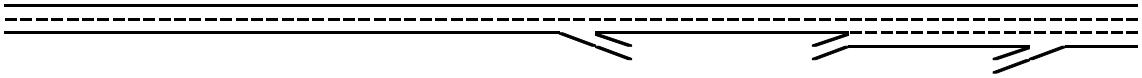
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direc Ramp
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)		991			
Up Ramp L_{EQ}					
Down Ramp L_{EQ}					
P_{FD} (Eqn 13-9)		0.728			
P_{FD} (Eqn 13-10)					
P_{FD} (Eqn 13-11)					
P_{FD}		1.000			
v_{12} (pcph)		991			
v_3 (pcph)					
v_{34} (pcph)					
v_{12a} (pcph)		991			
Diverge Speed Index		0.31			
Diverge Area Speed		57.8			
Outer Lanes Volume					
Outer Lanes Speed					
Segment Speed		57.8			
Diverge v/c ratio		0.23			
Diverge Density		11.4			
Diverge LOS		B			
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments					
On to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to Off Flow (pcph)					
Calculate On Ramp to Mainline Flow Rate for Weave Segments					
On to ML Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to ML Flow (pcph)					

Location	1	2	3	4	5



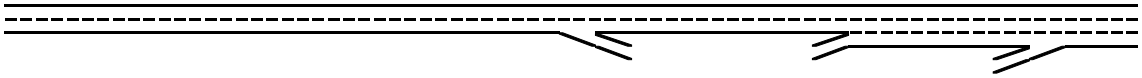
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direc Ramp
Calculate Mainline to Off Ramp Flow Rate for Weave Segments					
ML to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
ML to Off Flow (pcph)					
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments					
GP to GP Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
GP to GP Flow (pcph)					

Location	1	2	3	4	5



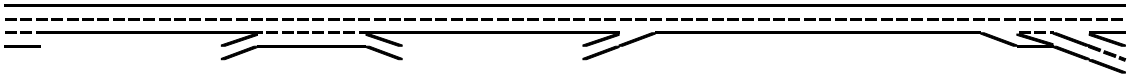
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direc Ramp
Calculate Weave Segment Operations					
Weave Type					
Weave Length					
Segment Lanes					
Weave Lanes					
Weave Flow (pcph)					
Non-Weave Flow					
Segment Flow					
Max Weave Length					
Length Check					
Ideal Weave Capacity					
f_{HV}					
f_P					
Capacity Condition 1					
Capacity Condition 2					
Weave v/c ratio					
Interchange Density					
Lane Changes On to ML					
Lane Changes ML to Off					
Lane Changes On to Off					
Min Lane Change Rate					
Weave LC Rate					
Non-Weave LC Rate 1					
Non-Weave LC Rate 2					
Non-Weave LC Rate 3					
Segment LC Rate					
Weave Intensity Factor					
Weave Speed					
Non-Weave Speed					
Segment Speed					
Weave Density					
Weave LOS					
Summarize Segment Operations					
Segment v/c ratio	0.21	0.23	0.17	0.16	0.19
Segment Density	7.6	11.4	6.3	5.9	7.8
Segment LOS	A	B	A	A	A
Over Capacity					

Location		6	7	8	9	10	11



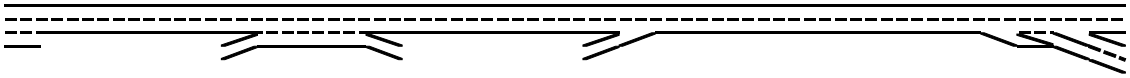
Key

<> Express Lane (HOV)

No Trucks

Name	ct On	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp
Define Freeway Segment							
Type		Basic	Weave	Basic	Merge	Basic	Diverge
Length (ft)		870	3,050	1,120	1,500	7,650	1,500
Accel Length					450		
Decel Length							1,500
Mainline Volume		1,205	1,205	1,610	1,610	2,028	2,028
On Ramp Volume			655		418		
Off Ramp Volume			250				320
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lane							
GP Volume (vph)		1,205	1,860	1,610	2,028	2,028	2,028
PHF		0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes		2	3	2	2	2	2
Terrain		Level	Level	Level	Level	Level	Level
Grade %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)		0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T		1.5	1.5	1.5	1.5	1.5	1.5
E_R		1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}		0.990	0.990	0.990	0.990	0.990	0.990
f_P		1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)		1,352	2,087	1,807	2,276	2,276	2,276
GP Flow (pcphpl)		676	696	903	1,138	1,138	1,138
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve		65	65	65	65	65	65
Calculate Operations in General Purpose Lan							
v/c ratio		0.29	0.30	0.38	0.48	0.48	0.48
Speed (mph)		65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)		10.4	10.7	13.9	17.5	17.5	17.5
LOS		A	A	B	B	B	B
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)			1,344		1,752		2,276
GP_{IN} Cap (pcph)			4,700		4,700		4,700
GP_{IN} v/c ratio			0.29		0.37		0.48
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)			1,807		2,276		1,915
GP_{OUT} Cap (pcph)			4,700		4,700		4,700
GP_{OUT} v/c ratio			0.38		0.48		0.41

Location		6	7	8	9	10	11



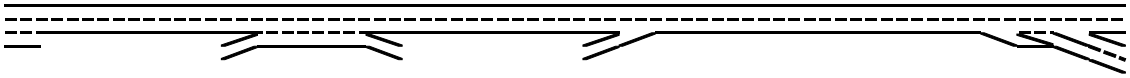
Key

<> Express Lane (HOV)

No Trucks

Name	ct On	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp
Calculate Flow Rate in Express Lanes (EL)							
EL Volume (vph)							
PHF							
Express Lanes		0	0	0	0	0	0
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T			1.5	1.5	1.5		1.5
E_R			1.2	1.2	1.2		1.2
f_{HV}			0.990	0.990	0.990		0.990
f_P							
EL Flow (pcph)							
EL Flow (pcphpl)							
Calculate Speed in Express Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calc'd FFS							
Measured FFS							
FFS							
Calculate Operations in Express Lanes							
EL_{IN} v/c ratio							
Calculate On Ramp Flow Rate							
On Volume (vph)			655		418		
PHF			0.894		0.81		
Total Lanes			1		1		
Terrain			Level		Level		
Grade %			0.0%		0.0%		
Grade Length (mi)			0.00		0.00		
Truck & Bus %			3.0%		3.0%		
RV %			0.0%		0.0%		
E_T			1.5		1.5		
E_R			1.2		1.2		
f_{HV}			0.985		0.985		
f_P			1.00		1.00		
On Flow (pcph)			744		524		
On Flow (pcphpl)			744		524		
Calculate On Ramp Roadway Operations							
On Ramp Type			Right		Right		
On Ramp Speed (mph)			45		25		
On Ramp Cap (pcph)			2,100		1,900		
On Ramp v/c ratio			0.35		0.28		

Location		6	7	8	9	10	11



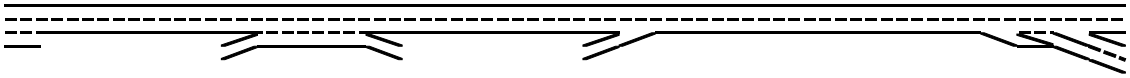
Key

<> Express Lane (HOV)

No Trucks

Name	ct On	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp
Calculate Off Ramp Flow Rate							
Off Volume (vph)			250				320
PHF			0.906				0.9
Total Lanes			1				2
Terrain			Level				Level
Grade %			0.0%				0.0%
Grade Length (mi)			0.00				0.00
Truck & Bus %			3.0%				3.0%
RV %			0.0%				0.0%
E_T			1.5				1.5
E_R			1.2				1.2
f_{HV}			0.985				0.985
f_P			1.00				1.00
Off Flow (pcph)			280				361
Off Flow (pcphpl)			280				180
Calculate Off Ramp Roadway Operations							
Off Ramp Type			Right				Right
Off Ramp Speed			45				45
Off Ramp Cap (pcph)			2,100				4,200
Off Ramp v/c ratio			0.13				0.09
Determine Adjacent Ramp for Three-Lane Ma							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)					1,752		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)					0.590		
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}					1.000		
v_{12} (pcph)					1,752		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)					1,752		
v_{R12a} (pcph)					2,276		
Merge Speed Index					0.34		
Merge Area Speed					57.3		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed					57.3		
Merge v/c ratio					0.49		
Merge Density					20.2		
Merge LOS					C		

Location		6	7	8	9	10	11



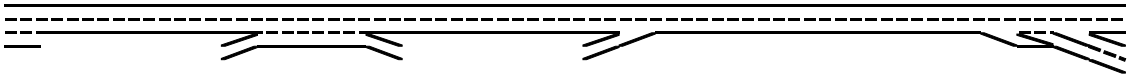
Key

<> Express Lane (HOV)

No Trucks

Name	ct On	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)							2,276
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)							0.687
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}							1.000
v_{12} (pcph)							2,276
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							2,276
Diverge Speed Index							0.33
Diverge Area Speed							57.4
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							57.4
Diverge v/c ratio							0.52
Diverge Density							10.3
Diverge LOS							B
Calculate On Ramp to Off Ramp Flow Rate fo							
On to Off Volume (vph)			66				
PHF			0.95				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
On to Off Flow (pcph)			70				
Calculate On Ramp to Mainline Flow Rate for							
On to ML Volume (vph)			590				
PHF			0.95				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
On to ML Flow (pcph)			630				

Location		6	7	8	9	10	11



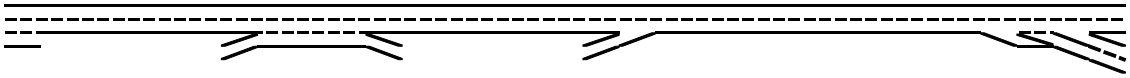
Key

<> Express Lane (HOV)

No Trucks

Name	ct On	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp
Calculate Mainline to Off Ramp Flow Rate for							
ML to Off Volume (vph)			185				
PHF			0.85				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			2.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.990				
f_P			1.00				
ML to Off Flow (pcph)			219				
Calculate General Purpose Lanes to General							
GP to GP Volume (vph)			1,021				
PHF			0.85				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			2.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.990				
f_P			1.00				
GP to GP Flow (pcph)			1,213				

Location		6	7	8	9	10	11



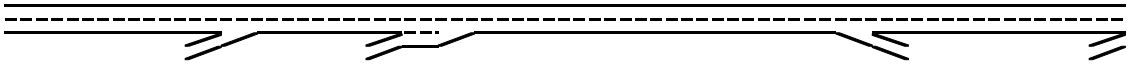
Key

<> Express Lane (HOV)

No Trucks

Name	ct On	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp
Calculate Weave Segment Operations							
Weave Type			One-sided				
Weave Length			2,050				
Segment Lanes			3				
Weave Lanes			2				
Weave Flow (pcph)			849				
Non-Weave Flow			1,283				
Segment Flow			2,132				
Max Weave Length			6,662				
Length Check			OK				
Ideal Weave Capacity			1,997				
f_{HV}			0.988				
f_P			0.996				
Capacity Condition 1			5,897				
Capacity Condition 2			5,930				
Weave v/c ratio			0.36				
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio		0.29	0.36	0.38	0.49	0.48	0.52
Segment Density		10.4		13.9	20.2	17.5	10.3
Segment LOS		A		B	C	B	B
Over Capacity							

Location	12	13	14	15	16	17	



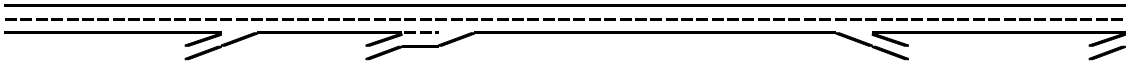
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue
Define Freeway Segment							
Type	Basic	Merge	Merge	Basic	Diverge	Basic	
Length (ft)	2,000	1,500	1,500	770	1,500	1,680	
Accel Length		500	1,450				
Decel Length					200		
Mainline Volume	1,708	1,708	2,385	2,928	2,928	2,354	
On Ramp Volume		677	543				
Off Ramp Volume					574		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lane							
GP Volume (vph)	1,708	2,385	2,928	2,928	2,928	2,354	
PHF	0.9	0.9	0.9	0.9	0.9	0.9	
GP Lanes	2	2	2	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	1,917	2,677	3,286	3,286	3,286	2,642	
GP Flow (pcphpl)	958	1,338	1,643	1,643	1,643	1,321	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lan							
v/c ratio	0.41	0.57	0.70	0.70	0.70	0.56	
Speed (mph)	65.0	65.0	64.2	64.2	64.2	65.0	
Density (pcphpl)	14.7	20.6	25.6	25.6	25.6	20.3	
LOS	B	C	C	C	C	C	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		1,735	2,604		3,286		
GP_{IN} Cap (pcph)		4,700	4,700		4,700		
GP_{IN} v/c ratio		0.37	0.55		0.70		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		2,677	3,286		2,653		
GP_{OUT} Cap (pcph)		4,700	4,700		4,700		
GP_{OUT} v/c ratio		0.57	0.70		0.56		

Location	12	13	14	15	16	17	



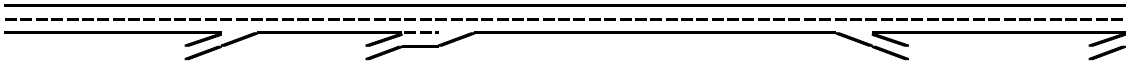
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue
Calculate Flow Rate in Express Lanes (EL)							
EL Volume (vph)							
PHF							
Express Lanes	0	0	0	0	0	0	
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T	1.5	1.5	1.5		1.5	1.5	
E_R	1.2	1.2	1.2		1.2	1.2	
f_{HV}	0.990	0.990	0.990		0.990	0.990	
f_P							
EL Flow (pcph)							
EL Flow (pcphpl)							
Calculate Speed in Express Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calc'd FFS							
Measured FFS							
FFS							
Calculate Operations in Express Lanes							
EL_{IN} v/c ratio							
Calculate On Ramp Flow Rate							
On Volume (vph)		677	543				
PHF		0.73	0.808				
Total Lanes		1	1				
Terrain		Level	Level				
Grade %		0.0%	0.0%				
Grade Length (mi)		0.00	0.00				
Truck & Bus %		3.0%	3.0%				
RV %		0.0%	0.0%				
E_T		1.5	1.5				
E_R		1.2	1.2				
f_{HV}		0.985	0.985				
f_P		1.00	1.00				
On Flow (pcph)		941	682				
On Flow (pcphpl)		941	682				
Calculate On Ramp Roadway Operations							
On Ramp Type		Right	Right				
On Ramp Speed (mph)		25	45				
On Ramp Cap (pcph)		1,900	2,100				
On Ramp v/c ratio		0.50	0.32				

Location	12	13	14	15	16	17	



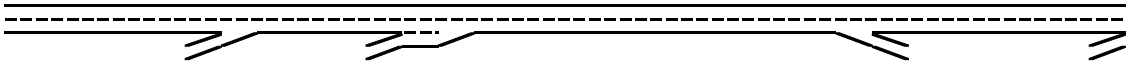
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue
Calculate Off Ramp Flow Rate							
Off Volume (vph)					574		
PHF					0.92		
Total Lanes					1		
Terrain					Level		
Grade %					0.0%		
Grade Length (mi)					0.00		
Truck & Bus %					3.0%		
RV %					0.0%		
E_T					1.5		
E_R					1.2		
f_{HV}					0.985		
f_P					1.00		
Off Flow (pcph)					633		
Off Flow (pcphpl)					633		
Calculate Off Ramp Roadway Operations							
Off Ramp Type					Right		
Off Ramp Speed					45		
Off Ramp Cap (pcph)					2,100		
Off Ramp v/c ratio					0.30		
Determine Adjacent Ramp for Three-Lane Ma							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)		1,735	2,604				
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)		0.592	0.618				
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}		1.000	1.000				
v_{12} (pcph)		1,735	2,604				
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		1,735	2,604				
v_{R12a} (pcph)		2,677	3,286				
Merge Speed Index		0.35	0.29				
Merge Area Speed		56.9	58.2				
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed		56.9	58.2				
Merge v/c ratio		0.58	0.71				
Merge Density		22.8	21.7				
Merge LOS		C	C				

Location	12	13	14	15	16	17	



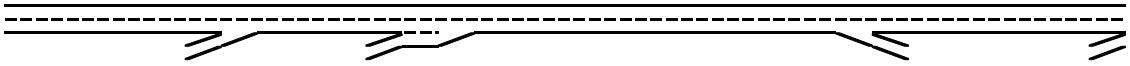
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)					3,286		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)					0.649		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}					1.000		
v_{12} (pcph)					3,286		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)					3,286		
Diverge Speed Index					0.35		
Diverge Area Speed					56.8		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed					56.8		
Diverge v/c ratio					0.75		
Diverge Density					30.7		
Diverge LOS					D		
Calculate On Ramp to Off Ramp Flow Rate fo							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to Mainline Flow Rate for							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	12	13	14	15	16	17	



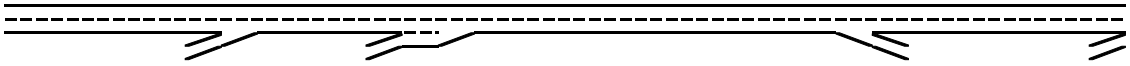
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue
Calculate Mainline to Off Ramp Flow Rate for							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purpose Lanes to General							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Location	12	13	14	15	16	17	



Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue
Calculate Weave Segment Operations							
Weave Type							
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.41	0.58	0.71	0.70	0.75	0.56	
Segment Density	14.7	22.8	21.7	25.6	30.7	20.3	
Segment LOS	B	C	C	C	D	C	
Over Capacity							

Location	18	19	20	21	22	23	

Key

<> Express Lane (HOV)

No Trucks

Name	Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria
Define Freeway Segment							
Type	Merge	Weave	Basic	Merge	Merge	Diverge	
Length (ft)	1,000	3,140	1,610	1,180	1,500	1,500	
Accel Length	380			550	580		
Decel Length						140	
Mainline Volume	2,354	2,766	2,953	2,953	3,228	3,708	
On Ramp Volume	412	848		275	480		
Off Ramp Volume		661				636	
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lane							
GP Volume (vph)	2,766	3,614	2,953	3,228	3,708	3,708	
PHF	0.9	0.9	0.9	0.9	0.9	0.9	
GP Lanes	2	3	2	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	2.0%	4.2%	2.0%	2.0%	2.0%	2.0%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.979	0.990	0.990	0.990	0.990	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	3,104	4,100	3,314	3,623	4,161	4,161	
GP Flow (pcphpl)	1,552	1,367	1,657	1,811	2,081	2,081	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lan							
v/c ratio	0.66	0.58	0.71	0.77	0.89	0.89	
Speed (mph)	64.7	65.0	64.1	62.6	58.4	58.4	
Density (pcphpl)	24.0	21.0	25.9	28.9	35.6	35.6	
LOS	C	C	C	D	E	E	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	2,576	3,117		3,329	3,648	4,161	
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700	4,700	
GP_{IN} v/c ratio	0.55	0.66		0.71	0.78	0.89	
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	3,104	3,276		3,623	4,161	3,482	
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700	4,700	
GP_{OUT} v/c ratio	0.66	0.70		0.77	0.89	0.74	

Location	18	19	20	21	22	23	

Key

<> Express Lane (HOV)

No Trucks

Name	Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria
Calculate Flow Rate in Express Lanes (EL)							
EL Volume (vph)							
PHF							
Express Lanes	0	0	0	0	0	0	
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	
f_P							
EL Flow (pcph)							
EL Flow (pcphpl)							
Calculate Speed in Express Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calc'd FFS							
Measured FFS							
FFS							
Calculate Operations in Express Lanes							
EL_{IN} v/c ratio							
Calculate On Ramp Flow Rate							
On Volume (vph)	412	848		275	480		
PHF	0.792	0.876		0.95	0.95		
Total Lanes	1	1		1	1		
Terrain	Level	Level		Level	Level		
Grade %	0.0%	0.0%		0.0%	0.0%		
Grade Length (mi)	0.00	0.00		0.00	0.00		
Truck & Bus %	3.0%	3.0%		3.0%	3.0%		
RV %	0.0%	0.0%		0.0%	0.0%		
E_T	1.5	1.5		1.5	1.5		
E_R	1.2	1.2		1.2	1.2		
f_{HV}	0.985	0.985		0.985	0.985		
f_P	1.00	1.00		1.00	1.00		
On Flow (pcph)	528	983		294	513		
On Flow (pcphpl)	528	983		294	513		
Calculate On Ramp Roadway Operations							
On Ramp Type	Right	Right		Right	Right		
On Ramp Speed (mph)	25	45		25	45		
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100		
On Ramp v/c ratio	0.28	0.47		0.15	0.24		

Location	18	19	20	21	22	23	

Key

<> Express Lane (HOV)

No Trucks

Name	Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria
Calculate Off Ramp Flow Rate							
Off Volume (vph)		661				636	
PHF		0.814				0.95	
Total Lanes		1				1	
Terrain		Level				Level	
Grade %		0.0%				0.0%	
Grade Length (mi)		0.00				0.00	
Truck & Bus %		3.0%				3.0%	
RV %		0.0%				0.0%	
E_T		1.5				1.5	
E_R		1.2				1.2	
f_{HV}		0.985				0.985	
f_P		1.00				1.00	
Off Flow (pcph)		824				680	
Off Flow (pcphpl)		824				680	
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right				Right	
Off Ramp Speed		45				45	
Off Ramp Cap (pcph)		2,100				2,100	
Off Ramp v/c ratio		0.39				0.32	
Determine Adjacent Ramp for Three-Lane Ma							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)	2,576			3,329	3,648		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)	0.588			0.593	0.594		
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}	1.000			1.000	1.000		
v_{12} (pcph)	2,576			3,329	3,648		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)	2,576			3,329	3,648		
v_{R12a} (pcph)	3,104			3,623	4,161		
Merge Speed Index	0.39			0.44	0.52		
Merge Area Speed	56.1			54.9	53.1		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed	56.1			54.9	53.1		
Merge v/c ratio	0.67			0.79	0.90		
Merge Density	27.1			30.1	34.1		
Merge LOS	C			D	D		

Location	18	19	20	21	22	23	

Key

<> Express Lane (HOV)

No Trucks

Name	Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)						4,161	
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)						0.625	
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}						1.000	
v_{12} (pcph)						4,161	
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)						4,161	
Diverge Speed Index						0.36	
Diverge Area Speed						56.7	
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed						56.7	
Diverge v/c ratio						0.95	
Diverge Density						38.8	
Diverge LOS						E	
Calculate On Ramp to Off Ramp Flow Rate fo							
On to Off Volume (vph)		85					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to Off Flow (pcph)		91					
Calculate On Ramp to Mainline Flow Rate for							
On to ML Volume (vph)		763					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to ML Flow (pcph)		815					

Location	18	19	20	21	22	23	

Key

<> Express Lane (HOV)

No Trucks

Name	Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria
Calculate Mainline to Off Ramp Flow Rate for							
ML to Off Volume (vph)		576					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		6.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.971					
f_P		1.00					
ML to Off Flow (pcph)		625					
Calculate General Purpose Lanes to General							
GP to GP Volume (vph)		2,190					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		6.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.971					
f_P		1.00					
GP to GP Flow (pcph)		2,374					

Location	18	19	20	21	22	23	

Key

<> Express Lane (HOV)

No Trucks

Name	Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria
Calculate Weave Segment Operations							
Weave Type		One-sided					
Weave Length		2,140					
Segment Lanes		3					
Weave Lanes		2					
Weave Flow (pcph)		1,440					
Non-Weave Flow		2,465					
Segment Flow		3,905					
Max Weave Length		6,334					
Length Check		OK					
Ideal Weave Capacity		2,029					
f_{HV}		0.974					
f_P		0.997					
Capacity Condition 1		5,912					
Capacity Condition 2		6,320					
Weave v/c ratio		0.64					
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.67	0.64	0.71	0.79	0.90	0.95	
Segment Density	27.1		25.9	30.1	34.1	38.8	
Segment LOS	C		C	D	D	E	
Over Capacity							

Location	24	25	26	27

Key

<> Express Lane (HOV)

No Trucks

Name	Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segment				
Type	Basic	Basic	Merge	Basic
Length (ft)	1,120	1,950	1,500	750
Accel Length			590	
Decel Length				
Mainline Volume	3,072	3,072	3,072	4,119
On Ramp Volume			1,047	
Off Ramp Volume				
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Calculate Flow Rate in General Purpose Lane				
GP Volume (vph)	3,072	3,072	4,119	4,119
PHF	0.9	0.9	0.9	0.9
GP Lanes	2	3	3	3
Terrain	Level	Level	Level	Level
Grade %	0.0%	100.0%	0.0%	0.0%
Grade Length (mi)	0.00	1.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990
f_P	1.00	2.00	1.00	1.00
GP Flow (pcph)	3,447	1,724	4,622	4,622
GP Flow (pcphpl)	1,724	575	1,541	1,541
Calculate Speed in General Purpose Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	65	65	65	65
Calculate Operations in General Purpose Lan				
v/c ratio	0.73	0.24	0.66	0.66
Speed (mph)	63.5	65.0	64.7	64.7
Density (pcphpl)	27.1	8.8	23.8	23.8
LOS	D	A	C	C
Calculate Operations for Entering GP Lanes				
GP_{IN} Vol (pcph)			3,504	
GP_{IN} Cap (pcph)			7,050	
GP_{IN} v/c ratio			0.50	
Calculate Operations for Exiting GP Lanes				
GP_{OUT} Vol (pcph)			4,622	
GP_{OUT} Cap (pcph)			7,050	
GP_{OUT} v/c ratio			0.66	

Location	24	25	26	27

Key

<> Express Lane (HOV)

No Trucks

Name	Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in Express Lanes (EL)				
EL Volume (vph)				
PHF				
Express Lanes	0	0	0	0
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T	1.5		1.5	1.5
E_R	1.2		1.2	1.2
f_{HV}	0.990		0.990	0.990
f_P				
EL Flow (pcph)				
EL Flow (pcphpl)				
Calculate Speed in Express Lanes				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calc'd FFS				
Measured FFS				
FFS				
Calculate Operations in Express Lanes				
EL_{IN} v/c ratio				
Calculate On Ramp Flow Rate				
On Volume (vph)			1,047	
PHF			0.95	
Total Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			3.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.985	
f_P			1.00	
On Flow (pcph)			1,119	
On Flow (pcphpl)			1,119	
Calculate On Ramp Roadway Operations				
On Ramp Type			Right	
On Ramp Speed (mph)			45	
On Ramp Cap (pcph)			2,100	
On Ramp v/c ratio			0.53	

Location	24	25	26	27

Key

<> Express Lane (HOV)

No Trucks

Name	Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flow Rate				
Off Volume (vph)				
PHF				
Total Lanes				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
Off Flow (pcph)				
Off Flow (pcphpl)				
Calculate Off Ramp Roadway Operations				
Off Ramp Type				
Off Ramp Speed				
Off Ramp Cap (pcph)				
Off Ramp v/c ratio				
Determine Adjacent Ramp for Three-Lane Ma				
Up Type			No	
Up Distance				
Up Flow (pcph)				
Down Type			No	
Down Distance				
Down Flow (pcph)				
Calculate Merge Influence Area Operations				
Effective v_P (pcph)			3,504	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.594	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			0.594	
v_{12} (pcph)			2,081	
v_3 (pcph)			1,422	
v_{34} (pcph)				
v_{12a} (pcph)			2,081	
v_{R12a} (pcph)			3,200	
Merge Speed Index			0.36	
Merge Area Speed			56.6	
Outer Lanes Volume			1,422	
Outer Lanes Speed			61.7	
Segment Speed			58.1	
Merge v/c ratio			0.70	
Merge Density			26.2	
Merge LOS			C	

Location	24	25	26	27

Key

<> Express Lane (HOV)

No Trucks

Name	Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influence Area Operations				
Effective v_P (pcph)				
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)				
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}				
v_{12} (pcph)				
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				
Diverge Speed Index				
Diverge Area Speed				
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				
Diverge v/c ratio				
Diverge Density				
Diverge LOS				
Calculate On Ramp to Off Ramp Flow Rate fo				
On to Off Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
On to Off Flow (pcph)				
Calculate On Ramp to Mainline Flow Rate for				
On to ML Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
On to ML Flow (pcph)				

Location	24	25	26	27

Key

<> Express Lane (HOV)

No Trucks

Name	Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to Off Ramp Flow Rate for				
ML to Off Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
ML to Off Flow (pcph)				
Calculate General Purpose Lanes to General				
GP to GP Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
GP to GP Flow (pcph)				

Location	24	25	26	27

Key

<> Express Lane (HOV)

No Trucks

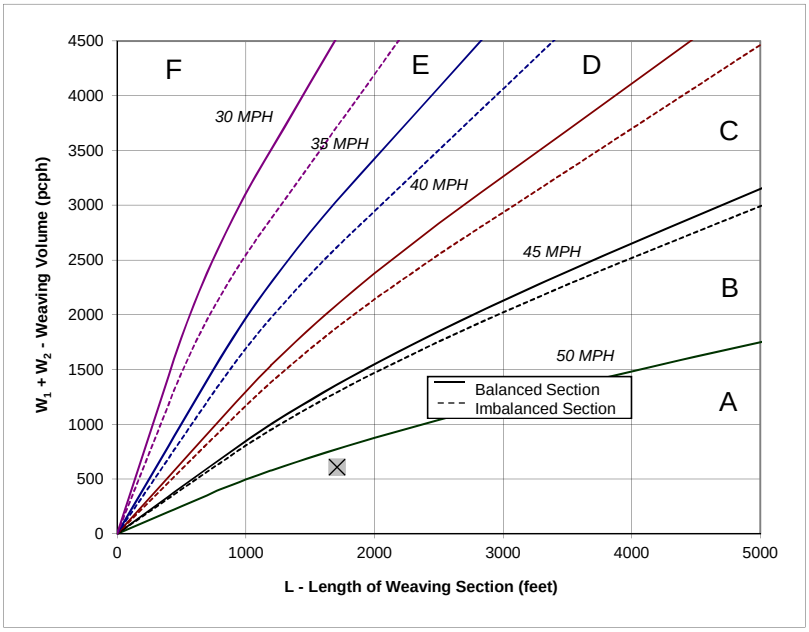
Name	Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segment Operations				
Weave Type				
Weave Length				
Segment Lanes				
Weave Lanes				
Weave Flow (pcph)				
Non-Weave Flow				
Segment Flow				
Max Weave Length				
Length Check				
Ideal Weave Capacity				
f_{HV}				
f_P				
Capacity Condition 1				
Capacity Condition 2				
Weave v/c ratio				
Interchange Density				
Lane Changes On to ML				
Lane Changes ML to Off				
Lane Changes On to Off				
Min Lane Change Rate				
Weave LC Rate				
Non-Weave LC Rate 1				
Non-Weave LC Rate 2				
Non-Weave LC Rate 3				
Segment LC Rate				
Weave Intensity Factor				
Weave Speed				
Non-Weave Speed				
Segment Speed				
Weave Density				
Weave LOS				
Summarize Segment Operations				
Segment v/c ratio	0.73	0.24	0.70	0.66
Segment Density	27.1	8.8	26.2	23.8
Segment LOS	D	A	C	C
Over Capacity				

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	Existing AM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	1,619	Volume (vph)*	199	Volume (vph)*	405
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	1,635	Volume (pcph)	201	Volume (pcph)	409



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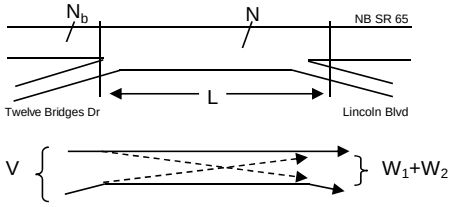


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **51.4**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **545**
6. Level of Service (LOS) **A**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

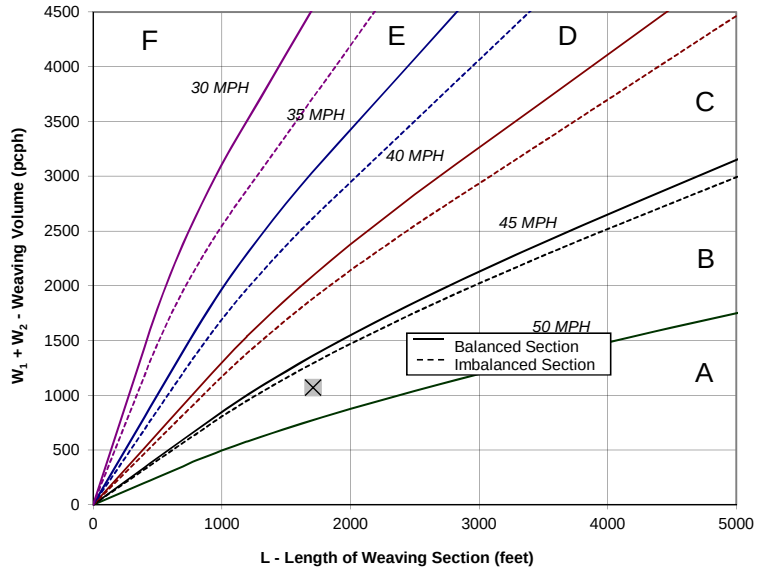
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	Existing PM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	2,888	Volume (vph)*	208	Volume (vph)*	851
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	2,946	Volume (pcph)	210	Volume (pcph)	859



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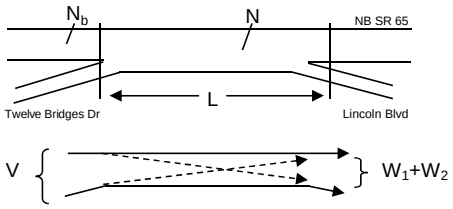


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **47.5**
4. Weaving Intensity Factor (k) **1.96**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,049**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

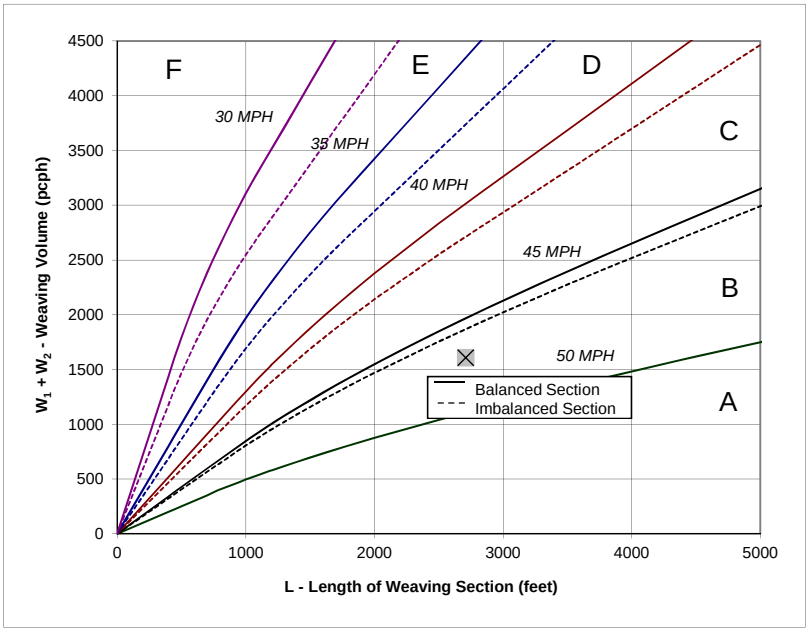
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,710

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	Existing AM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,598	Volume (vph)*	244	Volume (vph)*	1,347
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,634	Volume (pcph)	246	Volume (pcph)	1,360



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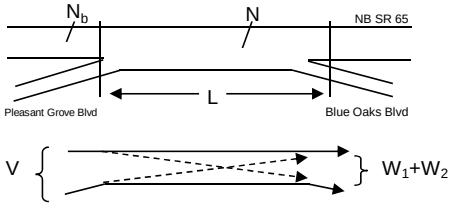


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **47.1**
4. Weaving Intensity Factor (k) **2.09**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,301**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

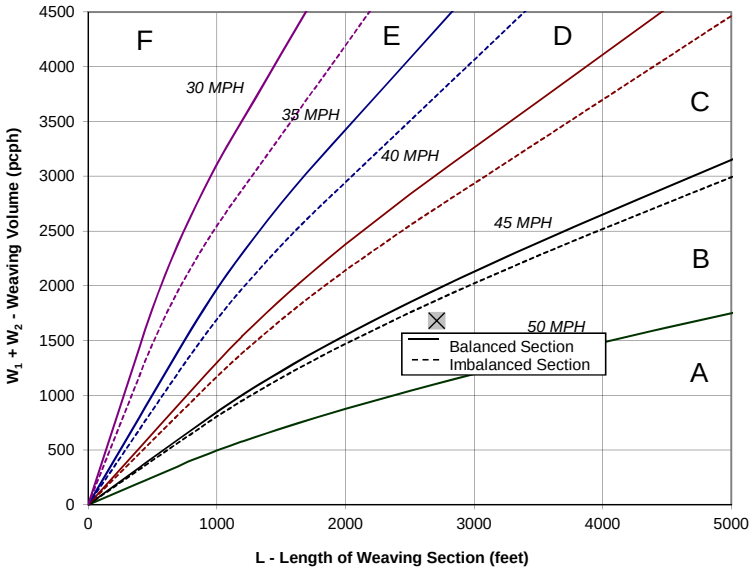
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

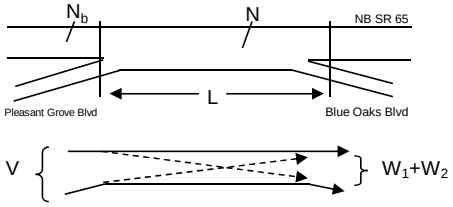
Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,710

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	Existing PM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,915	Volume (vph)*	553	Volume (vph)*	1,112
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,954	Volume (pcph)	558	Volume (pcph)	1,123



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **46.7**
4. Weaving Intensity Factor (k) **1.72**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,453**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

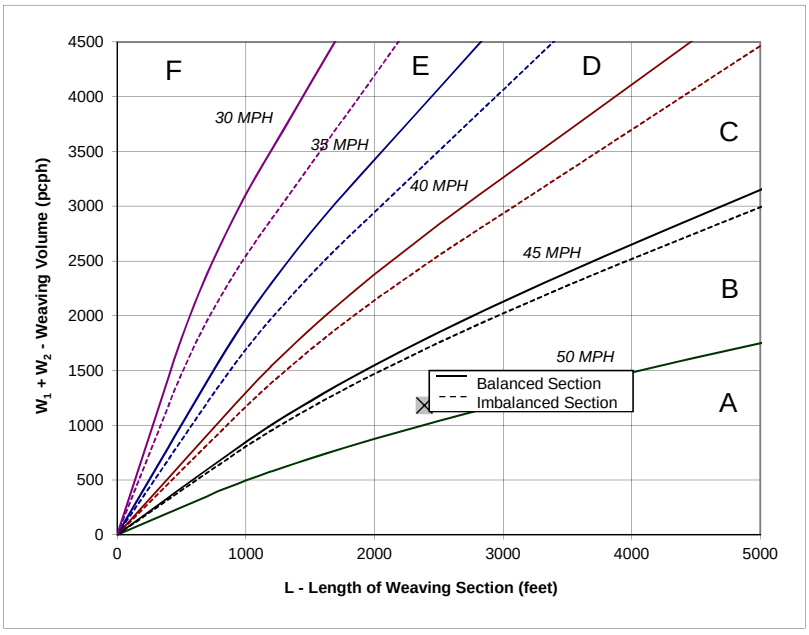
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,390

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	Existing AM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,839	Volume (vph)*	617	Volume (vph)*	552
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,877	Volume (pcph)	623	Volume (pcph)	558



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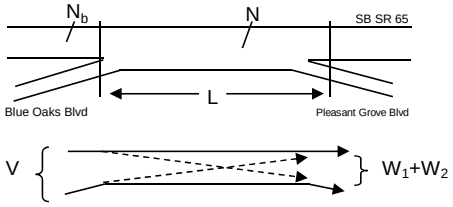


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**45 MPH** and **50 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	48.9
4. Weaving Intensity Factor (k)	1.37
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	1,361
6. Level of Service (LOS)	D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

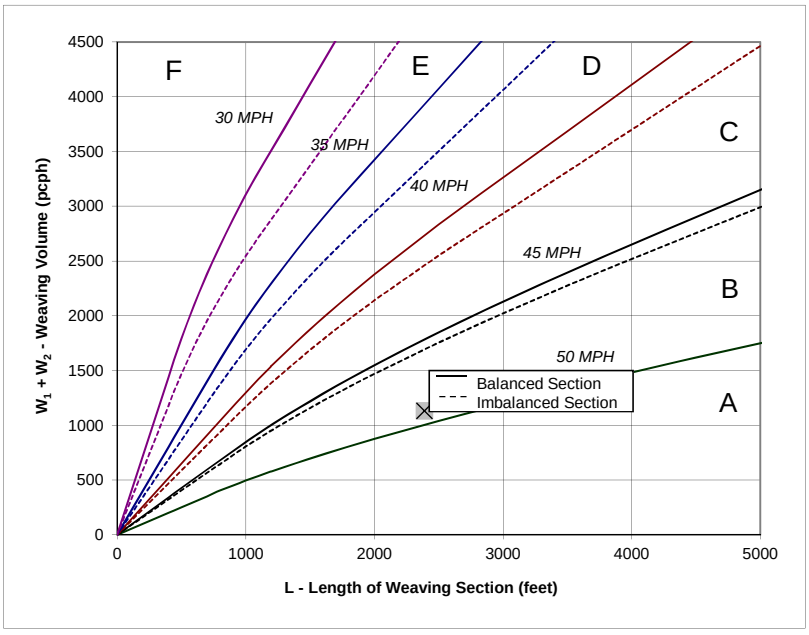
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,390

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	Existing PM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,614	Volume (vph)*	653	Volume (vph)*	466
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,650	Volume (pcph)	659	Volume (pcph)	471



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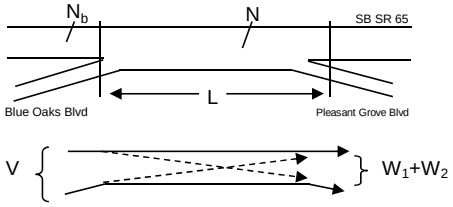


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **49.2**
4. Weaving Intensity Factor (k) **1.32**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,267**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

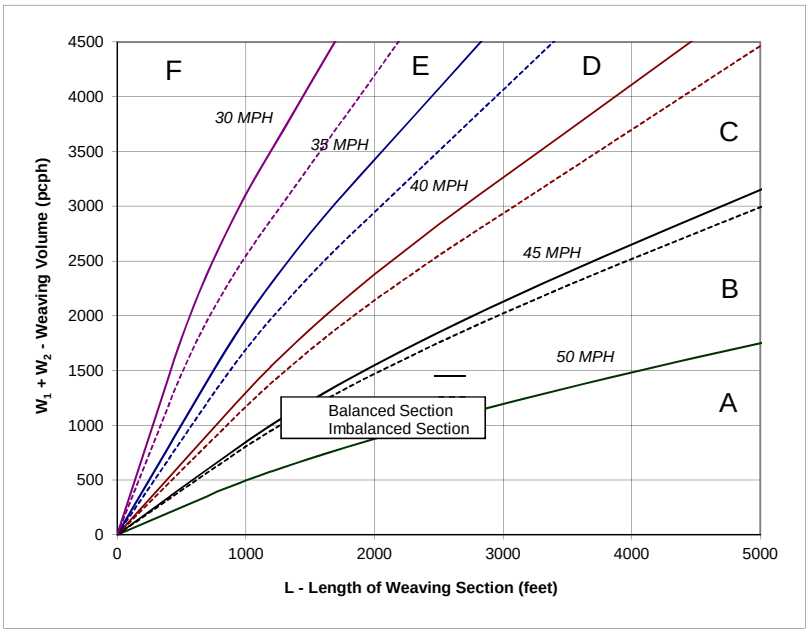
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	Existing AM
Freeway	NB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,007	Volume (vph)*	762	Volume (vph)*	387
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,037	Volume (pcph)	770	Volume (pcph)	391



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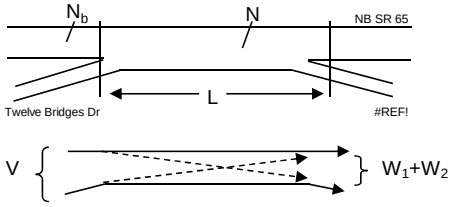


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **47.9**
4. Weaving Intensity Factor (k) **1.54**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,082**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

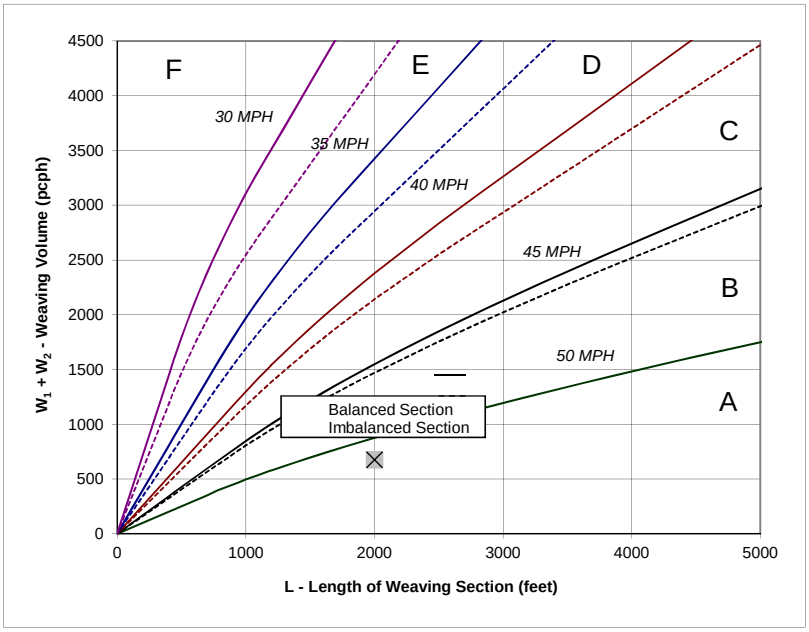
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	Existing PM
Freeway	NB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	1,860	Volume (vph)*	537	Volume (vph)*	132
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	1,879	Volume (pcph)	542	Volume (pcph)	133



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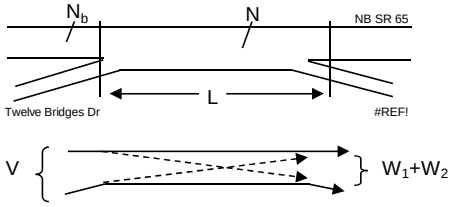


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 51.5
4. Weaving Intensity Factor (k) 1.00
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] 626
6. Level of Service (LOS) A

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

APPENDIX B:

EXISTING PLUS PROJECT CONDITIONS TECHNICAL CALCULATIONS

MIXED USE TRIP GENERATION MODEL - BASIC INPUT

All shaded cells are inputs
Regular inputs (project-specific)
Inputs that may depend on regional values from census data, travel demand model, etc…
Treat like other inputs, but please send values and source to Mackenzie Watten so that a library of values can be compiled in future versions!

Section 1 - General Site Information

Site Name	Amoruso Ranch	int/sq mi	179

Geographic	411	**Notes / Instructions**	
Developed Area (in acres)	411	Include streets, ROW, parking lots, pocket parks. Do not include open space, vacant lots.	
Number of Intersections	115	Count intersections either within or on the perimeter of the MXD. Check resulting intersections per square mile in blue above	
Is Transit (bus or rail) present within the site or across the street?	No	Note: This is only used as a way to zero out the probability of external trips if no transit is present.	
Proportion of households within 1/4 mile of a transit stop	0%	Enter as a percentage	
Land Use - Surrounding Area			
Is the site in a Central Business District and/or TOD?	No	Answering "Yes" will reduce the HBO and NHB purpose splits for retail use to those found in smaller stores. The nature of the stores (large vs. small) should be the primary factor in the selection here.	
Employment within one mile of the MXD	0	Do not include employment within the MXD itself	
Employment within a 30 minute Transit Trip (Door-to-door)	0	Include employment within the MXD itself	This can be a difficult number to get - some suggestions are in the instructions t
Total Regional Employment	966,900	Employment at MPO or similar level	If in the 9 county Bay Area, can use the MTCJobsWithin30MinutesByTransit.xls
Site Demographics			
Enter Population Directly?	No	If "No", will apply average HH size factors (immediately below) to dwelling unit totals in section 2	
Population		You do not need to enter population here. It will be calculated based on dwelling units below and average HH sizes.	
Use Surrounding Area (Block Group) Demographics for On-Site Average HH Size?	Yes	If no project-specific information exists, can use block group average HH size (see below)	
Use Surrounding Area (Block Group) Demographics for On-Site Average Veh Own?	Yes	If no project-specific information exists, can use block group average veh owned (see below)	
Surrounding Area (Block Group) Demographics			
Average HH size near Site	2.74	See http://factfinder2.census.gov/	
Average Vehicles Owned per Dwelling Unit near Site	1.80	See http://factfinder2.census.gov/	

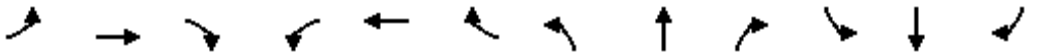
Section 2 - Trip Generation

			Trip Equation Method			Trips	
	Quantity	Units	Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour
Number of Dwelling Units							
Single Family	1954	DU	Average Rate	Average Rate	Average Rate	18,602	1,466
Multi-Family	982	DU	Average Rate	Average Rate	Average Rate	6,530	501
Townhouse	0	DU	Log Equation	Log Equation	Log Equation	0	0
High Rise Condo	0	DU	Linear Equation	Linear Equation	Linear Equation	0	0
Retail (note: if you use job units for retail, the spreadsheet will convert before applying trip rates, using the rate in section 2 which you can change)							
General Retail other than those listed below	442	ksf	Average Rate	Average Rate	Average Rate	18,873	424
Supermarket	0	ksf	Average Rate	Average Rate	Average Rate	0	0
Bank	0	ksf	Average Rate	Average Rate	Average Rate	0	0
Health Club	0	ksf	Average Rate	Average Rate	Average Rate	0	0
Restaurant (non-fast food)	0	ksf	Average Rate	Average Rate	Average Rate	0	0
Fast-Food Restaurant	0	ksf	Average Rate	Average Rate	Average Rate	0	0
Gas Station	0	ksf	Average Rate	Average Rate	Average Rate	0	0
Auto Repair	0	ksf	Average Rate	Average Rate	Average Rate	0	0
Home Improvement Superstore		ksf	Average Rate	Average Rate	Average Rate	0	0
Free-Standing Discount		ksf	Average Rate	Average Rate	Average Rate	0	0
Office							
Non-Medical	34	ksf	Average Rate	Average Rate	Average Rate	377	53
Medical	0	ksf	Average Rate	Average Rate	Average Rate	0	0
Industrial							
Light Industrial	0	ksf	Average Rate	Average Rate	Average Rate	0	0
Manufacturing	0	ksf	Average Rate	Average Rate	Average Rate	0	0
Warehousing / Self-Storage	0	ksf	Average Rate	Average Rate	Average Rate	0	0
Hotel (including restaurant, facilities, etc…)	0	Rooms	Average Rate	Average Rate	Average Rate	0	0
Motel		Rooms	Average Rate	Average Rate	Average Rate	0	0
Movie Theater (Theater with Matinee)			Average Rate	Average Rate	Average Rate	0	0
Movie Theater (Multiplex)	0	Screens	Average Rate	Average Rate	Average Rate	0	0
School							
University		Students	Linear Equation	Average Rate	Average Rate	0	0
High School		Students	Average Rate	Average Rate	Average Rate	0	0
Middle School		Students	Average Rate	Average Rate	Average Rate	0	0
Elementary	650	Students	Average Rate	Average Rate	Average Rate	839	293
Trips from Land uses not covered above ==>							
Daily							
AM Peak Hour							
PM Peak Hour							
Jobs in those Land Uses	0						

	Daily	AM Peak Hour	PM Peak Hour
Total "Raw" ITE Trips	**45,222**	**2,736**	**4,351**

External Vehicle Trips	Raw	Net	Reduction %
Daily	45222	36675	18.90%
AM Peak Hour	2736	2183	20.21%
PM Peak Hour	4351	3264	24.98%

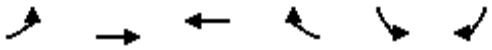
CITY OF ROSEVILLE INTERSECTIONS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	819	704	241	315	58	353	253	175	59	166	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1555	3433	5085	1555	3433	3539	1558	3433	3539	1558
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1555	3433	5085	1555	3433	3539	1558	3433	3539	1558
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	910	782	268	350	64	392	281	194	66	184	7
RTOR Reduction (vph)	0	0	362	0	0	38	0	0	141	0	0	6
Lane Group Flow (vph)	13	910	420	268	350	26	392	281	53	66	184	1
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.1	24.1	24.1	11.2	33.2	33.2	14.8	22.0	22.0	7.1	14.3	14.3
Effective Green, g (s)	3.1	27.1	25.1	12.2	36.2	34.2	15.8	25.4	23.0	8.1	17.7	15.3
Actuated g/C Ratio	0.04	0.32	0.30	0.14	0.43	0.41	0.19	0.30	0.27	0.10	0.21	0.18
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	126	1633	462	496	2181	630	643	1065	425	329	742	282
v/s Ratio Prot	0.00	0.18		c0.08	0.07		c0.11	0.08		0.02	c0.05	
v/s Ratio Perm			c0.27			0.02			0.03			0.00
v/c Ratio	0.10	0.56	0.91	0.54	0.16	0.04	0.61	0.26	0.12	0.20	0.25	0.00
Uniform Delay, d1	39.3	23.7	28.6	33.5	14.8	15.2	31.5	22.4	23.1	35.2	27.8	28.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.5	22.0	0.6	0.0	0.0	1.1	0.3	0.3	0.1	0.3	0.0
Delay (s)	39.4	24.2	50.5	34.1	14.8	15.2	32.6	22.7	23.4	35.3	28.1	28.3
Level of Service	D	C	D	C	B	B	C	C	C	D	C	C
Approach Delay (s)		36.4			22.5			27.3			30.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	84.4	Sum of lost time (s)	13.6
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

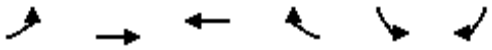


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	3	1048	583	25	39	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	1164	648	28	43	10
RTOR Reduction (vph)	0	0	0	10	0	8
Lane Group Flow (vph)	3	1164	648	18	43	2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.8	38.0	33.2	33.2	7.7	7.7
Effective Green, g (s)	1.8	41.0	36.2	36.2	8.7	8.7
Actuated g/C Ratio	0.03	0.74	0.65	0.65	0.16	0.16
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	57	3743	3305	1029	276	247
v/s Ratio Prot	0.00	c0.23	0.13		c0.02	
v/s Ratio Perm				0.01		0.00
v/c Ratio	0.05	0.31	0.20	0.02	0.16	0.01
Uniform Delay, d1	26.1	2.5	3.9	3.5	20.3	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0	0.0	0.1	0.0
Delay (s)	26.3	2.6	4.0	3.5	20.4	19.9
Level of Service	C	A	A	A	C	B
Approach Delay (s)		2.6	3.9		20.3	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	3.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1109	11	71	614	9	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1232	12	79	682	10	69
RTOR Reduction (vph)	0	6	0	0	0	57
Lane Group Flow (vph)	1232	6	79	682	10	12
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	30.0	30.0	6.9	40.9	10.2	10.2
Effective Green, g (s)	33.0	33.0	7.9	43.9	11.2	11.2
Actuated g/C Ratio	0.53	0.53	0.13	0.71	0.18	0.18
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	2707	843	226	3601	320	286
v/s Ratio Prot	c0.24		c0.04	0.13	0.01	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.46	0.01	0.35	0.19	0.03	0.04
Uniform Delay, d1	9.0	6.8	24.7	3.1	20.9	21.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.3	0.0	0.0	0.0
Delay (s)	9.1	6.8	25.0	3.1	20.9	21.0
Level of Service	A	A	C	A	C	C
Approach Delay (s)	9.1			5.4	21.0	
Approach LOS	A			A	C	

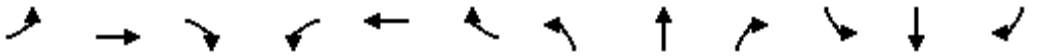
Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	1134	611	82	168	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1541	1770	1560
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1541	1770	1560
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	1260	679	91	187	23
RTOR Reduction (vph)	0	0	0	44	0	17
Lane Group Flow (vph)	11	1260	679	47	187	6
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.8	30.5	25.7	25.7	14.3	14.3
Effective Green, g (s)	1.8	33.5	28.7	28.7	15.3	15.3
Actuated g/C Ratio	0.03	0.60	0.52	0.52	0.27	0.27
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	57	3058	2620	794	486	429
v/s Ratio Prot	0.01	c0.25	0.13		c0.11	
v/s Ratio Perm				0.03		0.00
v/c Ratio	0.19	0.41	0.26	0.06	0.38	0.01
Uniform Delay, d1	26.2	5.9	7.6	6.7	16.4	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	0.1	0.0	0.2	0.0
Delay (s)	26.8	6.0	7.6	6.8	16.6	14.7
Level of Service	C	A	A	A	B	B
Approach Delay (s)		6.2	7.5		16.4	
Approach LOS		A	A		B	

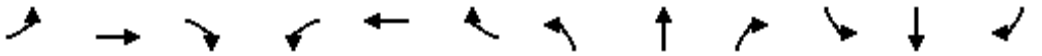
Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	6.9
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



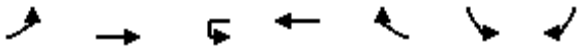
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	1238	26	19	550	117	36	3	30	278	30	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.6	3.6	3.6	3.9	3.9	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1681	1683	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1681	1683	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	1376	29	21	611	130	40	3	33	309	33	18
RTOR Reduction (vph)	0	0	10	0	0	54	0	0	30	0	3	0
Lane Group Flow (vph)	33	1376	19	21	611	76	40	3	3	179	178	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	5.0	69.3	69.3	3.0	67.3	67.3	9.7	9.7	9.7	18.5	18.5	
Effective Green, g (s)	6.0	72.3	72.3	4.0	70.3	70.3	10.7	10.7	10.7	19.5	19.5	
Actuated g/C Ratio	0.05	0.60	0.60	0.03	0.59	0.59	0.09	0.09	0.09	0.16	0.16	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.6	4.6	4.6	4.9	4.9	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	4.5	4.5	4.5	3.1	3.1	
Lane Grp Cap (vph)	89	3064	954	59	2979	927	158	166	141	273	273	
v/s Ratio Prot	c0.02	c0.27		0.01	0.12		c0.02	0.00		c0.11	0.11	
v/s Ratio Perm			0.01			0.05			0.00			
v/c Ratio	0.37	0.45	0.02	0.36	0.21	0.08	0.25	0.02	0.02	0.66	0.65	
Uniform Delay, d1	55.2	13.0	9.6	56.7	11.7	10.8	50.9	49.9	49.9	47.1	47.1	
Progression Factor	1.00	1.00	1.00	1.11	0.50	0.70	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.3	0.0	1.3	0.2	0.2	1.5	0.1	0.1	5.6	5.5	
Delay (s)	56.1	13.3	9.6	64.4	5.9	7.7	52.4	49.9	50.0	52.7	52.6	
Level of Service	E	B	A	E	A	A	D	D	D	D	D	
Approach Delay (s)		14.2			7.9			51.2			52.6	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



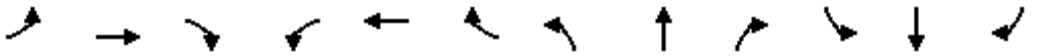
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1413	108	163	564	117	74	103	213	398	93	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.7		3.0	2.7	2.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3181		3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3181		3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	1570	120	181	627	130	82	114	237	442	103	42
RTOR Reduction (vph)	0	0	60	0	0	60	0	204	0	0	0	33
Lane Group Flow (vph)	29	1570	60	181	627	70	82	147	0	442	103	9
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	6.0	57.0	57.0	10.8	61.8	61.8	9.6	13.8		18.7	22.9	22.9
Effective Green, g (s)	7.0	60.0	60.0	11.8	64.8	64.8	10.6	16.8		19.7	25.9	25.9
Actuated g/C Ratio	0.06	0.50	0.50	0.10	0.54	0.54	0.09	0.14		0.16	0.22	0.22
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.8		2.0	3.8	3.8
Lane Grp Cap (vph)	200	2543	792	338	2746	855	303	445		564	764	342
v/s Ratio Prot	0.01	c0.31		c0.05	0.12		0.02	c0.05		c0.13	0.03	
v/s Ratio Perm			0.04			0.04						0.01
v/c Ratio	0.14	0.62	0.08	0.54	0.23	0.08	0.27	0.33		0.78	0.13	0.03
Uniform Delay, d1	53.7	21.7	15.6	51.5	14.5	13.3	51.1	46.5		48.1	38.0	37.1
Progression Factor	1.17	0.62	0.31	1.37	0.91	1.54	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.7	0.1	0.8	0.2	0.2	0.2	0.6		6.5	0.1	0.0
Delay (s)	62.7	14.2	5.0	71.4	13.3	20.7	51.3	47.1		54.6	38.1	37.1
Level of Service	E	B	A	E	B	C	D	D		D	D	D
Approach Delay (s)		14.4			25.6			47.9			50.5	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



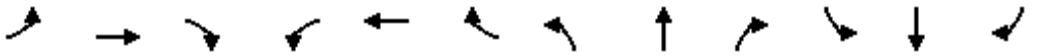
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	8	2104	0	808	60	227	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6		2.6	2.6	3.9	3.9
Lane Util. Factor	1.00	0.91		0.91	1.00	0.97	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085		5085	1583	3433	1583
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085		5085	1583	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	2338	0	898	67	252	38
RTOR Reduction (vph)	0	0	0	0	15	0	33
Lane Group Flow (vph)	9	2338	0	898	52	252	5
Turn Type	Prot		Prot		Perm		Perm
Protected Phases	7	4	3	8		6	
Permitted Phases					8		6
Actuated Green, G (s)	1.3	94.7		89.4	89.4	14.4	14.4
Effective Green, g (s)	2.3	98.1		92.8	92.8	15.4	15.4
Actuated g/C Ratio	0.02	0.82		0.77	0.77	0.13	0.13
Clearance Time (s)	4.0	6.0		6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.8		4.8	4.8	2.0	2.0
Lane Grp Cap (vph)	34	4157		3932	1224	441	203
v/s Ratio Prot	0.01	c0.46		0.18		c0.07	
v/s Ratio Perm					0.03		0.00
v/c Ratio	0.26	0.56		0.23	0.04	0.57	0.02
Uniform Delay, d1	58.0	3.7		3.7	3.2	49.2	45.7
Progression Factor	1.42	0.23		0.82	0.59	1.00	1.00
Incremental Delay, d2	1.2	0.5		0.1	0.0	1.1	0.0
Delay (s)	83.7	1.3		3.1	1.9	50.3	45.7
Level of Service	F	A		A	A	D	D
Approach Delay (s)		1.6		3.0		49.7	
Approach LOS		A		A		D	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



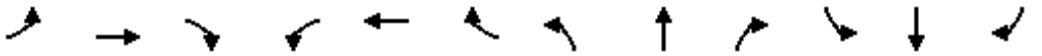
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	1738	423	540	821	241	154	79	205	126	60	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6	2.6	3.0	2.6	2.6	3.0	2.6	3.0	3.0	1.9	1.9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	58	1931	470	600	912	268	171	88	228	140	67	28
RTOR Reduction (vph)	0	0	193	0	0	103	0	0	0	0	0	25
Lane Group Flow (vph)	58	1931	277	600	912	165	171	88	228	140	67	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			2
Actuated Green, G (s)	8.0	57.5	57.5	21.0	70.5	70.5	11.5	9.5	120.0	12.0	10.7	10.7
Effective Green, g (s)	9.0	60.9	60.9	22.0	73.9	73.9	12.5	12.9	120.0	13.0	14.1	14.1
Actuated g/C Ratio	0.08	0.51	0.51	0.18	0.62	0.62	0.10	0.11	1.00	0.11	0.12	0.12
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.4		2.0	6.0	6.0
Lane Grp Cap (vph)	257	2581	803	629	3132	975	358	380	1583	372	416	186
v/s Ratio Prot	0.02	c0.38		c0.17	0.18		c0.05	c0.02		0.04	0.02	
v/s Ratio Perm			0.18			0.10			c0.14			0.00
v/c Ratio	0.23	0.75	0.35	0.95	0.29	0.17	0.48	0.23	0.14	0.38	0.16	0.02
Uniform Delay, d1	52.2	23.5	17.6	48.5	10.8	9.9	50.7	49.0	0.0	49.7	47.6	46.8
Progression Factor	1.15	0.91	0.49	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.3	0.6	24.6	0.2	0.4	0.4	0.4	0.2	0.2	0.5	0.1
Delay (s)	60.4	22.7	9.2	73.1	11.0	10.3	51.0	49.4	0.2	50.0	48.1	46.9
Level of Service	E	C	A	E	B	B	D	D	A	D	D	D
Approach Delay (s)		21.0			31.8			26.9			49.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



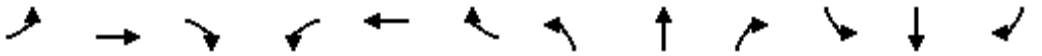
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1734	288	142	503	332	172	0	260	53	232	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	2.0	4.0	2.0	4.0		2.0	4.0	4.0	2.0
Lane Util. Factor		0.86	1.00	0.97	0.95	1.00	0.97		1.00	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		6408	1583	3433	3539	1583	3433		1583	1770	3539	1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		6408	1583	3433	3539	1583	3433		1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1927	320	158	559	369	191	0	289	59	258	264
RTOR Reduction (vph)	0	0	187	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1927	133	158	559	369	191	0	289	59	258	264
Turn Type			Perm	Prot		Free	Prot		Over	Split		Free
Protected Phases		4		3	8		2		3	1	1	
Permitted Phases			4			Free						Free
Actuated Green, G (s)		40.9	40.9	19.9	64.8	103.0	9.2		19.9	11.0	11.0	103.0
Effective Green, g (s)		42.9	42.9	21.9	66.8	103.0	11.2		21.9	13.0	13.0	103.0
Actuated g/C Ratio		0.42	0.42	0.21	0.65	1.00	0.11		0.21	0.13	0.13	1.00
Clearance Time (s)		6.0	6.0	4.0	6.0		6.0		4.0	6.0	6.0	
Vehicle Extension (s)		4.8	4.8	2.0	4.8		2.0		2.0	4.7	4.7	
Lane Grp Cap (vph)		2669	659	730	2295	1583	373		337	223	447	1583
v/s Ratio Prot		c0.30		0.05	0.16		c0.06		c0.18	0.03	c0.07	
v/s Ratio Perm			0.08			0.23						0.17
v/c Ratio		0.72	0.20	0.22	0.24	0.23	0.51		0.86	0.26	0.58	0.17
Uniform Delay, d1		25.1	19.1	33.5	7.6	0.0	43.3		39.0	40.7	42.4	0.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		1.2	0.3	0.1	0.3	0.3	0.5		18.3	1.2	2.7	0.2
Delay (s)		26.3	19.4	33.5	7.8	0.3	43.8		57.3	41.9	45.1	0.2
Level of Service		C	B	C	A	A	D		E	D	D	A
Approach Delay (s)		25.3			9.0			51.9			24.4	
Approach LOS		C			A			D			C	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	103.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



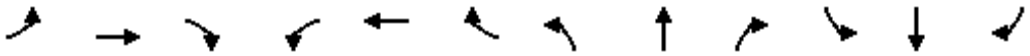
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	165	0	0	0	47	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)						4.0				4.0		
Lane Util. Factor						1.00				1.00		
Frt						0.85				1.00		
Flt Protected						1.00				0.95		
Satd. Flow (prot)						1583				1770		
Flt Permitted						1.00				0.95		
Satd. Flow (perm)						1583				1770		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	0	183	0	0	0	52	0	0
RTOR Reduction (vph)	0	0	0	0	0	132	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	51	0	0	0	52	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)						5.7				0.8		
Effective Green, g (s)						5.7				0.8		
Actuated g/C Ratio						0.28				0.04		
Clearance Time (s)						4.0				4.0		
Vehicle Extension (s)						3.0				3.0		
Lane Grp Cap (vph)						444				70		
v/s Ratio Prot										c0.03		
v/s Ratio Perm						c0.03						
v/c Ratio						0.12				0.74		
Uniform Delay, d1						5.4				9.6		
Progression Factor						1.00				1.00		
Incremental Delay, d2						0.1				34.2		
Delay (s)						5.5				43.8		
Level of Service						A				D		
Approach Delay (s)		0.0			5.5			0.0			43.8	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	20.3	Sum of lost time (s)	13.8
Intersection Capacity Utilization	13.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



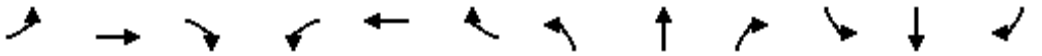
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	41	75	29	75	59	23	98	79	9	42	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.3	4.3		3.0		3.0	4.7		3.0	4.7	4.7
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.95		1.00	0.93		1.00	1.00	0.85
Flt Protected		0.99	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1837	1583		1756		1770	3302		1770	3539	1583
Flt Permitted		0.99	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1837	1583		1756		1770	3302		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	18	46	83	32	83	66	26	109	88	10	47	1
RTOR Reduction (vph)	0	0	67	0	16	0	0	66	0	0	0	1
Lane Group Flow (vph)	0	64	16	0	165	0	26	131	0	10	47	0
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	2	2		1	1		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)		10.0	10.0		12.9		0.9	12.7		0.9	12.7	12.7
Effective Green, g (s)		11.0	11.0		13.9		1.9	13.7		1.9	13.7	13.7
Actuated g/C Ratio		0.20	0.20		0.25		0.03	0.25		0.03	0.25	0.25
Clearance Time (s)		5.3	5.3		4.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)		364	314		440		61	815		61	874	391
v/s Ratio Prot		c0.03			c0.09		c0.01	c0.04		0.01	0.01	
v/s Ratio Perm			0.01									0.00
v/c Ratio		0.18	0.05		0.38		0.43	0.16		0.16	0.05	0.00
Uniform Delay, d1		18.5	18.0		17.2		26.3	16.4		26.0	16.0	15.7
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1	0.0		0.2		1.7	0.2		0.5	0.0	0.0
Delay (s)		18.6	18.1		17.4		28.0	16.6		26.5	16.0	15.7
Level of Service		B	B		B		C	B		C	B	B
Approach Delay (s)		18.3			17.4			17.9			17.8	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



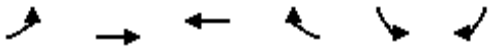
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	17	39	50	4	0	95	190	36	1	317	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9		4.0	4.7	4.7	3.0	4.7	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frt		0.93			1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1710			1780		1770	3539	1583	1770	3529	
Flt Permitted		0.99			0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1710			1780		1770	3539	1583	1770	3529	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	19	43	56	4	0	106	211	40	1	352	7
RTOR Reduction (vph)	0	36	0	0	0	0	0	0	20	0	1	0
Lane Group Flow (vph)	0	46	0	0	60	0	106	211	20	1	358	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	2	2		1	1		3	8		7	4	
Permitted Phases						1			8			
Actuated Green, G (s)		6.3			5.0		6.9	28.4	28.4	0.6	22.1	
Effective Green, g (s)		6.3			5.0		6.9	29.4	29.4	1.6	23.1	
Actuated g/C Ratio		0.11			0.08		0.12	0.49	0.49	0.03	0.39	
Clearance Time (s)		4.9			4.9		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0			2.0		2.0	4.5	4.5	2.0	4.5	
Lane Grp Cap (vph)		180			149		204	1740	778	47	1363	
v/s Ratio Prot		c0.03			c0.03		c0.06	0.06		0.00	c0.10	
v/s Ratio Perm									0.01			
v/c Ratio		0.26			0.40		0.52	0.12	0.03	0.02	0.26	
Uniform Delay, d1		24.6			26.0		24.9	8.2	7.8	28.3	12.5	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3			0.6		0.9	0.1	0.0	0.1	0.2	
Delay (s)		24.9			26.6		25.8	8.3	7.8	28.4	12.7	
Level of Service		C			C		C	A	A	C	B	
Approach Delay (s)		24.9			26.6			13.4			12.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	18.5
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



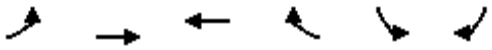
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	226	263	212	100	96	127	683	405	114	1193	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5	3.5	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	251	292	236	111	107	141	759	450	127	1326	10
RTOR Reduction (vph)	0	0	228	0	0	75	0	0	273	0	0	4
Lane Group Flow (vph)	22	251	64	236	111	32	141	759	177	127	1326	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.7	16.2	16.2	11.0	23.2	23.2	8.7	30.3	30.3	8.5	30.1	30.1
Effective Green, g (s)	4.7	18.7	18.7	12.0	25.7	25.7	9.7	33.7	33.7	9.5	33.5	33.5
Actuated g/C Ratio	0.05	0.22	0.22	0.14	0.30	0.30	0.11	0.39	0.39	0.11	0.39	0.39
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	188	772	345	481	1061	475	389	2000	622	381	1383	619
v/s Ratio Prot	0.01	c0.07		c0.07	0.03		c0.04	0.15		0.04	c0.37	
v/s Ratio Perm			0.04			0.02			0.11			0.00
v/c Ratio	0.12	0.33	0.18	0.49	0.10	0.07	0.36	0.38	0.28	0.33	0.96	0.01
Uniform Delay, d1	38.5	28.2	27.3	34.0	21.7	21.4	35.1	18.5	17.8	35.2	25.4	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.4	0.4	0.3	0.1	0.1	0.2	0.2	0.5	0.2	15.6	0.0
Delay (s)	38.6	28.6	27.7	34.3	21.7	21.5	35.4	18.8	18.3	35.4	41.0	16.0
Level of Service	D	C	C	C	C	C	D	B	B	D	D	B
Approach Delay (s)		28.6			28.2			20.3			40.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	85.7	Sum of lost time (s)	11.8
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



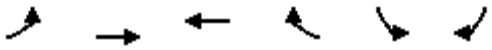
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	751	354	31	118	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	834	393	34	131	26
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	12	834	393	34	131	26
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.1	29.2	24.4	48.6	9.4	48.6
Effective Green, g (s)	2.1	32.2	27.4	48.6	10.9	48.6
Actuated g/C Ratio	0.04	0.66	0.56	1.00	0.22	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	76	2345	1995	1583	397	1583
v/s Ratio Prot	0.01	c0.24	0.11		c0.07	
v/s Ratio Perm				0.02		0.02
v/c Ratio	0.16	0.36	0.20	0.02	0.33	0.02
Uniform Delay, d1	22.4	3.6	5.2	0.0	15.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.1	0.0	0.2	0.0
Delay (s)	22.8	3.8	5.3	0.0	16.0	0.0
Level of Service	C	A	A	A	B	A
Approach Delay (s)		4.0	4.9		13.3	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	5.5
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	6	860	403	16	54	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		0.98	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3519		1754	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3519		1754	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	956	448	18	60	9
RTOR Reduction (vph)	0	0	2	0	8	0
Lane Group Flow (vph)	7	956	464	0	61	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.1	36.2	31.1		6.3	
Effective Green, g (s)	2.1	38.9	33.8		7.3	
Actuated g/C Ratio	0.04	0.75	0.65		0.14	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	71	2637	2279		245	
v/s Ratio Prot	0.00	c0.27	0.13		c0.03	
v/s Ratio Perm						
v/c Ratio	0.10	0.36	0.20		0.25	
Uniform Delay, d1	24.1	2.3	3.7		20.0	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.2	0.1	0.1		0.2	
Delay (s)	24.4	2.5	3.8		20.2	
Level of Service	C	A	A		C	
Approach Delay (s)		2.6	3.8		20.2	
Approach LOS		A	A		C	

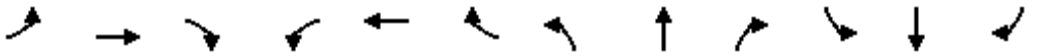
Intersection Summary			
HCM Average Control Delay	3.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	52.2	Sum of lost time (s)	6.0
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	12	900	375	24	130	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0		3.0	3.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3500		1770	1553
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3500		1770	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	1000	417	27	144	39
RTOR Reduction (vph)	0	0	4	0	0	32
Lane Group Flow (vph)	13	1000	440	0	144	7
Confl. Peds. (#/hr)				10		10
Turn Type	Prot					Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	1.0	31.1	26.1		8.7	8.7
Effective Green, g (s)	2.0	33.8	28.8		9.7	9.7
Actuated g/C Ratio	0.04	0.67	0.57		0.19	0.19
Clearance Time (s)	4.0	6.7	6.7		4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3		2.0	2.0
Lane Grp Cap (vph)	70	2369	1996		340	298
v/s Ratio Prot	0.01	c0.28	0.13		c0.08	
v/s Ratio Perm						0.00
v/c Ratio	0.19	0.42	0.22		0.42	0.03
Uniform Delay, d1	23.5	3.8	5.3		17.9	16.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.5	0.2	0.1		0.3	0.0
Delay (s)	23.9	4.0	5.4		18.3	16.6
Level of Service	C	A	A		B	B
Approach Delay (s)		4.3	5.4		17.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	7.0
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	823	174	235	339	131	97	238	238	348	381	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	3185	1400	3090	3185	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	3185	1400	3090	3185	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	914	193	261	377	146	108	264	264	387	423	150
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	33	914	193	261	377	146	108	264	264	387	423	150
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	3.8	49.7	120.0	15.4	61.3	120.0	8.6	16.1	120.0	19.4	26.9	120.0
Effective Green, g (s)	4.8	52.7	120.0	16.4	64.3	120.0	9.6	19.1	120.0	20.4	29.9	120.0
Actuated g/C Ratio	0.04	0.44	1.00	0.14	0.54	1.00	0.08	0.16	1.00	0.17	0.25	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	124	1399	1400	422	1707	1400	247	507	1400	525	794	1400
v/s Ratio Prot	0.01	c0.29		c0.08	0.12		0.03	c0.08		c0.13	0.13	
v/s Ratio Perm			0.14			0.10			0.19			0.11
v/c Ratio	0.27	0.65	0.14	0.62	0.22	0.10	0.44	0.52	0.19	0.74	0.53	0.11
Uniform Delay, d1	55.9	26.5	0.0	48.8	14.7	0.0	52.6	46.3	0.0	47.3	39.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.4	0.2	1.9	0.1	0.1	0.5	1.5	0.3	4.6	1.1	0.2
Delay (s)	56.3	28.9	0.2	50.8	14.8	0.1	53.1	47.8	0.3	51.9	40.1	0.2
Level of Service	E	C	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		24.8			24.0			29.0			38.6	
Approach LOS		C			C			C			D	

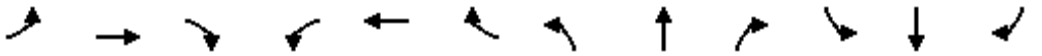
Intersection Summary			
HCM Average Control Delay	29.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1356	79	112	622	58	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	3.6	3.6
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3500		1770	3539	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3500		1770	3539	1770	1542
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1507	88	124	691	64	247
RTOR Reduction (vph)	2	0	0	0	0	221
Lane Group Flow (vph)	1593	0	124	691	64	26
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	81.3		12.8	98.1	11.3	11.3
Effective Green, g (s)	83.3		12.8	100.1	12.6	12.6
Actuated g/C Ratio	0.69		0.11	0.83	0.10	0.10
Clearance Time (s)	5.7		4.0	5.7	4.9	4.9
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2430		189	2952	186	162
v/s Ratio Prot	c0.46		c0.07	0.20	c0.04	
v/s Ratio Perm						0.02
v/c Ratio	0.66		0.66	0.23	0.34	0.16
Uniform Delay, d1	10.3		51.5	2.1	49.9	48.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4		6.1	0.2	0.4	0.2
Delay (s)	11.7		57.6	2.2	50.3	49.1
Level of Service	B		E	A	D	D
Approach Delay (s)	11.7			10.7	49.3	
Approach LOS	B			B	D	

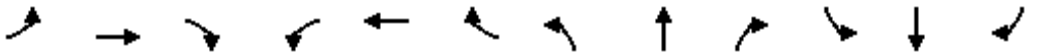
Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



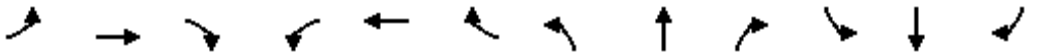
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	179	1356	139	409	543	193	172	502	567	166	396	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	6.0	5.7	4.0	4.0	6.0	4.0	4.0	6.4	4.0
Lane Util. Factor	0.97	0.91	1.00	0.94	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	4990	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	4990	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	199	1507	154	454	603	214	191	558	630	184	440	66
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	199	1507	154	454	603	214	191	558	630	184	440	66
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.0	49.2	120.0	15.2	52.7	120.0	11.0	23.1	120.0	10.8	22.5	120.0
Effective Green, g (s)	12.0	49.2	120.0	15.2	52.7	120.0	11.0	23.1	120.0	10.8	22.5	120.0
Actuated g/C Ratio	0.10	0.41	1.00	0.13	0.44	1.00	0.09	0.19	1.00	0.09	0.19	1.00
Clearance Time (s)	5.7	5.7		6.0	5.7		4.0	6.0		4.0	6.4	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	3.7	
Lane Grp Cap (vph)	343	2085	1583	632	1554	1583	315	681	1583	309	953	1583
v/s Ratio Prot	0.06	c0.30		c0.09	0.17		c0.06	c0.16		0.05	0.09	
v/s Ratio Perm			0.10			0.14			c0.40			0.04
v/c Ratio	0.58	0.72	0.10	0.72	0.39	0.14	0.61	0.82	0.40	0.60	0.46	0.04
Uniform Delay, d1	51.6	29.7	0.0	50.3	22.7	0.0	52.4	46.4	0.0	52.5	43.4	0.0
Progression Factor	1.00	1.00	1.00	1.14	1.12	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	1.4	0.1	3.1	0.7	0.2	2.3	8.1	0.7	2.1	0.4	0.0
Delay (s)	53.2	31.1	0.1	60.3	26.2	0.2	54.7	54.5	0.7	54.6	43.8	0.0
Level of Service	D	C	A	E	C	A	D	D	A	D	D	A
Approach Delay (s)		30.9			34.0			30.0			42.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	33.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



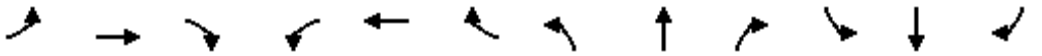
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	214	1278	224	179	802	58	156	344	218	42	320	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0	3.4	3.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	238	1420	249	199	891	64	173	382	242	47	356	180
RTOR Reduction (vph)	0	0	114	0	0	0	0	0	0	0	0	147
Lane Group Flow (vph)	238	1420	135	199	891	64	173	382	242	47	356	33
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			Free			6
Actuated Green, G (s)	12.5	56.4	56.4	11.2	57.1	120.0	11.1	24.3	120.0	5.7	18.9	18.9
Effective Green, g (s)	13.5	59.4	59.4	14.6	60.5	120.0	12.1	27.7	120.0	6.7	21.9	21.9
Actuated g/C Ratio	0.11	0.49	0.49	0.12	0.50	1.00	0.10	0.23	1.00	0.06	0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1		2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	386	2517	784	418	2564	1583	346	817	1583	192	646	289
v/s Ratio Prot	c0.07	c0.28		c0.06	0.18		0.05	c0.11		0.01	c0.10	
v/s Ratio Perm			0.09			0.04			0.15			0.02
v/c Ratio	0.62	0.56	0.17	0.48	0.35	0.04	0.50	0.47	0.15	0.24	0.55	0.11
Uniform Delay, d1	50.8	21.2	16.7	49.1	17.9	0.0	51.1	39.8	0.0	54.2	44.6	40.9
Progression Factor	0.69	1.21	2.64	1.03	1.22	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.7	0.4	0.3	0.1	0.0	0.4	0.7	0.2	0.2	1.4	0.3
Delay (s)	36.8	26.5	44.6	51.0	21.9	0.0	51.5	40.5	0.2	54.5	46.0	41.2
Level of Service	D	C	D	D	C	A	D	D	A	D	D	D
Approach Delay (s)		30.2			25.7			30.6			45.2	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



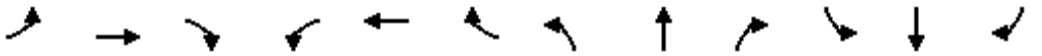
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	1497	10	19	915	53	50	42	39	88	4	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	1663	11	21	1017	59	56	47	43	98	4	34
RTOR Reduction (vph)	0	0	4	0	0	21	0	0	40	0	0	31
Lane Group Flow (vph)	30	1663	7	21	1017	38	56	47	3	98	4	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.6	79.7	79.7	2.9	78.0	78.0	9.9	8.6	8.6	11.1	8.9	8.9
Effective Green, g (s)	4.6	79.7	79.7	2.9	78.0	78.0	9.9	8.6	8.6	11.1	8.9	8.9
Actuated g/C Ratio	0.04	0.66	0.66	0.02	0.65	0.65	0.08	0.07	0.07	0.09	0.07	0.07
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.5	2.5	2.0	3.1	3.1
Lane Grp Cap (vph)	68	3377	1051	43	3305	1029	146	134	113	164	138	117
v/s Ratio Prot	0.02	c0.33		c0.01	0.20		0.03	c0.03		c0.06	0.00	
v/s Ratio Perm			0.00			0.02			0.00			0.00
v/c Ratio	0.44	0.49	0.01	0.49	0.31	0.04	0.38	0.35	0.03	0.60	0.03	0.02
Uniform Delay, d1	56.4	10.1	6.8	57.8	9.2	7.5	52.2	53.0	51.8	52.3	51.5	51.5
Progression Factor	0.97	1.26	2.15	0.84	0.47	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.5	0.0	3.0	0.1	0.0	0.6	1.2	0.1	3.9	0.1	0.1
Delay (s)	56.5	13.1	14.6	51.3	4.4	5.0	52.8	54.2	51.9	56.2	51.6	51.6
Level of Service	E	B	B	D	A	A	D	D	D	E	D	D
Approach Delay (s)		13.9			5.3			53.0			54.9	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



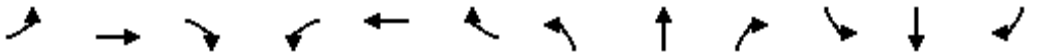
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	842	744	689	615	100	533	257	337	108	424	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.7	3.0	2.0	4.6	3.0	4.7	-0.4	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	4990	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	4990	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	936	827	766	683	111	592	286	374	120	471	26
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	24	936	827	766	683	111	592	286	374	120	471	26
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.6	37.5	120.0	27.7	55.9	120.0	20.9	19.3	120.0	11.8	17.9	120.0
Effective Green, g (s)	10.6	40.5	120.0	28.7	58.9	120.0	21.9	22.7	120.0	12.8	21.3	120.0
Actuated g/C Ratio	0.09	0.34	1.00	0.24	0.49	1.00	0.18	0.19	1.00	0.11	0.18	1.00
Clearance Time (s)	4.0	6.0		4.0	5.7		3.0	8.0		5.7	3.0	
Vehicle Extension (s)	2.0	4.1		3.0	4.5		4.1	4.1		4.1	4.1	
Lane Grp Cap (vph)	303	1716	1583	821	2496	1583	911	669	1583	366	903	1583
v/s Ratio Prot	0.01	c0.18		c0.22	0.13		c0.12	0.08		0.03	0.09	
v/s Ratio Perm			c0.52			0.07			0.24			0.02
v/c Ratio	0.08	0.55	0.52	0.93	0.27	0.07	0.65	0.43	0.24	0.33	0.52	0.02
Uniform Delay, d1	50.2	32.3	0.0	44.7	18.0	0.0	45.5	42.9	0.0	49.6	44.7	0.0
Progression Factor	0.92	0.94	1.00	0.85	1.09	1.00	0.91	0.83	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.4	1.1	16.7	0.3	0.1	1.8	0.6	0.4	0.8	0.7	0.0
Delay (s)	46.5	30.8	1.1	54.7	19.8	0.1	43.1	36.2	0.4	50.4	45.5	0.0
Level of Service	D	C	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		17.3			35.5			28.7			44.5	
Approach LOS		B			D			C			D	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	1	103	40	25	37	120	1111	7	184	1125	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	2.0	3.0	3.0	3.0	3.0	2.6		9.0	2.6	2.6
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	0.97	0.86		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3221	1616	1583	1770	1863	1583	3433	6402		3433	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3221	1616	1583	1770	1863	1583	3433	6402		3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	169	1	114	44	28	41	133	1234	8	204	1250	99
RTOR Reduction (vph)	0	0	103	0	0	38	0	0	0	0	0	36
Lane Group Flow (vph)	113	57	11	44	28	3	133	1242	0	204	1250	63
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8						6
Actuated Green, G (s)	9.9	9.9	9.9	8.2	8.2	8.2	10.0	66.9		9.0	72.9	72.9
Effective Green, g (s)	10.9	11.9	11.9	10.2	10.2	10.2	11.0	70.3		11.0	76.3	76.3
Actuated g/C Ratio	0.09	0.10	0.10	0.08	0.08	0.08	0.09	0.59		0.09	0.64	0.64
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	6.0		11.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	293	160	157	150	158	135	315	3751		315	3233	1007
v/s Ratio Prot	c0.04	0.04		c0.02	0.02		c0.04	0.19		0.06	c0.25	
v/s Ratio Perm			0.01			0.00						0.04
v/c Ratio	0.39	0.36	0.07	0.29	0.18	0.03	0.42	0.33		0.65	0.39	0.06
Uniform Delay, d1	51.4	50.5	49.0	51.5	51.0	50.3	51.5	12.8		52.6	10.6	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.56	0.24		1.26	1.68	3.24
Incremental Delay, d2	0.8	1.4	0.2	1.1	0.5	0.1	0.8	0.2		4.4	0.1	0.0
Delay (s)	52.2	51.8	49.2	52.6	51.5	50.4	81.2	3.3		70.7	17.8	26.8
Level of Service	D	D	D	D	D	D	F	A		E	B	C
Approach Delay (s)		51.0			51.6			10.8			25.4	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	938	20	0	1103	343	0	0	0	61	0	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			0%			0%			0%	
Total Lost time (s)		4.7			4.7	3.0				4.3	5.3	4.3
Lane Util. Factor		0.91			0.91	1.00				0.95	0.91	0.95
Frt		1.00			1.00	0.85				1.00	0.86	0.85
Flt Protected		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		5196			5085	1583				1681	1448	1504
Flt Permitted		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		5196			5085	1583				1681	1448	1504
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1042	22	0	1226	381	0	0	0	68	0	337
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	72	72
Lane Group Flow (vph)	0	1063	0	0	1226	381	0	0	0	61	100	100
Turn Type						Free				Split		Perm
Protected Phases		2			6					4	4	
Permitted Phases						Free						4
Actuated Green, G (s)		96.3			96.3	120.0				12.7	12.7	12.7
Effective Green, g (s)		97.3			97.3	120.0				13.7	12.7	13.7
Actuated g/C Ratio		0.81			0.81	1.00				0.11	0.11	0.11
Clearance Time (s)		5.7			5.7					5.3	5.3	5.3
Vehicle Extension (s)		4.3			3.9					2.0	2.0	2.0
Lane Grp Cap (vph)		4213			4123	1583				192	153	172
v/s Ratio Prot		0.20			c0.24					0.04	c0.07	
v/s Ratio Perm						0.24						0.07
v/c Ratio		0.25			0.30	0.24				0.32	0.65	0.58
Uniform Delay, d1		2.7			2.8	0.0				48.9	51.5	50.4
Progression Factor		0.96			2.70	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1			0.1	0.3				0.3	7.3	3.2
Delay (s)		2.7			7.7	0.3				49.2	58.9	53.7
Level of Service		A			A	A				D	E	D
Approach Delay (s)		2.7			6.0			0.0			55.2	
Approach LOS		A			A			A			E	

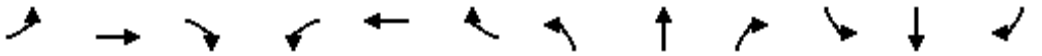
Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	692	307	129	1135	311	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	0%	
Total Lost time (s)	4.7	4.7	3.0	4.7	6.3	6.3
Lane Util. Factor	0.91	1.00	1.00	0.91	0.94	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5212	1623	1770	5085	4990	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5212	1623	1770	5085	4990	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	769	341	143	1261	346	302
RTOR Reduction (vph)	0	122	0	0	0	267
Lane Group Flow (vph)	769	219	143	1261	346	35
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	76.1	76.1	14.0	94.1	12.9	12.9
Effective Green, g (s)	77.1	77.1	15.0	95.1	13.9	13.9
Actuated g/C Ratio	0.64	0.64	0.12	0.79	0.12	0.12
Clearance Time (s)	5.7	5.7	4.0	5.7	7.3	7.3
Vehicle Extension (s)	3.8	3.8	2.0	4.3	2.0	2.0
Lane Grp Cap (vph)	3349	1043	221	4030	578	323
v/s Ratio Prot	0.15		c0.08	c0.25	c0.07	
v/s Ratio Perm		0.13				0.01
v/c Ratio	0.23	0.21	0.65	0.31	0.60	0.11
Uniform Delay, d1	9.0	8.9	50.0	3.4	50.4	47.5
Progression Factor	1.76	7.81	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	4.8	0.2	1.1	0.1
Delay (s)	15.9	69.4	54.8	3.6	51.5	47.6
Level of Service	B	E	D	A	D	D
Approach Delay (s)	32.3			8.8	49.7	
Approach LOS	C			A	D	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

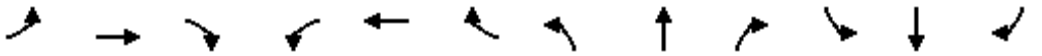
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	164	244	196	91	22	183	540	196	60	730	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-5%			0%	
Total Lost time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	88	182	271	218	101	24	203	600	218	67	811	53
RTOR Reduction (vph)	0	0	233	0	0	19	0	0	80	0	0	30
Lane Group Flow (vph)	88	182	38	218	101	5	203	600	138	67	811	23
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.3	15.8	15.8	11.5	21.4	21.4	16.8	59.6	71.1	5.7	48.5	48.5
Effective Green, g (s)	6.3	15.8	15.8	11.5	21.4	21.4	16.8	59.6	71.1	5.7	48.5	48.5
Actuated g/C Ratio	0.06	0.14	0.14	0.10	0.19	0.19	0.15	0.53	0.63	0.05	0.43	0.43
Clearance Time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	4.3	4.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	193	499	223	352	676	302	528	2774	1030	175	2202	685
v/s Ratio Prot	0.03	c0.05		c0.06	0.03		c0.06	0.12	0.01	0.02	c0.16	
v/s Ratio Perm			0.02			0.00			0.07			0.01
v/c Ratio	0.46	0.36	0.17	0.62	0.15	0.02	0.38	0.22	0.13	0.38	0.37	0.03
Uniform Delay, d1	51.2	43.6	42.3	48.2	37.7	36.8	42.9	13.9	8.2	51.4	21.4	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.6	0.5	2.3	0.2	0.0	0.2	0.2	0.0	0.5	0.5	0.1
Delay (s)	51.8	44.1	42.8	50.4	37.9	36.8	43.1	14.0	8.2	52.0	21.9	18.4
Level of Service	D	D	D	D	D	D	D	B	A	D	C	B
Approach Delay (s)		44.7			45.8			18.6			23.9	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

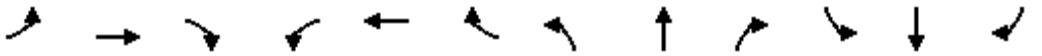


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	22	54	84	15	35	19	407	149	51	747	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1663		1770	1668		1770	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1663		1770	1668		1770	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	24	60	93	17	39	21	452	166	57	830	1
RTOR Reduction (vph)	0	55	0	0	33	0	0	0	59	0	0	0
Lane Group Flow (vph)	11	29	0	93	23	0	21	452	107	57	830	1
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	1.3	8.9		10.7	18.3		2.9	74.1	74.1	7.3	78.5	78.5
Effective Green, g (s)	2.3	10.4		11.7	19.8		3.9	77.1	77.1	8.3	81.5	81.5
Actuated g/C Ratio	0.02	0.09		0.10	0.17		0.03	0.64	0.64	0.07	0.68	0.68
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	34	144		173	275		58	3267	1017	122	2404	1075
v/s Ratio Prot	0.01	c0.02		c0.05	0.01		0.01	0.09		c0.03	c0.23	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.32	0.20		0.54	0.09		0.36	0.14	0.10	0.47	0.35	0.00
Uniform Delay, d1	58.1	50.9		51.6	42.4		56.8	8.4	8.2	53.7	8.1	6.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.6		1.6	0.1		1.4	0.1	0.2	1.0	0.1	0.0
Delay (s)	60.1	51.5		53.2	42.5		58.2	8.5	8.4	54.8	8.2	6.2
Level of Service	E	D		D	D		E	A	A	D	A	A
Approach Delay (s)		52.5			49.2			10.1			11.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	181	28	464	734	46	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	4.0	6.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	201	31	516	816	51	274
RTOR Reduction (vph)	0	23	0	0	0	115
Lane Group Flow (vph)	201	8	516	816	51	159
Turn Type		Perm	Prot			pt+ov
Protected Phases	4		3	8	2	2 3
Permitted Phases		4				
Actuated Green, G (s)	16.8	16.8	22.2	43.0	10.8	37.0
Effective Green, g (s)	16.8	16.8	22.2	43.0	10.8	37.0
Actuated g/C Ratio	0.26	0.26	0.35	0.67	0.17	0.58
Clearance Time (s)	6.0	6.0	4.0	6.0	4.0	
Vehicle Extension (s)	5.3	5.3	2.0	5.3	2.0	
Lane Grp Cap (vph)	491	417	616	1256	300	918
v/s Ratio Prot	0.11		c0.29	c0.44	0.03	c0.10
v/s Ratio Perm		0.01				
v/c Ratio	0.41	0.02	0.84	0.65	0.17	0.17
Uniform Delay, d1	19.4	17.4	19.1	6.0	22.7	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0	9.3	1.7	0.1	0.0
Delay (s)	20.7	17.4	28.4	7.7	22.8	6.3
Level of Service	C	B	C	A	C	A
Approach Delay (s)	20.3			15.7	8.9	
Approach LOS	C			B	A	

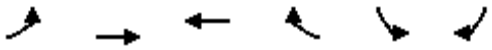
Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	304	59	0	114	400	180	15	639	96	291	733	636
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		2.0	3.7	3.7	2.0	4.0	4.0	3.0	4.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3471		1770	3471	1553	1770	3539	1583	1736	3539	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1736	3471		1770	3471	1553	1770	3539	1583	1736	3539	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	338	66	0	127	444	200	17	710	107	323	814	707
RTOR Reduction (vph)	0	0	0	0	0	165	0	0	76	0	0	126
Lane Group Flow (vph)	338	66	0	127	444	35	17	710	31	323	814	581
Heavy Vehicles (%)	4%	4%	2%	2%	4%	4%	2%	2%	2%	4%	2%	4%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	27.3	32.8		13.2	18.7	18.7	2.7	33.4	33.4	21.3	52.0	79.3
Effective Green, g (s)	28.3	35.8		15.2	21.0	21.0	4.7	35.4	35.4	22.3	54.0	83.3
Actuated g/C Ratio	0.23	0.30		0.13	0.17	0.17	0.04	0.29	0.29	0.18	0.45	0.69
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Vehicle Extension (s)	3.0	4.7		2.0	4.8	4.8	2.0	4.8	4.8	2.0	4.7	3.0
Lane Grp Cap (vph)	407	1030		223	604	270	69	1038	464	321	1583	1072
v/s Ratio Prot	c0.19	0.02		0.07	c0.13		0.01	c0.20		c0.19	0.23	0.13
v/s Ratio Perm						0.02			0.02			0.24
v/c Ratio	0.83	0.06		0.57	0.74	0.13	0.25	0.68	0.07	1.01	0.51	0.54
Uniform Delay, d1	43.9	30.4		49.7	47.2	42.1	56.3	37.7	30.8	49.2	23.9	9.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.4	0.0		2.0	5.5	0.4	0.7	2.3	0.1	51.8	0.5	0.6
Delay (s)	57.3	30.5		51.7	52.7	42.5	57.0	40.0	30.9	101.0	24.4	9.8
Level of Service	E	C		D	D	D	E	D	C	F	C	A
Approach Delay (s)		52.9			49.9			39.2			32.2	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	39.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.7	Sum of lost time (s)	13.7
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

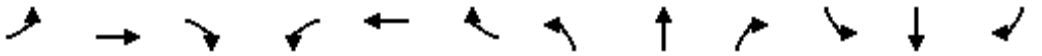
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	79	401	543	59	91	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1478	1770	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	88	446	603	66	101	293
RTOR Reduction (vph)	0	0	0	44	0	185
Lane Group Flow (vph)	88	446	603	22	101	108
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	10.1	29.3	15.2	15.2	7.7	17.8
Effective Green, g (s)	11.1	32.3	18.2	18.2	8.7	19.8
Actuated g/C Ratio	0.21	0.60	0.34	0.34	0.16	0.37
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	367	1125	1204	503	288	1188
v/s Ratio Prot	0.05	c0.24	c0.17		c0.06	0.02
v/s Ratio Perm				0.02		0.02
v/c Ratio	0.24	0.40	0.50	0.04	0.35	0.09
Uniform Delay, d1	17.7	5.5	14.0	11.8	19.9	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.5	0.1	0.3	0.0
Delay (s)	17.8	5.9	14.5	11.9	20.2	11.0
Level of Service	B	A	B	B	C	B
Approach Delay (s)		7.8	14.3		13.3	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

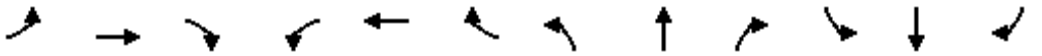
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	435	102	152	428	8	130	0	132	237	0	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0		2.0	4.0	3.0	2.0		3.0	3.7		3.7
Lane Util. Factor	1.00	1.00		1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.99	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	1798		1770	3539	1562	1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	1798		1770	3539	1562	1770		1583	1770		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	69	483	113	169	476	9	144	0	147	263	0	151
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	126	0	0	121
Lane Group Flow (vph)	69	589	0	169	476	9	144	0	21	263	0	30
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot			Prot		Free	Prot		custom	Prot		custom
Protected Phases	7	4		3	8		5			6		
Permitted Phases						Free			5			6
Actuated Green, G (s)	7.0	31.4		13.3	37.7	93.8	12.6		12.6	16.8		16.8
Effective Green, g (s)	9.0	33.4		15.3	39.7	93.8	14.6		13.6	18.8		18.8
Actuated g/C Ratio	0.10	0.36		0.16	0.42	1.00	0.16		0.14	0.20		0.20
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0		4.0	5.7		5.7
Vehicle Extension (s)	2.0	4.8		2.0	4.8		2.0		2.0	2.0		2.0
Lane Grp Cap (vph)	170	640		289	1498	1562	276		230	355		317
v/s Ratio Prot	0.04	c0.33		c0.10	0.13		c0.08			c0.15		
v/s Ratio Perm						0.01			0.01			0.02
v/c Ratio	0.41	0.92		0.58	0.32	0.01	0.52		0.09	0.74		0.10
Uniform Delay, d1	39.9	28.9		36.3	18.0	0.0	36.4		34.8	35.2		30.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.6	19.3		1.9	0.2	0.0	0.8		0.1	7.1		0.0
Delay (s)	40.5	48.2		38.3	18.3	0.0	37.2		34.8	42.3		30.6
Level of Service	D	D		D	B	A	D		C	D		C
Approach Delay (s)		47.4			23.2			36.0			38.0	
Approach LOS		D			C			D			D	

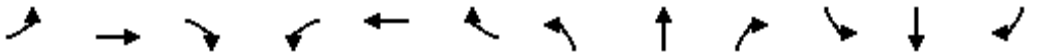
Intersection Summary			
HCM Average Control Delay	36.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	93.8	Sum of lost time (s)	11.7
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	150	591	75	89	53	268	784	45	58	1022	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	103	167	657	83	99	59	298	871	50	64	1136	101
RTOR Reduction (vph)	0	0	270	0	0	45	0	0	26	0	0	0
Lane Group Flow (vph)	103	167	387	83	99	14	298	871	24	64	1136	101
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	11.4	27.9	27.9	8.9	26.4	26.4	15.6	55.5	55.5	7.7	47.6	120.0
Effective Green, g (s)	12.4	30.9	30.9	9.9	28.9	28.9	16.6	58.5	58.5	8.7	50.6	120.0
Actuated g/C Ratio	0.10	0.26	0.26	0.08	0.24	0.24	0.14	0.49	0.49	0.07	0.42	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	183	911	408	146	852	381	475	1725	772	128	2144	1583
v/s Ratio Prot	c0.06	0.05		0.05	0.03		c0.09	0.25		0.04	c0.22	
v/s Ratio Perm			c0.24			0.01			0.02			c0.06
v/c Ratio	0.56	0.18	0.95	0.57	0.12	0.04	0.63	0.50	0.03	0.50	0.53	0.06
Uniform Delay, d1	51.2	34.7	43.8	53.0	35.6	34.9	48.8	20.9	16.0	53.6	25.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.2	32.0	3.0	0.1	0.1	2.6	1.1	0.1	1.1	0.3	0.1
Delay (s)	53.6	34.9	75.8	56.0	35.7	35.0	51.4	22.0	16.1	54.7	26.2	0.1
Level of Service	D	C	E	E	D	C	D	C	B	D	C	A
Approach Delay (s)		66.0			42.5			28.9			25.5	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM Average Control Delay	37.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	0	2	0	0	0	75	639	0	0	678	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0				3.0	2.6			2.6	3.0
Lane Util. Factor	0.97		1.00				1.00	0.95			0.95	1.00
Frpb, ped/bikes	1.00		0.99				1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	3433		1562				1770	3539			3539	1548
Flt Permitted	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	3433		1562				1770	3539			3539	1548
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	0	2	0	0	0	83	710	0	0	753	159
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	4	0	2	0	0	0	83	710	0	0	753	159
Confl. Peds. (#/hr)			5									5
Turn Type	Prot		Free				Prot					Free
Protected Phases	4						5	2			6	
Permitted Phases			Free									Free
Actuated Green, G (s)	1.3		46.0				4.2	34.7			26.5	46.0
Effective Green, g (s)	2.3		46.0				5.2	38.1			29.9	46.0
Actuated g/C Ratio	0.05		1.00				0.11	0.83			0.65	1.00
Clearance Time (s)	4.0						4.0	6.0			6.0	
Vehicle Extension (s)	2.0						2.0	3.9			3.9	
Lane Grp Cap (vph)	172		1562				200	2931			2300	1548
v/s Ratio Prot	0.00						c0.05	0.20			c0.21	
v/s Ratio Perm			0.00									c0.10
v/c Ratio	0.02		0.00				0.41	0.24			0.33	0.10
Uniform Delay, d1	20.8		0.0				19.0	0.8			3.6	0.0
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	0.0		0.0				0.5	0.1			0.1	0.1
Delay (s)	20.8		0.0				19.5	0.9			3.7	0.1
Level of Service	C		A				B	A			A	A
Approach Delay (s)		13.9			0.0			2.9			3.1	
Approach LOS		B			A			A			A	

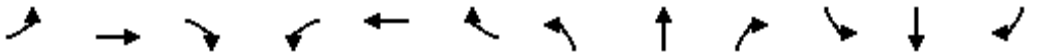
Intersection Summary			
HCM Average Control Delay	3.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	5.6
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	27	3	48	0	179	2	300	24	282	645	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0		3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.97		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.96	1.00		0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1852	1524	3433		1562	1770	3539	1562	1770	1863	1539
Flt Permitted		0.99	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1852	1524	3433		1562	1770	3539	1562	1770	1863	1539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	30	3	53	0	199	2	333	27	313	717	8
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	34	0	53	0	199	2	333	27	313	717	6
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	3	3		4			5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)		2.9	2.9	5.9		67.4	1.0	21.4	67.4	19.2	39.6	39.6
Effective Green, g (s)		3.9	3.9	6.9		67.4	2.0	22.4	67.4	20.2	40.6	40.6
Actuated g/C Ratio		0.06	0.06	0.10		1.00	0.03	0.33	1.00	0.30	0.60	0.60
Clearance Time (s)		4.0	4.0	4.0			4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0	2.0			2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)		107	88	351		1562	53	1176	1562	530	1122	927
v/s Ratio Prot		c0.02		0.02			0.00	0.09		c0.18	c0.38	
v/s Ratio Perm			0.00			c0.13			0.02			0.00
v/c Ratio		0.32	0.00	0.15		0.13	0.04	0.28	0.02	0.59	0.64	0.01
Uniform Delay, d1		30.5	29.9	27.6		0.0	31.8	16.6	0.0	20.1	8.7	5.3
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.6	0.0	0.1		0.2	0.1	0.3	0.0	1.2	1.6	0.0
Delay (s)		31.1	29.9	27.7		0.2	31.9	16.8	0.0	21.3	10.3	5.4
Level of Service		C	C	C		A	C	B	A	C	B	A
Approach Delay (s)		31.0			5.9			15.7			13.5	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	8	159	21	3	1	65	214	4	3	350	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1793	1478		1778		1770	3539	1583	1770	3539	1583
Flt Permitted		0.96	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1793	1478		1778		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	9	177	23	3	1	72	238	4	3	389	24
RTOR Reduction (vph)	0	0	145	0	1	0	0	0	2	0	0	14
Lane Group Flow (vph)	0	41	32	0	26	0	72	238	2	3	389	10
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		6.1	6.1		1.7		2.4	17.9	17.9	0.5	16.0	16.0
Effective Green, g (s)		8.0	8.0		3.6		3.4	20.9	20.9	1.5	19.0	19.0
Actuated g/C Ratio		0.18	0.18		0.08		0.08	0.47	0.47	0.03	0.43	0.43
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1	2.0	4.1	4.1
Lane Grp Cap (vph)		323	266		144		136	1666	745	60	1514	677
v/s Ratio Prot		c0.02			c0.01		c0.04	0.07		0.00	c0.11	
v/s Ratio Perm			0.02						0.00			0.01
v/c Ratio		0.13	0.12		0.18		0.53	0.14	0.00	0.05	0.26	0.02
Uniform Delay, d1		15.3	15.3		19.0		19.7	6.7	6.2	20.8	8.2	7.3
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1		0.2		1.7	0.1	0.0	0.1	0.1	0.0
Delay (s)		15.3	15.3		19.2		21.4	6.7	6.2	20.9	8.3	7.3
Level of Service		B	B		B		C	A	A	C	A	A
Approach Delay (s)		15.3			19.2			10.1			8.3	
Approach LOS		B			B			B			A	

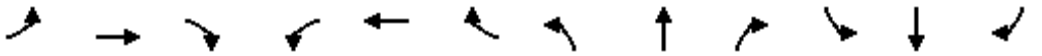
Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	10.4
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1655	54	66	741	40	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.0	3.0	3.0	3.6	3.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1839	60	73	823	44	153
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1839	60	73	823	44	153
Confl. Peds. (#/hr)			1700			
Turn Type		Free	Prot			Free
Protected Phases	4		3	8	2	
Permitted Phases		Free				Free
Actuated Green, G (s)	86.1	120.0	8.2	98.3	11.1	120.0
Effective Green, g (s)	89.1	120.0	9.2	101.3	12.1	120.0
Actuated g/C Ratio	0.74	1.00	0.08	0.84	0.10	1.00
Clearance Time (s)	6.0		4.0	6.0	4.6	
Vehicle Extension (s)	4.1		2.0	4.1	2.0	
Lane Grp Cap (vph)	3776	1583	136	4293	178	1583
v/s Ratio Prot	c0.36		c0.04	0.16	c0.02	
v/s Ratio Perm		0.04				0.10
v/c Ratio	0.49	0.04	0.54	0.19	0.25	0.10
Uniform Delay, d1	6.2	0.0	53.3	1.7	49.8	0.0
Progression Factor	1.86	1.00	0.64	0.75	1.00	1.00
Incremental Delay, d2	0.3	0.0	2.0	0.1	0.3	0.1
Delay (s)	11.9	0.0	36.4	1.4	50.0	0.1
Level of Service	B	A	D	A	D	A
Approach Delay (s)	11.5			4.3	11.3	
Approach LOS	B			A	B	

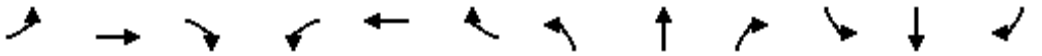
Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



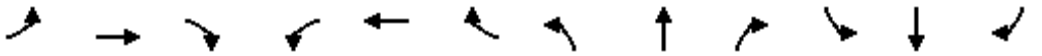
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	1791	0	11	771	163	2	0	23	196	1	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.3		3.0	2.3	3.0	6.3	6.3		1.7	1.7	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00		0.91	0.91	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	1770	5085		1770	5085	1583	1770	1583		3221	1615	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	1770	5085		1770	5085	1583	1770	1583		3221	1615	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	1990	0	12	857	181	2	0	26	218	1	33
RTOR Reduction (vph)	0	0	0	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	12	1990	0	12	857	181	2	1	0	146	73	33
Turn Type	Prot		Perm	Prot		Free	Split			Split		Free
Protected Phases	7	4		3	8		1	1		2	2	
Permitted Phases			4			Free						Free
Actuated Green, G (s)	2.9	80.5		2.9	80.5	120.0	5.4	5.4		10.2	10.2	120.0
Effective Green, g (s)	3.9	83.9		3.9	83.9	120.0	6.4	6.4		12.5	12.5	120.0
Actuated g/C Ratio	0.03	0.70		0.03	0.70	1.00	0.05	0.05		0.10	0.10	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		7.3	7.3		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	58	3555		58	3555	1583	94	84		336	168	1583
v/s Ratio Prot	c0.01	c0.39		0.01	0.17		0.00	0.00		c0.05	0.05	
v/s Ratio Perm						c0.11						0.02
v/c Ratio	0.21	0.56		0.21	0.24	0.11	0.02	0.02		0.43	0.43	0.02
Uniform Delay, d1	56.5	8.9		56.5	6.5	0.0	53.8	53.8		50.4	50.4	0.0
Progression Factor	1.05	1.34		1.14	0.93	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.6	0.6		1.7	0.0	0.1	0.1	0.1		0.9	1.8	0.0
Delay (s)	61.1	12.6		66.1	6.1	0.1	53.9	53.9		51.3	52.2	0.0
Level of Service	E	B		E	A	A	D	D		D	D	A
Approach Delay (s)		12.8			5.8			53.9			44.9	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



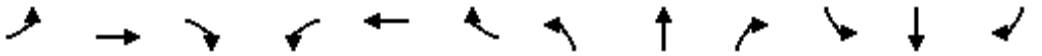
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	4	49	7	1	12	9	942	33	55	1959	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1782	1583	1681	1702	1583	1770	5085	1583	3433	5085	1583
Flt Permitted		0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1782	1583	1681	1702	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	4	54	8	1	13	10	1047	37	61	2177	6
RTOR Reduction (vph)	0	0	51	0	0	0	0	0	10	0	0	1
Lane Group Flow (vph)	0	41	3	4	5	13	10	1047	27	61	2177	5
Turn Type	Split		Perm	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	1	1		2	2		3	8		7	4	
Permitted Phases			1			Free			8			4
Actuated Green, G (s)		6.3	6.3	4.4	4.4	120.0	1.3	85.3	85.3	5.6	89.6	89.6
Effective Green, g (s)		7.3	7.3	5.4	5.4	120.0	2.3	88.7	88.7	6.6	93.0	93.0
Actuated g/C Ratio		0.06	0.06	0.05	0.05	1.00	0.02	0.74	0.74	0.05	0.78	0.78
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0	2.8	2.8		2.0	3.7	3.7	2.0	3.7	3.7
Lane Grp Cap (vph)		108	96	76	77	1583	34	3759	1170	189	3941	1227
v/s Ratio Prot		c0.02		0.00	c0.00		0.01	0.21		c0.02	c0.43	
v/s Ratio Perm			0.00			0.01			0.02			0.00
v/c Ratio		0.38	0.03	0.05	0.06	0.01	0.29	0.28	0.02	0.32	0.55	0.00
Uniform Delay, d1		54.2	53.0	54.9	54.9	0.0	58.0	5.1	4.2	54.5	5.3	3.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.04	0.73	0.82	1.12	0.33	0.48
Incremental Delay, d2		0.8	0.1	0.3	0.3	0.0	1.7	0.0	0.0	0.3	0.5	0.0
Delay (s)		55.0	53.1	55.1	55.2	0.0	62.1	3.8	3.4	61.6	2.2	1.5
Level of Service		D	D	E	E	A	E	A	A	E	A	A
Approach Delay (s)		53.9			22.6			4.3			3.9	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



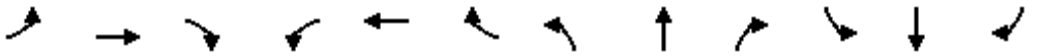
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1726	279	110	814	33	159	15	106	10	3	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1681	1700	1583	1681	1720	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1681	1700	1583	1681	1720	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	1918	310	122	904	37	177	17	118	11	3	7
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	9	1918	310	122	904	37	97	97	118	7	7	7
Turn Type	Prot		Free	Prot		Free	Split		Free	Split		Free
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.5	72.5	120.0	11.9	78.9	120.0	11.6	11.6	120.0	5.6	5.6	120.0
Effective Green, g (s)	6.5	75.9	120.0	12.9	82.3	120.0	12.6	12.6	120.0	6.6	6.6	120.0
Actuated g/C Ratio	0.05	0.63	1.00	0.11	0.69	1.00	0.10	0.10	1.00	0.05	0.05	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.7		2.0	3.7		2.5	2.5		3.0	3.0	
Lane Grp Cap (vph)	186	3216	1583	369	3487	1583	177	179	1583	92	95	1583
v/s Ratio Prot	0.00	c0.38		c0.04	c0.18		c0.06	0.06		0.00	0.00	
v/s Ratio Perm			c0.20			0.02			0.07			0.00
v/c Ratio	0.05	0.60	0.20	0.33	0.26	0.02	0.55	0.54	0.07	0.08	0.07	0.00
Uniform Delay, d1	53.8	13.0	0.0	49.6	7.2	0.0	51.0	51.0	0.0	53.8	53.8	0.0
Progression Factor	0.79	0.66	1.00	0.70	1.62	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.7	0.2	0.2	0.0	0.0	2.7	2.6	0.1	0.4	0.3	0.0
Delay (s)	42.5	9.3	0.2	34.8	11.7	0.0	53.7	53.6	0.1	54.2	54.1	0.0
Level of Service	D	A	A	C	B	A	D	D	A	D	D	A
Approach Delay (s)		8.2			14.0			33.4			36.1	
Approach LOS		A			B			C			D	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



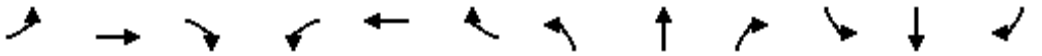
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	1142	539	74	664	480	163	280	52	567	514	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4	4.0	4.0	6.4	4.0	4.0	6.0	4.0	7.7	6.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.94	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	4990	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	4990	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	153	1269	599	82	738	533	181	311	58	630	571	132
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	153	1269	599	82	738	533	181	311	58	630	571	132
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.5	52.6	120.0	6.3	42.0	120.0	10.7	16.2	120.0	20.8	29.3	120.0
Effective Green, g (s)	14.5	52.6	120.0	6.3	42.0	120.0	10.7	16.2	120.0	20.8	29.3	120.0
Actuated g/C Ratio	0.12	0.44	1.00	0.05	0.35	1.00	0.09	0.13	1.00	0.17	0.24	1.00
Clearance Time (s)	6.4	6.4		4.0	6.4		4.0	6.0		7.7	6.7	
Vehicle Extension (s)	2.0	3.7		2.0	4.1		2.0	4.1		3.0	4.5	
Lane Grp Cap (vph)	415	2229	1583	180	1780	1583	306	686	1583	865	864	1583
v/s Ratio Prot	0.04	c0.25		0.02	0.15		c0.05	0.06		0.13	c0.16	
v/s Ratio Perm			c0.38			0.34			0.04			0.08
v/c Ratio	0.37	0.57	0.38	0.46	0.41	0.34	0.59	0.45	0.04	0.73	0.66	0.08
Uniform Delay, d1	48.5	25.2	0.0	55.2	29.7	0.0	52.5	47.8	0.0	46.9	40.9	0.0
Progression Factor	0.64	0.44	1.00	1.00	0.53	1.00	1.00	1.00	1.00	0.97	0.99	1.00
Incremental Delay, d2	0.2	0.3	0.6	0.6	0.7	0.5	2.0	0.7	0.0	3.0	2.2	0.1
Delay (s)	31.4	11.4	0.6	55.9	16.4	0.5	54.6	48.5	0.0	48.6	42.6	0.1
Level of Service	C	B	A	E	B	A	D	D	A	D	D	A
Approach Delay (s)		9.7			12.6			45.4			41.2	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	1661	4	16	1204	325	6	3	2	62	1	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1681	1735	1583	1681	1688	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1681	1735	1583	1681	1688	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	1846	4	18	1338	361	7	3	2	69	1	39
RTOR Reduction (vph)	0	0	1	0	0	122	0	0	2	0	0	36
Lane Group Flow (vph)	84	1846	3	18	1338	239	5	5	0	35	35	3
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	11.6	88.2	88.2	2.8	79.4	79.4	2.2	2.2	2.2	8.2	8.2	8.2
Effective Green, g (s)	11.6	88.2	88.2	2.8	79.4	79.4	2.2	2.2	2.2	8.2	8.2	8.2
Actuated g/C Ratio	0.10	0.74	0.74	0.02	0.66	0.66	0.02	0.02	0.02	0.07	0.07	0.07
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	2.0	2.0	3.6	3.6	3.6
Lane Grp Cap (vph)	171	3737	1164	41	3365	1047	31	32	29	115	115	108
v/s Ratio Prot	0.05	c0.36		0.01	c0.26		c0.00	0.00		c0.02	0.02	
v/s Ratio Perm			0.00			0.15			0.00			0.00
v/c Ratio	0.49	0.49	0.00	0.44	0.40	0.23	0.16	0.16	0.00	0.30	0.30	0.02
Uniform Delay, d1	51.4	6.6	4.2	57.8	9.3	8.1	58.0	58.0	57.8	53.2	53.2	52.2
Progression Factor	1.02	1.69	2.32	1.09	0.46	0.64	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	0.0	2.4	0.3	0.4	0.9	0.8	0.0	1.8	1.8	0.1
Delay (s)	52.9	11.3	9.8	65.4	4.6	5.6	58.9	58.8	57.8	55.0	55.0	52.3
Level of Service	D	B	A	E	A	A	E	E	E	E	E	D
Approach Delay (s)		13.1			5.5			58.7			54.0	
Approach LOS		B			A			E			D	

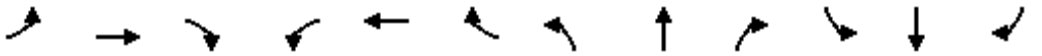
Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	1541	98	297	1092	178	353	113	210	487	135	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3485	5162	1607	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3485	5162	1607	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	1712	109	330	1213	198	392	126	233	541	150	82
RTOR Reduction (vph)	0	0	43	0	0	97	0	0	189	0	0	74
Lane Group Flow (vph)	84	1712	66	330	1213	101	392	126	44	541	150	8
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.9	52.6	72.6	15.7	61.4	61.4	20.0	10.4	10.4	21.3	11.7	11.7
Effective Green, g (s)	6.9	52.6	72.6	15.7	61.4	61.4	20.0	10.4	10.4	21.3	11.7	11.7
Actuated g/C Ratio	0.06	0.44	0.60	0.13	0.51	0.51	0.17	0.09	0.09	0.18	0.10	0.10
Clearance Time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.8	4.8	2.5	2.5	4.8	4.8	2.5	3.4	3.4	2.5	3.4	3.4
Lane Grp Cap (vph)	200	2263	1026	449	2602	810	572	307	137	609	345	154
v/s Ratio Prot	0.02	c0.33	0.01	c0.10	0.24		0.11	0.04		c0.16	c0.04	
v/s Ratio Perm			0.03			0.06			0.03			0.01
v/c Ratio	0.42	0.76	0.06	0.73	0.47	0.13	0.69	0.41	0.32	0.89	0.43	0.05
Uniform Delay, d1	54.6	28.3	9.7	50.1	18.8	15.3	47.0	51.9	51.5	48.2	51.0	49.1
Progression Factor	0.78	0.76	0.64	0.65	0.34	0.11	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	2.2	0.0	5.3	0.2	0.1	3.1	1.0	1.6	14.6	1.0	0.2
Delay (s)	44.0	23.8	6.3	37.6	6.6	1.8	50.2	52.9	53.0	62.8	52.0	49.3
Level of Service	D	C	A	D	A	A	D	D	D	E	D	D
Approach Delay (s)		23.7			11.9			51.5			59.3	
Approach LOS		C			B			D			E	

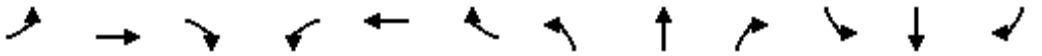
Intersection Summary			
HCM Average Control Delay	29.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	309	1715	243	183	1266	45	122	193	87	16	57	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	6.7	5.7	5.7	4.0	4.6	4.6
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	1.00	1.00	1.00	1.00	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	4990	1863	1583	1770	1863	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	4990	1863	1583	1770	1863	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	343	1906	270	203	1407	50	136	214	97	18	63	136
RTOR Reduction (vph)	0	0	79	0	0	25	0	0	80	0	0	126
Lane Group Flow (vph)	343	1906	191	203	1407	25	136	214	17	18	63	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.7	65.1	65.1	11.5	60.9	60.9	13.7	20.9	20.9	2.8	8.4	8.4
Effective Green, g (s)	15.7	65.1	65.1	11.5	60.9	60.9	13.7	20.9	20.9	2.8	8.4	8.4
Actuated g/C Ratio	0.13	0.54	0.54	0.10	0.51	0.51	0.11	0.17	0.17	0.02	0.07	0.07
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	6.7	5.7	5.7	4.0	4.6	4.6
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.3	4.3	2.0	2.0	2.0
Lane Grp Cap (vph)	449	2759	859	329	2581	803	570	324	276	41	130	195
v/s Ratio Prot	c0.10	c0.37		0.06	0.28		0.03	c0.11		0.01	c0.03	
v/s Ratio Perm			0.12			0.02			0.01			0.00
v/c Ratio	0.76	0.69	0.22	0.62	0.55	0.03	0.24	0.66	0.06	0.44	0.48	0.05
Uniform Delay, d1	50.4	20.1	14.3	52.1	20.1	14.8	48.4	46.2	41.4	57.8	53.7	52.1
Progression Factor	1.32	0.31	0.11	1.15	0.60	0.34	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	0.9	0.4	2.1	0.3	0.0	0.1	5.8	0.1	2.7	1.0	0.0
Delay (s)	71.1	7.2	1.9	62.3	12.4	5.1	48.5	52.0	41.5	60.5	54.8	52.1
Level of Service	E	A	A	E	B	A	D	D	D	E	D	D
Approach Delay (s)		15.3			18.3			48.7			53.6	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

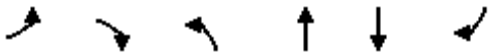


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	329	1466	4	9	1039	90	1	0	0	97	0	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	4.0			6.0	6.0	6.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00			0.95	0.95	0.88
Frt	1.00	1.00		1.00	1.00	0.85	1.00			1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95			0.95	0.95	1.00
Satd. Flow (prot)	3433	5083		1770	5085	1583	1770			1681	1681	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95			0.95	0.95	1.00
Satd. Flow (perm)	3433	5083		1770	5085	1583	1770			1681	1681	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	366	1629	4	10	1154	100	1	0	0	108	0	624
RTOR Reduction (vph)	0	0	0	0	0	44	0	0	0	0	0	577
Lane Group Flow (vph)	366	1633	0	10	1154	56	1	0	0	54	54	47
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	21.0	86.4		1.3	66.7	66.7	2.8			9.1	9.1	9.1
Effective Green, g (s)	21.0	86.4		1.3	66.7	66.7	2.8			9.1	9.1	9.1
Actuated g/C Ratio	0.18	0.72		0.01	0.56	0.56	0.02			0.08	0.08	0.08
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	4.0			6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.7		2.0	3.7	3.7	2.0			2.0	2.0	2.0
Lane Grp Cap (vph)	601	3660		19	2826	880	41			127	127	211
v/s Ratio Prot	c0.11	c0.32		0.01	c0.23		c0.00			c0.03	0.03	
v/s Ratio Perm						0.04						0.02
v/c Ratio	0.61	0.45		0.53	0.41	0.06	0.02			0.43	0.43	0.22
Uniform Delay, d1	45.7	6.9		59.0	15.3	12.3	57.3			53.0	53.0	52.1
Progression Factor	0.57	0.38		1.27	0.68	0.30	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1		11.3	0.4	0.1	0.1			0.8	0.8	0.2
Delay (s)	27.0	2.7		86.4	10.8	3.8	57.4			53.8	53.8	52.3
Level of Service	C	A		F	B	A	E			D	D	D
Approach Delay (s)		7.1			10.8			57.4			52.5	
Approach LOS		A			B			E			D	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

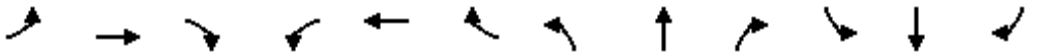
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	114	93	987	59	56	1496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	127	103	1097	66	62	1662
RTOR Reduction (vph)	0	90	0	21	0	0
Lane Group Flow (vph)	127	13	1097	45	62	1662
Turn Type		Perm		Perm	Prot	
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	14.6	14.6	81.7	81.7	7.6	93.3
Effective Green, g (s)	14.6	14.6	81.7	81.7	7.6	93.3
Actuated g/C Ratio	0.12	0.12	0.68	0.68	0.06	0.78
Clearance Time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Vehicle Extension (s)	2.5	2.5	3.5	3.5	2.0	3.7
Lane Grp Cap (vph)	215	193	3462	1078	112	3954
v/s Ratio Prot	c0.07		0.22		c0.04	c0.33
v/s Ratio Perm		0.01		0.03		
v/c Ratio	0.59	0.06	0.32	0.04	0.55	0.42
Uniform Delay, d1	49.9	46.7	7.8	6.3	54.6	4.4
Progression Factor	1.00	1.00	0.84	0.51	0.91	1.96
Incremental Delay, d2	3.6	0.1	0.2	0.1	3.1	0.3
Delay (s)	53.5	46.8	6.8	3.3	52.5	9.0
Level of Service	D	D	A	A	D	A
Approach Delay (s)	50.5		6.6			10.5
Approach LOS	D		A			B

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



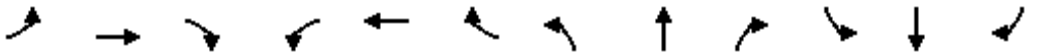
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	114	39	106	934	1360	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	5085	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	127	43	118	1038	1511	253
RTOR Reduction (vph)	0	39	0	0	0	60
Lane Group Flow (vph)	127	4	118	1038	1511	193
Turn Type		Perm	Prot			Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Actuated Green, G (s)	11.4	11.4	14.1	97.2	78.8	78.8
Effective Green, g (s)	11.4	11.4	14.1	97.2	78.8	78.8
Actuated g/C Ratio	0.10	0.10	0.12	0.81	0.66	0.66
Clearance Time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.1	4.1	4.1
Lane Grp Cap (vph)	326	150	208	4119	3339	1040
v/s Ratio Prot	c0.04		c0.07	0.20	c0.30	
v/s Ratio Perm		0.00				0.12
v/c Ratio	0.39	0.03	0.57	0.25	0.45	0.19
Uniform Delay, d1	51.0	49.3	50.1	2.7	10.1	8.1
Progression Factor	1.00	1.00	1.00	1.00	0.38	0.21
Incremental Delay, d2	0.3	0.0	2.1	0.1	0.4	0.4
Delay (s)	51.3	49.3	52.2	2.9	4.3	2.1
Level of Service	D	D	D	A	A	A
Approach Delay (s)	50.8			7.9	4.0	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



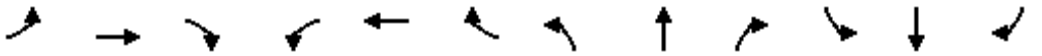
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	5	110	6	30	0	109	1007	6	7	1295	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	6	122	7	33	0	121	1119	7	8	1439	102
RTOR Reduction (vph)	0	0	110	0	0	0	0	0	2	0	0	24
Lane Group Flow (vph)	19	6	12	7	33	0	121	1119	5	8	1439	78
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	2.9	12.4	12.4	1.3	12.8		13.2	95.3	95.3	1.3	83.4	83.4
Effective Green, g (s)	2.9	12.4	12.4	1.3	12.8		13.2	95.3	95.3	1.3	83.4	83.4
Actuated g/C Ratio	0.02	0.10	0.10	0.01	0.10		0.10	0.73	0.73	0.01	0.64	0.64
Clearance Time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	2.5		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	39	178	151	18	183		180	3728	1160	18	3262	1016
v/s Ratio Prot	c0.01	0.00		0.00	c0.02		c0.07	0.22		0.00	c0.28	
v/s Ratio Perm			0.01						0.00			0.05
v/c Ratio	0.49	0.03	0.08	0.39	0.18		0.67	0.30	0.00	0.44	0.44	0.08
Uniform Delay, d1	62.8	53.4	53.6	64.0	53.8		56.3	5.9	4.6	64.0	11.6	8.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.1	0.3	5.0	0.3		7.5	0.2	0.0	6.2	0.2	0.1
Delay (s)	66.3	53.5	53.9	69.0	54.1		63.8	6.1	4.7	70.2	11.8	8.8
Level of Service	E	D	D	E	D		E	A	A	E	B	A
Approach Delay (s)		55.5			56.7			11.7			11.9	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



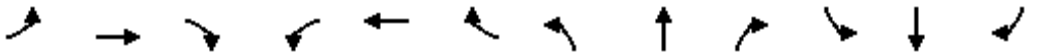
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	8	14	128	234	179	25	934	105	95	1303	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00		1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1684		1770	3539	1583	1770	5085	1583	1770	5060	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1684		1770	3539	1583	1770	5085	1583	1770	5060	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	9	16	142	260	199	28	1038	117	106	1448	50
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	12	10	0	142	260	199	28	1038	117	106	1496	0
Turn Type	Prot			Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						Free			Free			
Actuated Green, G (s)	2.6	8.2		15.7	20.5	120.0	4.5	65.9	120.0	11.6	73.0	
Effective Green, g (s)	2.6	8.2		15.7	20.5	120.0	4.5	65.9	120.0	11.6	73.0	
Actuated g/C Ratio	0.02	0.07		0.13	0.17	1.00	0.04	0.55	1.00	0.10	0.61	
Clearance Time (s)	4.0	4.9		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	5.6		2.0	4.3		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	38	115		232	605	1583	66	2793	1583	171	3078	
v/s Ratio Prot	0.01	0.01		c0.08	c0.07		0.02	0.20		c0.06	c0.30	
v/s Ratio Perm						0.13			0.07			
v/c Ratio	0.32	0.09		0.61	0.43	0.13	0.42	0.37	0.07	0.62	0.49	
Uniform Delay, d1	57.8	52.4		49.3	44.5	0.0	56.5	15.3	0.0	52.1	13.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.05	0.57	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.8		3.3	0.8	0.2	1.3	0.1	0.1	4.6	0.6	
Delay (s)	59.6	53.2		52.6	45.3	0.2	60.7	8.8	0.1	56.7	13.6	
Level of Service	E	D		D	D	A	E	A	A	E	B	
Approach Delay (s)		55.3			32.1			9.2			16.5	
Approach LOS		E			C			A			B	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



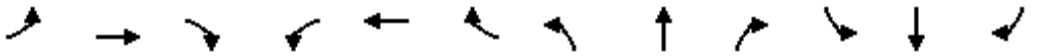
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	951	77	38	1204	535	124	483	47	626	518	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	5.7	5.7	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	86	1057	86	42	1338	594	138	537	52	696	576	147
RTOR Reduction (vph)	0	0	51	0	0	0	0	0	43	0	0	0
Lane Group Flow (vph)	86	1057	35	42	1338	594	138	537	9	696	576	147
Turn Type	Prot		Perm	Prot		Free	Prot		Perm	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			8			Free
Actuated Green, G (s)	6.4	49.4	49.4	5.0	48.0	120.0	13.0	20.3	20.3	25.6	32.9	120.0
Effective Green, g (s)	6.4	49.4	49.4	5.0	48.0	120.0	13.0	20.3	20.3	25.6	32.9	120.0
Actuated g/C Ratio	0.05	0.41	0.41	0.04	0.40	1.00	0.11	0.17	0.17	0.21	0.27	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	3.9	3.9	2.0	3.9		2.0	4.3	4.3	2.0	4.3	
Lane Grp Cap (vph)	183	2093	652	143	2034	1583	192	599	268	732	970	1583
v/s Ratio Prot	0.03	0.21		0.01	c0.26		0.08	c0.15		c0.20	0.16	
v/s Ratio Perm			0.02			c0.38			0.01			0.09
v/c Ratio	0.47	0.51	0.05	0.29	0.66	0.38	0.72	0.90	0.03	0.95	0.59	0.09
Uniform Delay, d1	55.2	26.2	21.2	55.8	29.3	0.0	51.7	48.8	41.6	46.6	37.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.75	1.00
Incremental Delay, d2	0.7	0.9	0.2	0.4	0.9	0.7	10.2	16.5	0.1	20.4	1.1	0.1
Delay (s)	55.8	27.1	21.4	56.2	30.2	0.7	61.9	65.3	41.7	58.3	29.6	0.1
Level of Service	E	C	C	E	C	A	E	E	D	E	C	A
Approach Delay (s)		28.7			21.8			63.0			40.6	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM Average Control Delay	34.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	2	24	31	2	76	25	505	12	13	578	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1778	1583		1779	1583	1770	3527		1770	3530	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1778	1583		1779	1583	1770	3527		1770	3530	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	2	27	34	2	84	28	561	13	14	642	11
RTOR Reduction (vph)	0	0	24	0	0	67	0	1	0	0	1	0
Lane Group Flow (vph)	0	44	3	0	36	17	28	573	0	14	652	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		5.1	5.1		12.3	12.3	2.2	29.6		0.8	28.2	
Effective Green, g (s)		6.1	6.1		13.3	13.3	3.2	32.6		1.8	31.2	
Actuated g/C Ratio		0.09	0.09		0.20	0.20	0.05	0.50		0.03	0.48	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		166	147		361	321	86	1755		49	1681	
v/s Ratio Prot		c0.02			c0.02		c0.02	0.16		0.01	c0.18	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.27	0.02		0.10	0.05	0.33	0.33		0.29	0.39	
Uniform Delay, d1		27.6	27.0		21.2	21.0	30.1	9.9		31.2	11.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.0	0.0	0.8	0.2		1.2	0.3	
Delay (s)		27.9	27.0		21.3	21.1	30.9	10.1		32.4	11.3	
Level of Service		C	C		C	C	C	B		C	B	
Approach Delay (s)		27.6			21.1			11.0			11.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	11.7
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

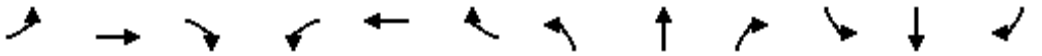


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	180	280	63	228	80	431	494	35	99	457	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1484	1856	3592	1477	3601	3592	1477	1837	3556	1460
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1484	1856	3592	1477	3601	3592	1477	1837	3556	1460
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	200	311	70	253	89	479	549	39	110	508	20
RTOR Reduction (vph)	0	0	110	0	0	59	0	0	24	0	0	14
Lane Group Flow (vph)	17	200	201	70	253	30	479	549	15	110	508	6
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	1.4	16.7	32.2	7.7	23.0	23.0	15.5	26.5	26.5	7.9	18.9	18.9
Effective Green, g (s)	2.4	19.7	34.2	8.7	26.0	26.0	16.5	29.5	29.5	8.9	21.9	21.9
Actuated g/C Ratio	0.03	0.25	0.44	0.11	0.33	0.33	0.21	0.38	0.38	0.11	0.28	0.28
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	57	905	649	206	1194	491	760	1355	557	209	996	409
v/s Ratio Prot	0.01	0.06	c0.07	c0.04	0.07		c0.13	0.15		0.06	c0.14	
v/s Ratio Perm			0.07			0.02			0.01			0.00
v/c Ratio	0.30	0.22	0.31	0.34	0.21	0.06	0.63	0.41	0.03	0.53	0.51	0.01
Uniform Delay, d1	37.1	23.2	14.3	32.1	18.7	17.8	28.1	17.9	15.3	32.7	23.6	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.2	0.1	0.4	0.2	0.1	1.3	0.3	0.0	1.1	0.7	0.0
Delay (s)	38.1	23.4	14.4	32.5	18.9	17.9	29.3	18.2	15.4	33.8	24.4	20.4
Level of Service	D	C	B	C	B	B	C	B	B	C	C	C
Approach Delay (s)		18.6			21.0			23.1			25.9	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	11.7
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	731	32	39	818	88	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	1.3	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3517		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3517		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	812	36	43	909	98	100
RTOR Reduction (vph)	3	0	0	0	0	78
Lane Group Flow (vph)	845	0	43	909	98	22
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	26.6		2.5	34.8	10.6	10.6
Effective Green, g (s)	29.3		3.5	37.5	11.6	11.6
Actuated g/C Ratio	0.55		0.07	0.70	0.22	0.22
Clearance Time (s)	5.7		4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1930		116	2485	384	344
v/s Ratio Prot	c0.24		0.02	c0.26	c0.06	
v/s Ratio Perm						0.01
v/c Ratio	0.44		0.37	0.37	0.26	0.06
Uniform Delay, d1	7.2		23.9	3.2	17.3	16.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3		0.7	0.2	0.1	0.0
Delay (s)	7.4		24.6	3.3	17.4	16.6
Level of Service	A		C	A	B	B
Approach Delay (s)	7.4			4.3	17.0	
Approach LOS	A			A	B	

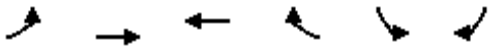
Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	7.3
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	147	571	49	316	136	253	875	24	98	688	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1562	1770	3539	1562	3433	3539	1562	1770	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1562	1770	3539	1562	3433	3539	1562	1770	3539	1562
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	163	634	54	351	151	281	972	27	109	764	28
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	51	163	634	54	351	151	281	972	27	109	764	28
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	7.7	17.5	120.0	8.3	18.5	120.0	14.2	62.8	120.0	11.7	60.3	120.0
Effective Green, g (s)	8.7	20.2	120.0	9.3	21.2	120.0	15.2	65.8	120.0	12.7	63.3	120.0
Actuated g/C Ratio	0.07	0.17	1.00	0.08	0.18	1.00	0.13	0.55	1.00	0.11	0.53	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	128	596	1562	137	625	1562	435	1941	1562	187	1867	1562
v/s Ratio Prot	0.03	0.05		0.03	c0.10		c0.08	c0.27		c0.06	0.22	
v/s Ratio Perm			c0.41			0.10			0.02			0.02
v/c Ratio	0.40	0.27	0.41	0.39	0.56	0.10	0.65	0.50	0.02	0.58	0.41	0.02
Uniform Delay, d1	53.2	43.5	0.0	52.7	45.2	0.0	49.8	16.9	0.0	51.1	17.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.4	0.8	0.7	1.7	0.1	2.5	0.9	0.0	3.0	0.2	0.0
Delay (s)	53.9	43.9	0.8	53.4	46.8	0.1	52.3	17.8	0.0	54.1	17.3	0.0
Level of Service	D	D	A	D	D	A	D	B	A	D	B	A
Approach Delay (s)		12.3			34.8			25.0			21.2	
Approach LOS		B			C			C			C	

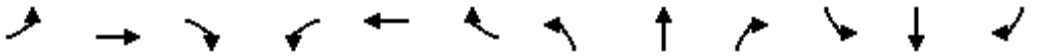
Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	162	434	394	144	328	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1511	1736	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1511	1736	1538
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	180	482	438	160	364	201
RTOR Reduction (vph)	0	0	0	102	0	91
Lane Group Flow (vph)	180	482	438	58	364	110
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	11.3	25.4	22.0	22.0	19.0	30.3
Effective Green, g (s)	12.3	27.4	24.0	24.0	22.0	36.3
Actuated g/C Ratio	0.18	0.41	0.36	0.36	0.33	0.55
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	321	1428	1251	545	573	838
v/s Ratio Prot	c0.10	c0.14	0.13		c0.21	0.03
v/s Ratio Perm				0.04		0.04
v/c Ratio	0.56	0.34	0.35	0.11	0.64	0.13
Uniform Delay, d1	24.7	13.4	15.6	14.2	18.9	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	0.2	0.1	1.7	0.0
Delay (s)	26.0	13.5	15.8	14.3	20.6	7.4
Level of Service	C	B	B	B	C	A
Approach Delay (s)		16.9	15.4		15.9	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	4.6
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	710	8	3	504	184	8	1	14	144	6	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3433		1787	3438	1488	1787	1616			1695	1471
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3433		1787	3438	1488	1787	1616			1695	1471
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	789	9	3	560	204	9	1	16	160	7	59
RTOR Reduction (vph)	0	1	0	0	0	126	0	14	0	0	0	0
Lane Group Flow (vph)	33	797	0	3	560	78	9	3	0	0	167	59
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	2.0	21.3		0.6	19.9	19.9	5.3	5.3			12.7	12.7
Effective Green, g (s)	3.0	23.3		1.6	21.9	21.9	6.3	6.3			13.7	13.7
Actuated g/C Ratio	0.05	0.40		0.03	0.38	0.38	0.11	0.11			0.24	0.24
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	90	1389		50	1307	566	195	177			403	350
v/s Ratio Prot	c0.02	c0.23		0.00	0.16		c0.01	0.00			c0.10	
v/s Ratio Perm						0.05						0.04
v/c Ratio	0.37	0.57		0.06	0.43	0.14	0.05	0.02			0.41	0.17
Uniform Delay, d1	26.4	13.3		27.3	13.2	11.7	23.0	22.9			18.6	17.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.9	0.6		0.2	0.2	0.1	0.0	0.0			0.7	0.2
Delay (s)	27.3	13.9		27.5	13.4	11.8	23.0	22.9			19.3	17.7
Level of Service	C	B		C	B	B	C	C			B	B
Approach Delay (s)		14.4			13.1			22.9			18.8	
Approach LOS		B			B			C			B	

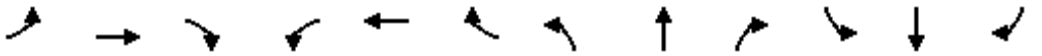
Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	705	197	211	555	144	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1565	1770	3539	1770	1572
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1565	1770	3539	1770	1572
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	783	219	234	617	160	217
RTOR Reduction (vph)	0	103	0	0	0	10
Lane Group Flow (vph)	783	116	234	617	160	207
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	19.5	29.7	16.3	39.8	10.2	26.5
Effective Green, g (s)	21.5	31.7	17.3	41.8	11.2	28.5
Actuated g/C Ratio	0.36	0.53	0.29	0.70	0.19	0.48
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1268	905	510	2466	330	825
v/s Ratio Prot	c0.22	0.02	c0.13	0.17	c0.09	0.07
v/s Ratio Perm		0.05				0.06
v/c Ratio	0.62	0.13	0.46	0.25	0.48	0.25
Uniform Delay, d1	15.9	7.2	17.5	3.3	21.8	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	0.2	0.2	0.4	0.1
Delay (s)	16.8	7.2	17.7	3.6	22.2	9.4
Level of Service	B	A	B	A	C	A
Approach Delay (s)	14.7			7.5	14.9	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

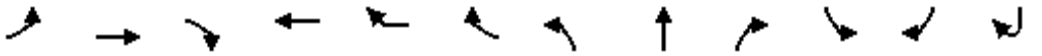
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	709	266	460	403	0	0	0	1012	0	0	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	4.0	4.0				4.0			4.0
Lane Util. Factor		0.91	1.00	0.97	0.95				1.00			1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00				1.00			1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00				1.00			1.00
Frt		1.00	0.85	1.00	1.00				0.86			0.86
Flt Protected		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (prot)		5085	1554	3433	3539				1611			1611
Flt Permitted		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (perm)		5085	1554	3433	3539				1611			1611
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	788	296	511	448	0	0	0	1124	0	0	403
RTOR Reduction (vph)	0	0	90	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	788	206	511	448	0	0	0	1124	0	0	403
Confl. Peds. (#/hr)			5									
Turn Type			Perm	Prot					Free			Free
Protected Phases		2		1	6							
Permitted Phases			2						Free			Free
Actuated Green, G (s)		36.8	36.8	13.5	60.0				60.0			60.0
Effective Green, g (s)		36.8	36.8	13.5	60.0				60.0			60.0
Actuated g/C Ratio		0.61	0.61	0.22	1.00				1.00			1.00
Clearance Time (s)		5.7	5.7	4.0	4.0							
Vehicle Extension (s)		3.4	3.4	2.0	3.0							
Lane Grp Cap (vph)		3119	953	772	3539				1611			1611
v/s Ratio Prot		0.15		0.15	0.13							
v/s Ratio Perm			0.13						c0.70			0.25
v/c Ratio		0.25	0.22	0.66	0.13				0.70			0.25
Uniform Delay, d1		5.3	5.2	21.2	0.0				0.0			0.0
Progression Factor		2.21	4.78	1.00	1.00				1.00			1.00
Incremental Delay, d2		0.2	0.5	1.7	0.0				2.5			0.4
Delay (s)		11.9	25.2	22.8	0.0				2.5			0.4
Level of Service		B	C	C	A				A			A
Approach Delay (s)		15.5			12.2			2.5			0.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

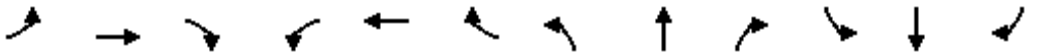
c Critical Lane Group



Movement	EBL	EBT	EBR	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL	SBR	SBR2
Lane Configurations												
Volume (vph)	130	1364	209	388	522	76	178	531	646	159	297	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	5.7	5.7	5.7	4.0	5.3	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	0.86	0.86	1.00	1.00	0.95	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	0.99	0.98	1.00	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	0.94	0.85	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1548	4484	1338	1583	1770	3539	1562	3433	1583	
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1548	4484	1338	1583	1770	3539	1562	3433	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	144	1516	232	431	580	84	198	590	718	177	330	58
RTOR Reduction (vph)	0	0	0	0	0	49	0	0	0	0	6	0
Lane Group Flow (vph)	144	1516	232	721	290	35	198	590	718	177	382	0
Confl. Peds. (#/hr)			5		5				5		5	
Turn Type	Prot		Free		Perm	Perm	Prot		Free	Prot	custom	
Protected Phases	5	2		6			3	8		7	4 5	
Permitted Phases			Free		6	6			Free			
Actuated Green, G (s)	9.8	68.5	130.0	54.7	54.7	54.7	18.9	34.9	130.0	11.6	42.7	
Effective Green, g (s)	9.8	68.5	130.0	54.7	54.7	54.7	18.9	34.9	130.0	11.6	42.7	
Actuated g/C Ratio	0.08	0.53	1.00	0.42	0.42	0.42	0.15	0.27	1.00	0.09	0.33	
Clearance Time (s)	4.0	5.7		5.7	5.7	5.7	4.0	5.3		4.0		
Vehicle Extension (s)	2.0	3.4		3.4	3.4	3.4	4.0	4.0		2.0		
Lane Grp Cap (vph)	259	1865	1548	1887	563	666	257	950	1562	306	520	
v/s Ratio Prot	0.04	c0.43		0.16			c0.11	0.17		0.05	c0.24	
v/s Ratio Perm			0.15		0.22	0.02			0.46			
v/c Ratio	0.56	0.81	0.15	0.38	0.52	0.05	0.77	0.62	0.46	0.58	0.73	
Uniform Delay, d1	58.0	25.4	0.0	26.0	27.8	22.3	53.5	41.7	0.0	56.9	38.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.5	4.0	0.2	0.1	0.9	0.0	14.0	1.4	1.0	1.6	4.6	
Delay (s)	59.5	29.4	0.2	26.1	28.7	22.3	67.5	43.2	1.0	58.5	43.2	
Level of Service	E	C	A	C	C	C	E	D	A	E	D	
Approach Delay (s)		28.1		26.5				26.3				
Approach LOS		C		C				C				

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

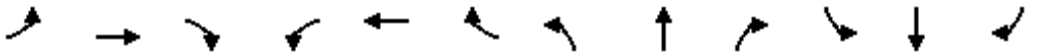
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	221	1514	351	50	680	53	96	157	54	66	235	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.3	4.0	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.94	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	6408	1562	4990	3539	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	6408	1562	4990	3539	1562	3433	5085	1562
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	246	1682	390	56	756	59	107	174	60	73	261	196
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	246	1682	390	56	756	59	107	174	60	73	261	196
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.8	69.6	120.0	7.2	63.0	120.0	10.8	16.2	120.0	8.0	13.0	120.0
Effective Green, g (s)	13.8	69.6	120.0	7.2	63.0	120.0	10.8	16.2	120.0	8.0	13.0	120.0
Actuated g/C Ratio	0.12	0.58	1.00	0.06	0.52	1.00	0.09	0.13	1.00	0.07	0.11	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	3.9		2.0	3.5	
Lane Grp Cap (vph)	395	2949	1562	206	3364	1562	449	478	1562	229	551	1562
v/s Ratio Prot	c0.07	c0.33		0.02	0.12		0.02	c0.05		0.02	c0.05	
v/s Ratio Perm			c0.25			0.04			0.04			0.13
v/c Ratio	0.62	0.57	0.25	0.27	0.22	0.04	0.24	0.36	0.04	0.32	0.47	0.13
Uniform Delay, d1	50.6	15.8	0.0	53.9	15.3	0.0	50.8	47.2	0.0	53.4	50.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.3	0.4	0.3	0.2	0.0	0.1	0.6	0.0	0.3	0.8	0.2
Delay (s)	52.8	16.1	0.4	54.2	15.5	0.0	50.9	47.8	0.0	53.7	51.0	0.2
Level of Service	D	B	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		17.4			16.9			40.4			32.6	
Approach LOS		B			B			D			C	

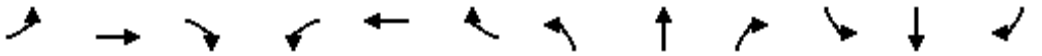
Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.4
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



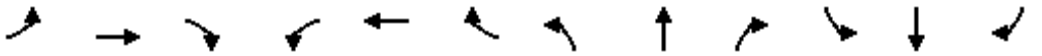
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	82	1184	193	33	574	19	146	155	4	37	234	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	3.2	3.0	3.0	3.5	3.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	91	1316	214	37	638	21	162	172	4	41	260	77
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	91	1316	214	37	638	21	162	172	4	41	260	77
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.5	64.4	120.0	5.0	58.9	120.0	15.2	24.9	120.0	6.3	15.7	120.0
Effective Green, g (s)	11.5	66.9	120.0	6.0	61.4	120.0	16.2	27.4	120.0	7.3	18.2	120.0
Actuated g/C Ratio	0.10	0.56	1.00	0.05	0.51	1.00	0.13	0.23	1.00	0.06	0.15	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	4.3		2.0	4.3		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	170	2835	1583	89	2602	1583	239	808	1583	108	537	1583
v/s Ratio Prot	c0.05	c0.26		c0.02	0.13		c0.09	0.05		0.02	c0.07	
v/s Ratio Perm			0.14			0.01			0.00			0.05
v/c Ratio	0.54	0.46	0.14	0.42	0.25	0.01	0.68	0.21	0.00	0.38	0.48	0.05
Uniform Delay, d1	51.7	15.9	0.0	55.3	16.4	0.0	49.4	37.6	0.0	54.2	46.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.5	0.2	1.1	0.1	0.0	5.9	0.2	0.0	0.8	0.9	0.1
Delay (s)	53.3	16.4	0.2	56.4	16.4	0.0	55.3	37.8	0.0	55.0	47.5	0.1
Level of Service	D	B	A	E	B	A	E	D	A	D	D	A
Approach Delay (s)		16.3			18.1			45.7			38.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



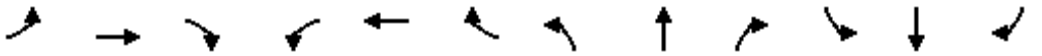
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	64	79	66	73	47	88	534	44	118	930	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	71	88	73	81	52	98	593	49	131	1033	18
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	39	71	88	73	81	52	98	593	49	131	1033	18
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.0	9.1	120.0	8.2	12.3	120.0	11.0	69.5	120.0	13.1	71.6	120.0
Effective Green, g (s)	6.0	11.6	120.0	9.2	14.8	120.0	12.0	72.0	120.0	14.1	74.1	120.0
Actuated g/C Ratio	0.05	0.10	1.00	0.08	0.12	1.00	0.10	0.60	1.00	0.12	0.62	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	89	342	1583	136	436	1583	177	3051	1583	208	3140	1583
v/s Ratio Prot	0.02	0.02		c0.04	c0.02		c0.06	0.12		c0.07	c0.20	
v/s Ratio Perm			0.06			0.03			0.03			0.01
v/c Ratio	0.44	0.21	0.06	0.54	0.19	0.03	0.55	0.19	0.03	0.63	0.33	0.01
Uniform Delay, d1	55.4	50.0	0.0	53.3	47.2	0.0	51.4	10.9	0.0	50.5	11.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.4	0.1	2.0	0.3	0.0	2.1	0.1	0.0	4.2	0.1	0.0
Delay (s)	56.6	50.3	0.1	55.4	47.5	0.0	53.6	11.0	0.0	54.7	11.1	0.0
Level of Service	E	D	A	E	D	A	D	B	A	D	B	A
Approach Delay (s)		29.2			38.3			15.9			15.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



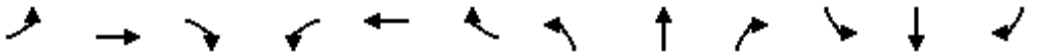
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	1065	430	45	914	334	297	348	24	358	352	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	233	1183	478	50	1016	371	330	387	27	398	391	98
RTOR Reduction (vph)	0	0	203	0	0	0	0	0	23	0	0	0
Lane Group Flow (vph)	233	1183	275	50	1016	371	330	387	4	398	391	98
Turn Type	Prot		Perm	Prot		Free	Prot		Perm	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			8			Free
Actuated Green, G (s)	16.3	58.7	58.7	5.3	47.7	120.0	18.2	17.8	17.8	18.2	17.8	120.0
Effective Green, g (s)	16.3	58.7	58.7	5.3	47.7	120.0	18.2	17.8	17.8	18.2	17.8	120.0
Actuated g/C Ratio	0.14	0.49	0.49	0.04	0.40	1.00	0.15	0.15	0.15	0.15	0.15	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3		2.0	3.9	3.9	2.0	3.9	
Lane Grp Cap (vph)	466	2487	774	152	2021	1583	521	525	235	521	525	1583
v/s Ratio Prot	c0.07	0.23		0.01	c0.20		0.10	c0.11		c0.12	0.11	
v/s Ratio Perm			0.17			c0.23			0.00			0.06
v/c Ratio	0.50	0.48	0.36	0.33	0.50	0.23	0.63	0.74	0.02	0.76	0.74	0.06
Uniform Delay, d1	48.1	20.4	19.0	55.6	27.2	0.0	47.8	48.9	43.6	48.8	48.9	0.0
Progression Factor	0.64	0.51	0.37	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.2	0.4	0.5	0.9	0.3	1.9	5.7	0.0	5.9	6.0	0.1
Delay (s)	31.2	10.7	7.4	56.1	28.1	0.3	49.6	54.5	43.7	54.8	54.9	0.1
Level of Service	C	B	A	E	C	A	D	D	D	D	D	A
Approach Delay (s)		12.4			21.9			52.0			48.8	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



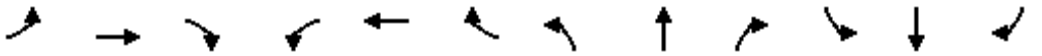
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	381	4	6	705	13	7	0	2	25	46	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7		3.0	4.7		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00		1.00	0.85			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (prot)	1770	3534		1770	3530		1770	1583			1830	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (perm)	1770	3534		1770	3530		1770	1583			1830	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	31	423	4	7	783	14	8	0	2	28	51	86
RTOR Reduction (vph)	0	0	0	0	1	0	0	2	0	0	0	71
Lane Group Flow (vph)	31	427	0	7	796	0	8	0	0	0	79	15
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	2.3	29.8		0.8	28.3		1.1	1.1			9.3	9.3
Effective Green, g (s)	3.3	30.8		1.8	29.3		2.1	2.1			10.3	10.3
Actuated g/C Ratio	0.06	0.52		0.03	0.50		0.04	0.04			0.18	0.18
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	100	1854		54	1762		63	57			321	278
v/s Ratio Prot	c0.02	0.12		0.00	c0.23		c0.00	0.00			c0.04	
v/s Ratio Perm												0.01
v/c Ratio	0.31	0.23		0.13	0.45		0.13	0.00			0.25	0.05
Uniform Delay, d1	26.6	7.5		27.7	9.5		27.4	27.3			20.9	20.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.6	0.1		0.4	0.3		0.3	0.0			0.1	0.0
Delay (s)	27.3	7.7		28.1	9.8		27.7	27.3			21.0	20.2
Level of Service	C	A		C	A		C	C			C	C
Approach Delay (s)		9.0			10.0			27.7			20.6	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	13.7
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



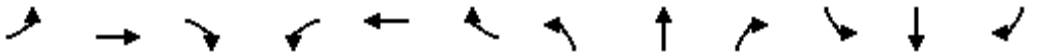
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	228	29	23	331	68	44	4	16	26	21	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97			0.97	1.00
Satd. Flow (prot)	1770	3480		1770	3539	1583		1739			1812	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97			0.97	1.00
Satd. Flow (perm)	1770	3480		1770	3539	1583		1739			1812	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	253	32	26	368	76	49	4	18	29	23	18
RTOR Reduction (vph)	0	8	0	0	0	40	0	13	0	0	0	16
Lane Group Flow (vph)	61	277	0	26	368	36	0	58	0	0	52	2
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	3.7	29.0		2.0	27.3	27.3		5.3			6.2	6.2
Effective Green, g (s)	4.7	32.0		3.0	30.3	28.3		6.3			7.2	7.2
Actuated g/C Ratio	0.08	0.53		0.05	0.50	0.47		0.10			0.12	0.12
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0			4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0			2.0	2.0
Lane Grp Cap (vph)	138	1850		88	1781	744		182			217	189
v/s Ratio Prot	c0.03	0.08		0.01	c0.10			c0.03			c0.03	
v/s Ratio Perm						0.02						0.00
v/c Ratio	0.44	0.15		0.30	0.21	0.05		0.32			0.24	0.01
Uniform Delay, d1	26.5	7.2		27.6	8.3	8.6		25.0			24.0	23.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.8	0.1		0.7	0.2	0.1		0.4			0.2	0.0
Delay (s)	27.3	7.3		28.3	8.5	8.7		25.3			24.2	23.4
Level of Service	C	A		C	A	A		C			C	C
Approach Delay (s)		10.8			9.6			25.3			24.0	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	11.7
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



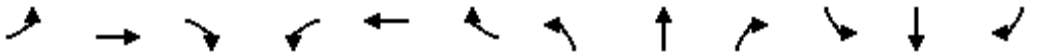
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	188	66	28	201	237	63	915	28	195	769	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	103	209	73	31	223	263	70	1017	31	217	854	168
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	103	209	73	31	223	263	70	1017	31	217	854	168
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	11.7	23.4	120.0	6.0	17.7	120.0	11.4	52.2	120.0	19.0	59.8	120.0
Effective Green, g (s)	12.7	25.9	120.0	7.0	20.2	120.0	12.4	55.2	120.0	20.0	62.8	120.0
Actuated g/C Ratio	0.11	0.22	1.00	0.06	0.17	1.00	0.10	0.46	1.00	0.17	0.52	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	187	402	1583	103	596	1583	183	1628	1583	295	1852	1583
v/s Ratio Prot	c0.06	c0.11		0.02	0.06		0.04	c0.29		c0.12	0.24	
v/s Ratio Perm			0.05			0.17			0.02			0.11
v/c Ratio	0.55	0.52	0.05	0.30	0.37	0.17	0.38	0.62	0.02	0.74	0.46	0.11
Uniform Delay, d1	50.9	41.6	0.0	54.2	44.3	0.0	50.2	24.6	0.0	47.5	18.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	1.9	0.1	0.6	0.7	0.2	0.5	1.0	0.0	8.0	0.8	0.1
Delay (s)	52.9	43.4	0.1	54.8	45.0	0.2	50.7	25.5	0.0	55.4	18.8	0.1
Level of Service	D	D	A	D	D	A	D	C	A	E	B	A
Approach Delay (s)		37.8			22.8			26.4			22.7	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	248	0	0	237	131	2	2	0	217	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0			3.0	3.0
Lane Util. Factor		0.95			1.00	1.00		1.00			1.00	1.00
Frt		1.00			1.00	0.85		1.00			1.00	0.85
Flt Protected		1.00			1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)		3539			1863	1583		1817			1770	1583
Flt Permitted		1.00			1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)		3539			1863	1583		1863			1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	276	0	0	263	146	2	2	0	241	0	6
RTOR Reduction (vph)	0	0	0	0	0	51	0	0	0	0	0	4
Lane Group Flow (vph)	0	276	0	0	263	95	0	4	0	0	241	2
Turn Type						pt+ov	Perm			Split		Perm
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases							3					4
Actuated Green, G (s)		24.7			18.3	31.1		0.6			12.8	12.8
Effective Green, g (s)		25.7			19.3	33.1		1.6			13.8	13.8
Actuated g/C Ratio		0.50			0.38	0.65		0.03			0.27	0.27
Clearance Time (s)		4.9			4.9			4.0			4.0	4.0
Vehicle Extension (s)		3.1			3.1			2.0			2.0	2.0
Lane Grp Cap (vph)		1783			705	1027		58			479	428
v/s Ratio Prot		c0.08			c0.14	0.06					c0.14	
v/s Ratio Perm								c0.00				0.00
v/c Ratio		0.15			0.37	0.09		0.07			0.50	0.00
Uniform Delay, d1		6.8			11.5	3.3		24.0			15.7	13.6
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.0			0.3	0.0		0.2			0.3	0.0
Delay (s)		6.8			11.8	3.4		24.2			16.0	13.6
Level of Service		A			B	A		C			B	B
Approach Delay (s)		6.8			8.8			24.2			16.0	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

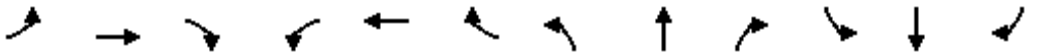


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	466	10	3	372	0	14	0	14	94	3	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9	3.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00			0.93		1.00	0.88	
Flt Protected		1.00	1.00	0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1695		1770	1633	
Flt Permitted		1.00	1.00	0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1695		1770	1633	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	518	11	3	413	0	16	0	16	104	3	14
RTOR Reduction (vph)	0	0	5	0	0	0	0	15	0	0	11	0
Lane Group Flow (vph)	0	518	6	3	413	0	0	17	0	104	6	0
Turn Type			Perm	Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases			2									
Actuated Green, G (s)		20.6	20.6	0.9	25.5			0.9		8.2	8.2	
Effective Green, g (s)		21.6	21.6	1.9	26.5			1.9		9.2	9.2	
Actuated g/C Ratio		0.45	0.45	0.04	0.56			0.04		0.19	0.19	
Clearance Time (s)		4.9	4.9	4.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1	3.1	2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1609	720	71	1974			68		343	316	
v/s Ratio Prot		c0.15		0.00	c0.12			c0.01		c0.06	0.00	
v/s Ratio Perm			0.00									
v/c Ratio		0.32	0.01	0.04	0.21			0.24		0.30	0.02	
Uniform Delay, d1		8.3	7.1	21.9	5.3			22.1		16.4	15.5	
Progression Factor		1.00	1.00	1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0	0.1	0.1			0.7		0.2	0.0	
Delay (s)		8.4	7.1	22.0	5.3			22.8		16.6	15.5	
Level of Service		A	A	C	A			C		B	B	
Approach Delay (s)		8.4			5.4			22.8			16.4	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	47.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

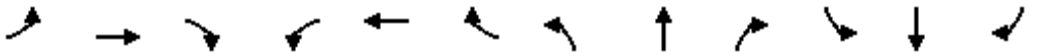
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	564	15	101	144	33	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		3.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3525		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3525		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	627	17	112	160	37	190
RTOR Reduction (vph)	3	0	0	0	0	162
Lane Group Flow (vph)	641	0	112	160	37	28
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	20.0		4.5	28.5	5.4	5.4
Effective Green, g (s)	21.0		5.5	29.5	6.4	6.4
Actuated g/C Ratio	0.49		0.13	0.69	0.15	0.15
Clearance Time (s)	4.9		4.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	1730		227	2439	265	237
v/s Ratio Prot	c0.18		c0.06	0.05	c0.02	
v/s Ratio Perm						0.02
v/c Ratio	0.37		0.49	0.07	0.14	0.12
Uniform Delay, d1	6.8		17.4	2.2	15.8	15.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1		0.6	0.0	0.1	0.1
Delay (s)	6.9		18.0	2.2	15.9	15.8
Level of Service	A		B	A	B	B
Approach Delay (s)	6.9			8.7	15.9	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	42.8	Sum of lost time (s)	9.9
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



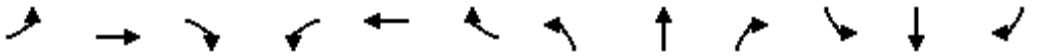
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	672	4	19	623	51	3	2	8	289	4	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3536		1770	3499			1683		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3536		1770	3499			1683		1681	1687	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	747	4	21	692	57	3	2	9	321	4	42
RTOR Reduction (vph)	0	0	0	0	4	0	0	9	0	0	0	35
Lane Group Flow (vph)	32	751	0	21	745	0	0	5	0	164	161	7
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	4.4	62.7		2.8	61.1			2.4		14.6	14.6	14.6
Effective Green, g (s)	5.4	63.7		3.8	62.1			3.4		15.6	15.6	15.6
Actuated g/C Ratio	0.05	0.64		0.04	0.62			0.03		0.16	0.16	0.16
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	96	2252		67	2173			57		262	263	247
v/s Ratio Prot	c0.02	0.21		0.01	c0.21			c0.00		c0.10	0.10	
v/s Ratio Perm												0.00
v/c Ratio	0.33	0.33		0.31	0.34			0.09		0.63	0.61	0.03
Uniform Delay, d1	45.6	8.4		46.8	9.1			46.8		39.5	39.4	35.8
Progression Factor	1.00	1.00		0.65	2.32			1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.4		0.9	0.1			0.3		4.0	3.6	0.0
Delay (s)	46.3	8.8		31.4	21.2			47.1		43.5	43.0	35.8
Level of Service	D	A		C	C			D		D	D	D
Approach Delay (s)		10.3			21.5			47.1			42.4	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



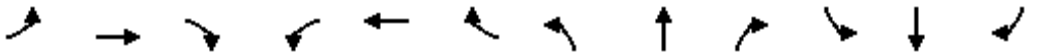
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	877	9	40	633	237	11	7	20	399	7	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	1.00	*0.80		1.00	0.95	1.00	1.00	1.00	1.00	*0.70	*0.70	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	2976		1770	3539	1583	1770	1863	1583	1239	1244	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	2976		1770	3539	1583	1770	1863	1583	1239	1244	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	146	974	10	44	703	263	12	8	22	443	8	137
RTOR Reduction (vph)	0	0	0	0	0	140	0	0	21	0	0	111
Lane Group Flow (vph)	146	984	0	44	703	123	12	8	1	226	225	26
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	12.8	54.7		4.9	46.8	46.8	3.5	3.5	3.5	19.1	19.1	19.1
Effective Green, g (s)	12.8	54.7		4.9	46.8	46.8	3.5	3.5	3.5	19.1	19.1	19.1
Actuated g/C Ratio	0.13	0.55		0.05	0.47	0.47	0.04	0.04	0.04	0.19	0.19	0.19
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.3		2.0	3.5	3.5	2.0	2.0	2.0	2.3	2.3	2.3
Lane Grp Cap (vph)	227	1628		87	1656	741	62	65	55	237	238	302
v/s Ratio Prot	c0.08	c0.33		0.02	0.20		c0.01	0.00		c0.18	0.18	
v/s Ratio Perm						0.08			0.00			0.02
v/c Ratio	0.64	0.60		0.51	0.42	0.17	0.19	0.12	0.01	0.95	0.95	0.09
Uniform Delay, d1	41.4	15.3		46.4	17.7	15.3	46.9	46.8	46.6	40.0	39.9	33.3
Progression Factor	0.91	0.94		1.12	0.69	0.29	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	1.6		1.5	0.2	0.1	0.6	0.3	0.0	45.2	42.9	0.1
Delay (s)	42.0	16.0		53.6	12.3	4.5	47.4	47.1	46.6	85.2	82.8	33.3
Level of Service	D	B		D	B	A	D	D	D	F	F	C
Approach Delay (s)		19.4			12.1			46.9			72.2	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



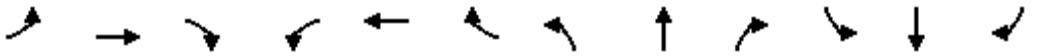
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	812	133	0	811	647	0	0	0	206	521	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3			2.9	3.0				3.7	4.3	3.7
Lane Util. Factor		0.95			0.91	0.91				0.95	*0.85	1.00
Frt		0.98			0.97	0.85				1.00	1.00	0.85
Flt Protected		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3464			3289	1441				1681	1580	1583
Flt Permitted		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3464			3289	1441				1681	1580	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	902	148	0	901	719	0	0	0	229	579	157
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1050	0	0	1104	496	0	0	0	206	602	157
Turn Type						Free				Split		custom
Protected Phases		2			6					4	4	4
Permitted Phases						Free						6
Actuated Green, G (s)		59.1			59.1	100.0				30.7	30.7	89.8
Effective Green, g (s)		60.7			61.1	100.0				32.3	31.7	93.0
Actuated g/C Ratio		0.61			0.61	1.00				0.32	0.32	0.93
Clearance Time (s)		4.9			4.9					5.3	5.3	5.3
Vehicle Extension (s)		3.8			3.8					2.0	2.0	2.0
Lane Grp Cap (vph)		2103			2010	1441				543	501	1531
v/s Ratio Prot		0.30			c0.34					0.12	c0.38	0.03
v/s Ratio Perm						0.34						0.07
v/c Ratio		0.50			0.55	0.34				0.38	1.20	0.10
Uniform Delay, d1		11.1			11.4	0.0				26.1	34.1	0.3
Progression Factor		0.85			1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.6			0.4	0.7				0.2	108.6	0.0
Delay (s)		10.1			11.8	0.7				26.3	142.8	0.3
Level of Service		B			B	A				C	F	A
Approach Delay (s)		10.1			8.4			0.0			94.7	
Approach LOS		B			A			A			F	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	890	0	0	1162	140	0	0	1243	0	0	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.9			3.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4797	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4797	1362			1611			2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	142	989	0	0	1291	156	0	0	1381	0	0	329
RTOR Reduction (vph)	0	0	0	0	1	38	0	0	0	0	0	96
Lane Group Flow (vph)	142	989	0	0	1306	102	0	0	1381	0	0	233
Turn Type	Prot					Perm			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						6			Free			
Actuated Green, G (s)	9.2	60.0			41.9	41.9			60.0			9.2
Effective Green, g (s)	11.2	60.0			43.9	43.9			60.0			11.2
Actuated g/C Ratio	0.19	1.00			0.73	0.73			1.00			0.19
Clearance Time (s)	4.0	4.9			4.9	4.9						4.0
Vehicle Extension (s)	2.0	3.9			3.8	3.8						2.0
Lane Grp Cap (vph)	330	3539			3510	997			1611			520
v/s Ratio Prot	0.08	0.28			0.27							0.08
v/s Ratio Perm						0.08			c0.86			
v/c Ratio	0.43	0.28			0.37	0.10			0.86			0.45
Uniform Delay, d1	21.6	0.0			3.0	2.3			0.0			21.7
Progression Factor	1.00	1.00			1.44	3.51			1.00			1.00
Incremental Delay, d2	0.3	0.1			0.3	0.2			6.1			0.2
Delay (s)	21.9	0.1			4.6	8.4			6.1			21.9
Level of Service	C	A			A	A			A			C
Approach Delay (s)		2.8			4.9			6.1			21.9	
Approach LOS		A			A			A			C	

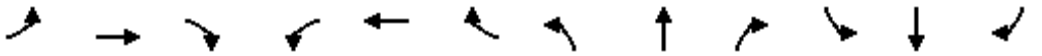
Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	355	1588	190	108	1009	42	176	294	83	44	243	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.0	4.0	4.9	4.9	4.0	4.9		4.0	5.3	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1559	3433	5085	1554	3433	3405		3433	3539	1569
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1559	3433	5085	1554	3433	3405		3433	3539	1569
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	394	1764	211	120	1121	47	196	327	92	49	270	130
RTOR Reduction (vph)	0	0	81	0	0	25	0	22	0	0	0	41
Lane Group Flow (vph)	394	1764	130	120	1121	22	196	397	0	49	270	89
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases			2			6						4
Actuated Green, G (s)	17.7	62.7	73.9	10.8	55.8	55.8	11.2	20.7		8.0	17.1	34.8
Effective Green, g (s)	17.7	62.7	73.9	10.8	55.8	55.8	11.2	20.7		8.0	17.1	34.8
Actuated g/C Ratio	0.15	0.52	0.62	0.09	0.46	0.46	0.09	0.17		0.07	0.14	0.29
Clearance Time (s)	4.0	4.9	4.0	4.0	4.9	4.9	4.0	4.9		4.0	5.3	4.0
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5		2.0	5.1	2.0
Lane Grp Cap (vph)	506	2657	960	309	2365	723	320	587		229	504	455
v/s Ratio Prot	c0.11	c0.35	0.01	0.03	c0.22		0.06	c0.12		0.01	c0.08	0.03
v/s Ratio Perm			0.07			0.01						0.03
v/c Ratio	0.78	0.66	0.14	0.39	0.47	0.03	0.61	0.68		0.21	0.54	0.20
Uniform Delay, d1	49.3	20.9	9.7	51.5	22.0	17.4	52.3	46.5		53.0	47.8	32.1
Progression Factor	1.00	1.00	1.00	0.90	0.97	2.35	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.4	1.0	0.0	0.3	0.3	0.0	2.4	3.7		0.2	2.1	0.1
Delay (s)	54.7	22.0	9.7	46.7	21.7	41.0	54.8	50.2		53.2	49.8	32.1
Level of Service	D	C	A	D	C	D	D	D		D	D	C
Approach Delay (s)		26.3			24.7			51.6			45.1	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	31.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.9	
Intersection Capacity Utilization	63.5%	ICU Level of Service	B	
Analysis Period (min)	15			

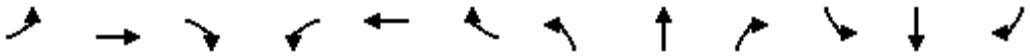
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1607	27	24	1070	25	17	10	38	35	11	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96		1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1770	5069		1770	5085	1523		1806	1583	1681	1723	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1770	5069		1770	5085	1523		1806	1583	1681	1723	1555
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	1786	30	27	1189	28	19	11	42	39	12	40
RTOR Reduction (vph)	0	1	0	0	0	9	0	0	40	0	0	37
Lane Group Flow (vph)	78	1815	0	27	1189	19	0	30	2	25	26	3
Confl. Peds. (#/hr)			5			5						5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	8.6	77.3		9.6	78.3	78.3		6.3	6.3	9.9	9.9	9.9
Effective Green, g (s)	8.6	77.3		9.6	78.3	78.3		6.3	6.3	9.9	9.9	9.9
Actuated g/C Ratio	0.07	0.64		0.08	0.65	0.65		0.05	0.05	0.08	0.08	0.08
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.7		2.0	5.6	5.6		2.5	2.5	2.0	2.0	2.0
Lane Grp Cap (vph)	127	3265		142	3318	994		95	83	139	142	128
v/s Ratio Prot	0.04	c0.36		0.02	c0.23			c0.02		0.01	c0.02	
v/s Ratio Perm						0.01			0.00			0.00
v/c Ratio	0.61	0.56		0.19	0.36	0.02		0.32	0.03	0.18	0.18	0.03
Uniform Delay, d1	54.1	11.8		51.6	9.5	7.3		54.8	53.9	51.3	51.3	50.6
Progression Factor	1.36	0.31		0.81	0.48	0.22		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	0.5		0.2	0.2	0.0		1.4	0.1	0.2	0.2	0.0
Delay (s)	78.4	4.2		42.2	4.7	1.6		56.2	54.0	51.5	51.5	50.6
Level of Service	E	A		D	A	A		E	D	D	D	D
Approach Delay (s)		7.3			5.5			54.9			51.1	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

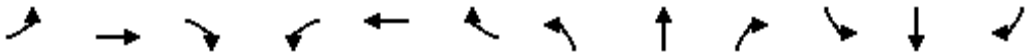
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1571	33	5	1065	23	90	20	20	28	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.6	4.6	
Lane Util. Factor	1.00	0.91		1.00	0.91		0.95	0.95		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.98		0.95	0.98	
Satd. Flow (prot)	1770	5060		1770	5058		1681	1656		1681	1642	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.98		0.95	0.98	
Satd. Flow (perm)	1770	5060		1770	5058		1681	1656		1681	1642	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	1746	37	6	1183	26	100	22	22	31	6	6
RTOR Reduction (vph)	0	1	0	0	1	0	0	15	0	0	5	0
Lane Group Flow (vph)	14	1782	0	6	1208	0	73	56	0	22	16	0
Confl. Peds. (#/hr)			20			20						20
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	3.4	71.5		1.4	69.5		10.3	10.3		19.3	19.3	
Effective Green, g (s)	3.4	71.5		1.4	69.5		10.3	10.3		19.3	19.3	
Actuated g/C Ratio	0.03	0.60		0.01	0.58		0.09	0.09		0.16	0.16	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.6	4.6	
Vehicle Extension (s)	2.0	5.6		2.0	5.6		2.5	2.5		2.0	2.0	
Lane Grp Cap (vph)	50	3015		21	2929		144	142		270	264	
v/s Ratio Prot	c0.01	c0.35		0.00	0.24		c0.04	0.03		c0.01	0.01	
v/s Ratio Perm												
v/c Ratio	0.28	0.59		0.29	0.41		0.51	0.40		0.08	0.06	
Uniform Delay, d1	57.1	15.1		58.8	14.0		52.4	51.9		42.8	42.7	
Progression Factor	0.70	0.85		1.19	1.10		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.5		2.6	0.4		2.0	1.3		0.0	0.0	
Delay (s)	41.0	13.4		72.4	15.8		54.5	53.2		42.9	42.7	
Level of Service	D	B		E	B		D	D		D	D	
Approach Delay (s)		13.6			16.0			53.9			42.8	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

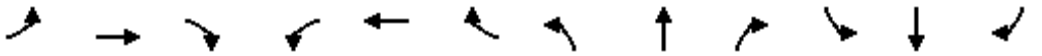
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	1513	32	12	1080	1	9	4	8	16	2	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.90		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5066		1770	5085		1770	1643		1770	1576	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5066		1770	5085		1770	1643		1770	1576	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	48	1681	36	13	1200	1	10	4	9	18	2	19
RTOR Reduction (vph)	0	1	0	0	0	0	0	9	0	0	18	0
Lane Group Flow (vph)	48	1716	0	13	1201	0	10	4	0	18	3	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.8	87.8		5.7	86.7		1.5	4.5		5.1	8.1	
Effective Green, g (s)	6.8	87.8		5.7	86.7		1.5	4.5		5.1	8.1	
Actuated g/C Ratio	0.06	0.73		0.05	0.72		0.01	0.04		0.04	0.07	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	5.8		2.0	5.8		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	100	3707		84	3674		22	62		75	106	
v/s Ratio Prot	0.03	c0.34		0.01	c0.24		c0.01	0.00		c0.01	c0.00	
v/s Ratio Perm												
v/c Ratio	0.48	0.46		0.15	0.33		0.45	0.07		0.24	0.03	
Uniform Delay, d1	54.9	6.5		54.8	6.0		58.8	55.7		55.6	52.3	
Progression Factor	0.94	0.82		0.91	1.57		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.4		0.3	0.1		14.2	0.5		1.7	0.1	
Delay (s)	52.7	5.7		50.1	9.7		73.0	56.2		57.2	52.4	
Level of Service	D	A		D	A		E	E		E	D	
Approach Delay (s)		7.0			10.1			63.5			54.6	
Approach LOS		A			B			E			D	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

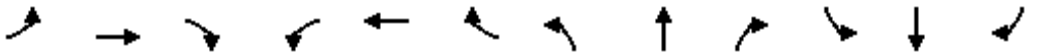
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	1223	89	101	958	91	169	501	243	66	299	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.0	4.0	4.9	4.0	5.0	6.7	6.7	5.0	6.3	6.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1562	3433	3539	1555	3433	3539	1556
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1562	3433	3539	1555	3433	3539	1556
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	196	1359	99	112	1064	101	188	557	270	73	332	29
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	217	0	0	25
Lane Group Flow (vph)	196	1359	99	112	1064	101	188	557	53	73	332	4
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			8			4
Actuated Green, G (s)	13.3	58.7	120.0	10.3	55.7	120.0	13.6	23.4	23.4	7.0	17.2	17.2
Effective Green, g (s)	13.3	58.7	120.0	10.3	55.7	120.0	13.6	23.4	23.4	7.0	17.2	17.2
Actuated g/C Ratio	0.11	0.49	1.00	0.09	0.46	1.00	0.11	0.19	0.19	0.06	0.14	0.14
Clearance Time (s)	4.0	4.9		4.0	4.9		5.0	6.7	6.7	5.0	6.3	6.3
Vehicle Extension (s)	2.0	5.6		2.0	5.6		2.0	2.7	2.7	2.0	3.1	3.1
Lane Grp Cap (vph)	380	2487	1562	295	2360	1562	389	690	303	200	507	223
v/s Ratio Prot	c0.06	c0.27		0.03	0.21		c0.05	c0.16		0.02	0.09	
v/s Ratio Perm			0.06			0.06			0.03			0.00
v/c Ratio	0.52	0.55	0.06	0.38	0.45	0.06	0.48	0.81	0.17	0.36	0.65	0.02
Uniform Delay, d1	50.3	21.4	0.0	51.8	21.8	0.0	49.9	46.1	40.2	54.4	48.6	44.2
Progression Factor	1.14	0.61	1.00	0.67	0.30	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.8	0.1	0.3	0.3	0.1	0.3	6.8	0.2	0.4	3.1	0.0
Delay (s)	57.7	13.8	0.1	34.8	6.8	0.1	50.2	52.9	40.5	54.8	51.7	44.2
Level of Service	E	B	A	C	A	A	D	D	D	D	D	D
Approach Delay (s)		18.2			8.7			49.1			51.7	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

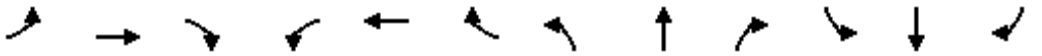


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	159	978	196	240	1465	150	330	693	135	185	732	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	5.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3319	5085	1545	3319	5085	1560	3319	5085	1560	3319	5022	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3319	5085	1545	3319	5085	1560	3319	5085	1560	3319	5022	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	177	1087	218	267	1628	167	367	770	150	206	813	62
RTOR Reduction (vph)	0	0	143	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	177	1087	75	267	1628	167	367	770	150	206	868	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	11.0	40.2	40.2	14.0	45.2	120.0	17.3	31.9	120.0	12.2	26.8	
Effective Green, g (s)	12.0	43.2	41.2	15.0	48.2	120.0	18.3	34.9	120.0	13.2	29.8	
Actuated g/C Ratio	0.10	0.36	0.34	0.12	0.40	1.00	0.15	0.29	1.00	0.11	0.25	
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.1	4.1	2.0	3.3		2.0	4.2		2.0	4.5	
Lane Grp Cap (vph)	332	1831	530	415	2042	1560	506	1479	1560	365	1247	
v/s Ratio Prot	0.05	c0.21		0.08	c0.32		c0.11	0.15		0.06	c0.17	
v/s Ratio Perm			0.05			0.11			0.10			
v/c Ratio	0.53	0.59	0.14	0.64	0.80	0.11	0.73	0.52	0.10	0.56	0.70	
Uniform Delay, d1	51.3	31.3	27.2	50.0	31.6	0.0	48.5	35.6	0.0	50.7	41.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	1.4	0.6	2.6	2.3	0.1	4.4	0.5	0.1	1.2	2.0	
Delay (s)	52.2	32.7	27.7	52.5	33.9	0.1	52.8	36.0	0.1	51.9	43.0	
Level of Service	D	C	C	D	C	A	D	D	A	D	D	
Approach Delay (s)		34.3			33.6			36.6			44.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

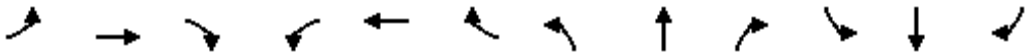
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	233	1027	272	217	1490	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	6.0	5.3	5.3	6.0	6.0
Lane Util. Factor	0.97	0.88	0.95	1.00	0.97	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	2787	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	3539	1583	3433	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	259	1141	302	241	1656	544
RTOR Reduction (vph)	0	78	0	207	0	0
Lane Group Flow (vph)	259	1063	302	34	1656	544
Turn Type		pm+ov		Perm	Prot	
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	14.4	86.6	16.8	16.8	72.2	94.3
Effective Green, g (s)	14.4	86.6	16.8	16.8	72.2	94.3
Actuated g/C Ratio	0.12	0.72	0.14	0.14	0.60	0.79
Clearance Time (s)	5.3	6.0	5.3	5.3	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	412	2011	495	222	2066	1464
v/s Ratio Prot	c0.08	0.32	c0.09		c0.48	0.29
v/s Ratio Perm		0.06		0.02		
v/c Ratio	0.63	0.53	0.61	0.15	0.80	0.37
Uniform Delay, d1	50.3	7.5	48.5	45.3	18.4	3.9
Progression Factor	0.94	2.85	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.2	2.2	0.3	3.4	0.2
Delay (s)	50.0	21.6	50.7	45.7	21.8	4.0
Level of Service	D	C	D	D	C	A
Approach Delay (s)	26.8		48.5			17.4
Approach LOS	C		D			B

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	1527	11	135	1040	84	63	95	123	53	140	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3535		3433	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3535		3433	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	159	1697	12	150	1156	93	70	106	137	59	156	182
RTOR Reduction (vph)	0	0	0	0	0	27	0	0	120	0	0	162
Lane Group Flow (vph)	159	1709	0	150	1156	66	70	106	17	59	156	20
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	9.9	68.9		10.5	69.5	69.5	8.1	15.3	15.3	7.4	13.5	13.5
Effective Green, g (s)	9.9	68.9		10.5	69.5	69.5	8.1	15.3	15.3	7.4	13.5	13.5
Actuated g/C Ratio	0.08	0.57		0.09	0.58	0.58	0.07	0.13	0.13	0.06	0.11	0.11
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.9		2.0	3.9	3.9	2.0	4.4	4.4	2.0	3.6	3.6
Lane Grp Cap (vph)	283	2030		300	2050	917	119	238	202	109	210	178
v/s Ratio Prot	0.05	c0.48		0.04	c0.33		c0.04	0.06		0.03	c0.08	
v/s Ratio Perm						0.04			0.01			0.01
v/c Ratio	0.56	0.84		0.50	0.56	0.07	0.59	0.45	0.09	0.54	0.74	0.12
Uniform Delay, d1	53.0	21.1		52.2	15.8	11.1	54.3	48.4	46.2	54.7	51.6	47.9
Progression Factor	1.21	0.32		1.03	1.34	1.87	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	2.9		0.4	0.4	0.0	4.7	2.2	0.3	2.9	13.7	0.4
Delay (s)	65.0	9.6		54.4	21.5	20.8	59.1	50.6	46.5	57.6	65.3	48.2
Level of Service	E	A		D	C	C	E	D	D	E	E	D
Approach Delay (s)		14.3			25.0			50.7			56.3	
Approach LOS		B			C			D			E	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

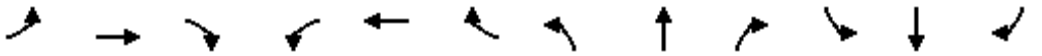


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1756	6	3	1269	8	4	0	28	46	2	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3			11.0			11.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.88			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.96	
Satd. Flow (prot)	1770	3537		1770	3536			1631			1740	
Flt Permitted	0.95	1.00		0.95	1.00			0.95			0.76	
Satd. Flow (perm)	1770	3537		1770	3536			1555			1371	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2	1951	7	3	1410	9	4	0	31	51	2	16
RTOR Reduction (vph)	0	0	0	0	0	0	0	29	0	0	9	0
Lane Group Flow (vph)	2	1958	0	3	1419	0	0	6	0	0	60	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			2	
Permitted Phases							2			2		
Actuated Green, G (s)	1.1	91.6		1.1	91.6			7.0			7.0	
Effective Green, g (s)	1.1	91.6		1.1	91.6			7.0			7.0	
Actuated g/C Ratio	0.01	0.76		0.01	0.76			0.06			0.06	
Clearance Time (s)	4.0	5.3		4.0	5.3			11.0			11.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.9			2.0			2.0	
Lane Grp Cap (vph)	16	2700		16	2699			91			80	
v/s Ratio Prot	0.00	c0.55		c0.00	0.40							
v/s Ratio Perm								0.00			c0.04	
v/c Ratio	0.12	0.73		0.19	0.53			0.06			0.74	
Uniform Delay, d1	59.0	7.5		59.0	5.6			53.4			55.6	
Progression Factor	1.02	0.63		0.90	0.58			1.00			1.00	
Incremental Delay, d2	0.8	1.1		1.9	0.2			0.1			27.5	
Delay (s)	61.1	5.9		54.8	3.5			53.5			83.2	
Level of Service	E	A		D	A			D			F	
Approach Delay (s)		5.9			3.6			53.5			83.2	
Approach LOS		A			A			D			F	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1844	9	161	1282	0	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0	5.3		6.0
Lane Util. Factor	0.91		0.97	0.95		1.00
Frt	1.00		1.00	1.00		0.86
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5082		3433	3539		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5082		3433	3539		1611
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2049	10	179	1424	0	272
RTOR Reduction (vph)	1	0	0	0	0	5
Lane Group Flow (vph)	2058	0	179	1424	0	267
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	34.1		12.6	60.0		12.6
Effective Green, g (s)	34.1		12.6	60.0		12.6
Actuated g/C Ratio	0.57		0.21	1.00		0.21
Clearance Time (s)	7.3		6.0	5.3		6.0
Vehicle Extension (s)	3.5		2.0	3.5		2.0
Lane Grp Cap (vph)	2888		721	3539		338
v/s Ratio Prot	c0.41		0.05	0.40		c0.17
v/s Ratio Perm						
v/c Ratio	0.71		0.25	0.40		0.79
Uniform Delay, d1	9.4		19.8	0.0		22.5
Progression Factor	1.57		1.10	1.00		1.00
Incremental Delay, d2	1.1		0.0	0.2		11.2
Delay (s)	15.9		21.8	0.2		33.6
Level of Service	B		C	A		C
Approach Delay (s)	15.9			2.6	33.6	
Approach LOS	B			A	C	

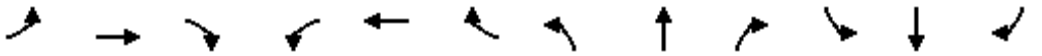
Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	173	777	1138	436	657	69	744	334	104	165	388	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	4.0	4.0	5.7		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3362	2787	3433	3489		3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3362	2787	3433	3489		3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	192	863	1264	484	730	77	827	371	116	183	431	79
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	82	0	0	69
Lane Group Flow (vph)	192	863	1264	484	800	0	827	371	34	183	431	10
Parking (#/hr)		0										
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free						2			6
Actuated Green, G (s)	14.0	34.6	120.0	20.4	40.6		31.4	35.6	35.6	10.8	15.0	15.0
Effective Green, g (s)	14.0	34.6	120.0	20.4	40.6		31.4	35.6	35.6	10.8	15.0	15.0
Actuated g/C Ratio	0.12	0.29	1.00	0.17	0.34		0.26	0.30	0.30	0.09	0.12	0.12
Clearance Time (s)	4.0	5.3		4.0	5.7		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.9		2.0	3.5		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	401	969	2787	584	1180		898	1050	470	309	636	198
v/s Ratio Prot	0.06	c0.26		c0.14	0.23		c0.24	0.10		0.05	c0.08	
v/s Ratio Perm			c0.45						0.02			0.01
v/c Ratio	0.48	0.89	0.45	0.83	0.68		0.92	0.35	0.07	0.59	0.68	0.05
Uniform Delay, d1	49.6	40.9	0.0	48.1	34.1		43.1	33.2	30.3	52.5	50.2	46.2
Progression Factor	0.81	0.79	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	7.6	0.4	9.0	3.1		14.3	0.3	0.1	2.0	3.1	0.1
Delay (s)	40.4	39.8	0.4	57.1	37.2		57.4	33.4	30.4	54.5	53.3	46.4
Level of Service	D	D	A	E	D		E	C	C	D	D	D
Approach Delay (s)		18.4			44.7			48.2			52.8	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM Average Control Delay	35.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

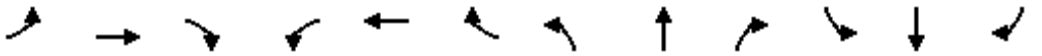


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	914	49	95	1164	4	10	16	257	9	2	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.96	1.00
Satd. Flow (prot)	1762	3618		1711	3538			1828	1583		1788	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00		0.96	1.00
Satd. Flow (perm)	1762	3618		1711	3538			1828	1583		1788	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	1016	54	106	1293	4	11	18	286	10	2	8
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	205	0	0	8
Lane Group Flow (vph)	6	1068	0	106	1297	0	0	29	81	0	12	0
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	1.2	80.1		12.3	92.9			5.7	18.0		2.5	2.5
Effective Green, g (s)	2.2	82.6		13.3	95.4			7.2	21.0		4.0	4.0
Actuated g/C Ratio	0.02	0.69		0.11	0.80			0.06	0.18		0.03	0.03
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	32	2490		190	2813			110	310		60	49
v/s Ratio Prot	0.00	0.30		c0.06	c0.37			c0.02	0.03		c0.01	
v/s Ratio Perm									0.02			0.00
v/c Ratio	0.19	0.43		0.56	0.46			0.26	0.26		0.20	0.01
Uniform Delay, d1	58.0	8.3		50.6	4.0			53.9	42.8		56.4	56.1
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	0.1		2.0	0.5			0.5	0.2		0.6	0.0
Delay (s)	59.1	8.4		52.6	4.5			54.3	42.9		57.0	56.1
Level of Service	E	A		D	A			D	D		E	E
Approach Delay (s)		8.7			8.2			44.0			56.7	
Approach LOS		A			A			D			E	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

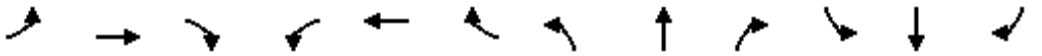
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1181	12	21	1223	37	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3534		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3534		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1312	13	23	1359	41	60
RTOR Reduction (vph)	0	0	0	0	0	56
Lane Group Flow (vph)	1325	0	23	1359	41	4
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	86.6		4.2	94.8	6.7	6.7
Effective Green, g (s)	88.6		6.2	96.8	8.7	8.7
Actuated g/C Ratio	0.74		0.05	0.81	0.07	0.07
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2631		92	2879	129	116
v/s Ratio Prot	c0.37		0.01	c0.38	c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.50		0.25	0.47	0.32	0.04
Uniform Delay, d1	6.2		54.2	3.4	52.3	51.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		0.5	0.6	1.0	0.1
Delay (s)	6.5		54.7	3.9	53.4	51.4
Level of Service	A		D	A	D	D
Approach Delay (s)	6.5			4.8	52.2	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	119.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	737	284	122	894	73	263	911	45	189	744	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3494		3433	3539	1551	3433	3539	1551
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3494		3433	3539	1551	3433	3539	1551
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	206	819	316	136	993	81	292	1012	50	210	827	149
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	25	0	0	92
Lane Group Flow (vph)	206	819	316	136	1069	0	292	1012	25	210	827	57
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	11.5	31.7	120.0	19.7	40.3		13.9	32.3	32.3	16.9	35.7	35.7
Effective Green, g (s)	12.5	33.2	120.0	20.7	41.8		14.9	33.8	33.3	17.9	37.2	36.7
Actuated g/C Ratio	0.10	0.28	1.00	0.17	0.35		0.12	0.28	0.28	0.15	0.31	0.31
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	358	979	1561	592	1217		426	997	430	512	1097	474
v/s Ratio Prot	0.06	c0.23		0.04	c0.31		0.09	c0.29		0.06	c0.23	
v/s Ratio Perm			0.20						0.02			0.04
v/c Ratio	0.58	0.84	0.20	0.23	0.88		0.69	1.02	0.06	0.41	0.75	0.12
Uniform Delay, d1	51.2	40.8	0.0	42.8	36.7		50.3	43.1	31.8	46.3	37.3	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.94	1.15	1.47	1.00	1.00	1.00
Incremental Delay, d2	1.4	6.5	0.3	0.1	7.7		3.0	29.6	0.2	0.2	3.2	0.2
Delay (s)	52.6	47.3	0.3	42.9	44.4		50.1	79.0	47.0	46.5	40.5	30.2
Level of Service	D	D	A	D	D		D	E	D	D	D	C
Approach Delay (s)		37.0			44.2			71.6			40.2	
Approach LOS		D			D			E			D	

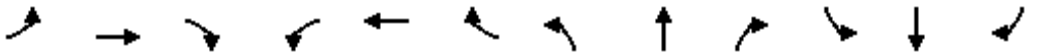
Intersection Summary			
HCM Average Control Delay	48.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	1071	10	12	1084	15	26	12	62	23	11	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3533		1770	3530			1801	1550		1801	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (perm)	1770	3533		1770	3530			1801	1550		1801	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	1190	11	13	1204	17	29	13	69	26	12	48
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	64	0	0	45
Lane Group Flow (vph)	26	1201	0	13	1221	0	0	42	5	0	38	3
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	23.7	85.8		2.6	64.7			8.3	8.3		6.0	6.0
Effective Green, g (s)	24.7	87.8		3.6	66.7			9.3	9.3		7.0	7.0
Actuated g/C Ratio	0.21	0.73		0.03	0.56			0.08	0.08		0.06	0.06
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	364	2585		53	1962			140	120		105	92
v/s Ratio Prot	0.01	c0.34		0.01	c0.35			c0.02			c0.02	
v/s Ratio Perm									0.00			0.00
v/c Ratio	0.07	0.46		0.25	0.62			0.30	0.04		0.36	0.03
Uniform Delay, d1	38.4	6.5		56.9	18.1			52.3	51.2		54.4	53.3
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.3		0.9	1.5			0.4	0.1		0.8	0.0
Delay (s)	38.4	6.8		57.8	19.6			52.7	51.3		55.1	53.3
Level of Service	D	A		E	B			D	D		E	D
Approach Delay (s)		7.5			20.0			51.8			54.1	
Approach LOS		A			B			D			D	

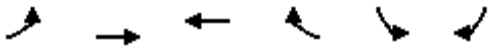
Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



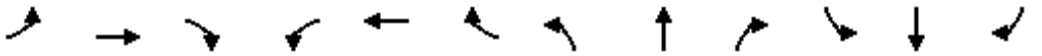
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1046	0	26	872	13	81	2	32	63	0	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.8		3.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3532			1731			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.71	1.00
Satd. Flow (perm)	1770	3539		1770	3532			1376			1330	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	40	1162	0	29	969	14	90	2	36	70	0	86
RTOR Reduction (vph)	0	0	0	0	1	0	0	12	0	0	0	66
Lane Group Flow (vph)	40	1162	0	29	982	0	0	116	0	0	70	20
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	3.6	26.6		2.1	25.1			11.2			11.2	11.2
Effective Green, g (s)	4.6	29.1		3.1	27.6			12.2			12.2	12.2
Actuated g/C Ratio	0.09	0.55		0.06	0.52			0.23			0.23	0.23
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	153	1936		103	1832			316			305	363
v/s Ratio Prot	c0.02	c0.33		0.02	0.28							
v/s Ratio Perm								c0.08			0.05	0.01
v/c Ratio	0.26	0.60		0.28	0.54			0.37			0.23	0.05
Uniform Delay, d1	22.7	8.1		24.0	8.5			17.2			16.7	16.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.3	0.6		0.5	0.3			0.5			0.3	0.0
Delay (s)	23.0	8.7		24.5	8.9			17.8			17.0	16.0
Level of Service	C	A		C	A			B			B	B
Approach Delay (s)		9.2			9.3			17.8			16.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	53.2	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	485	444	736	225	123	356
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	0.99	1.00		0.95	1.00
Satd. Flow (prot)	1610	3341	3415		3433	1583
Flt Permitted	0.95	0.99	1.00		0.95	1.00
Satd. Flow (perm)	1610	3341	3415		3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	539	493	818	250	137	396
RTOR Reduction (vph)	0	0	25	0	0	15
Lane Group Flow (vph)	334	698	1043	0	137	381
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	27.0	27.0	28.8		9.5	36.5
Effective Green, g (s)	29.5	29.5	31.3		10.5	41.5
Actuated g/C Ratio	0.38	0.38	0.40		0.13	0.53
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	604	1254	1360		459	892
v/s Ratio Prot	0.21	c0.21	c0.31		0.04	c0.16
v/s Ratio Perm						0.08
v/c Ratio	0.55	0.56	0.77		0.30	0.43
Uniform Delay, d1	19.4	19.4	20.5		30.7	11.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.7	2.4		0.1	0.5
Delay (s)	20.9	20.1	22.9		30.9	11.8
Level of Service	C	C	C		C	B
Approach Delay (s)		20.4	22.9		16.7	
Approach LOS		C	C		B	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	4.3
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	444	33	17	850	16	75	12	15	16	13	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3	4.3	3.0	3.3			3.0			3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96			0.97	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3529			1549			1812	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.79			0.85	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3529			1261			1591	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	493	37	19	944	18	83	13	17	18	14	220
RTOR Reduction (vph)	0	0	11	0	1	0	0	6	0	0	0	171
Lane Group Flow (vph)	44	493	26	19	961	0	0	107	0	0	32	49
Parking (#/hr)								4				
Turn Type	Prot		Perm	Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases			2				4			4		4
Actuated Green, G (s)	3.6	29.3	29.3	0.9	26.6			11.3			11.3	11.3
Effective Green, g (s)	4.6	31.3	30.3	1.9	28.6			12.3			12.3	12.3
Actuated g/C Ratio	0.08	0.57	0.55	0.03	0.52			0.22			0.22	0.22
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3			2.0			2.0	2.0
Lane Grp Cap (vph)	149	1064	875	61	1842			283			357	355
v/s Ratio Prot	c0.02	c0.26		0.01	c0.27							
v/s Ratio Perm			0.02					c0.08			0.02	0.03
v/c Ratio	0.30	0.46	0.03	0.31	0.52			0.38			0.09	0.14
Uniform Delay, d1	23.6	6.9	5.6	25.8	8.6			18.0			16.8	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.4	0.5	0.0	1.1	0.4			0.3			0.0	0.1
Delay (s)	24.0	7.4	5.6	26.9	9.0			18.3			16.9	17.1
Level of Service	C	A	A	C	A			B			B	B
Approach Delay (s)		8.5			9.3			18.3			17.0	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	12.6
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

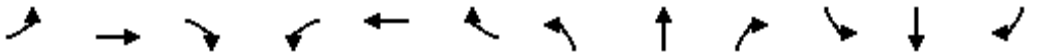
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	240	372	488	338	308	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	3.0	2.8	2.5	3.0	2.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	267	413	542	376	342	221
RTOR Reduction (vph)	0	57	0	95	0	0
Lane Group Flow (vph)	267	356	542	281	342	221
Turn Type		pm+ov		pm+ov	Prot	
Protected Phases	8	5	6	8	5	2
Permitted Phases		8		6		
Actuated Green, G (s)	17.0	37.0	28.5	45.5	20.0	52.5
Effective Green, g (s)	18.5	39.0	31.0	48.5	21.0	55.0
Actuated g/C Ratio	0.23	0.49	0.39	0.62	0.27	0.70
Clearance Time (s)	4.0	4.0	5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0	2.0	4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	416	844	733	974	472	1300
v/s Ratio Prot	c0.15	0.11	c0.29	0.07	c0.19	0.12
v/s Ratio Perm		0.11		0.11		
v/c Ratio	0.64	0.42	0.74	0.29	0.72	0.17
Uniform Delay, d1	27.2	12.7	20.4	7.1	26.3	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.1	4.3	0.1	4.6	0.1
Delay (s)	29.7	12.8	24.8	7.1	30.9	4.2
Level of Service	C	B	C	A	C	A
Approach Delay (s)	19.5		17.6			20.4
Approach LOS	B		B			C

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	8.3
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

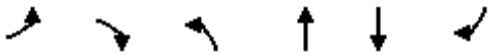
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	408	6	4	391	5	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	453	7	4	434	6	30
RTOR Reduction (vph)	0	3	0	0	0	27
Lane Group Flow (vph)	453	4	4	434	6	3
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	24.0	24.0	0.6	30.3	3.8	3.8
Effective Green, g (s)	27.4	27.4	1.6	33.7	4.8	4.8
Actuated g/C Ratio	0.63	0.63	0.04	0.77	0.11	0.11
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2214	990	65	2723	194	173
v/s Ratio Prot	c0.13		0.00	c0.12	c0.00	
v/s Ratio Perm		0.00				0.00
v/c Ratio	0.20	0.00	0.06	0.16	0.03	0.02
Uniform Delay, d1	3.5	3.1	20.4	1.3	17.4	17.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.1	0.0	0.0	0.0
Delay (s)	3.6	3.1	20.5	1.4	17.4	17.4
Level of Service	A	A	C	A	B	B
Approach Delay (s)	3.6			1.5	17.4	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	3.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	43.8	Sum of lost time (s)	7.6
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



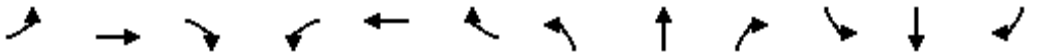
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	244	2	0	256	2	0	199	0	2	116	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0	6.0		5.0	5.0		4.0		3.0	4.0	3.0
Lane Util. Factor	1.00	0.95	1.00		0.95	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85		1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3185	1425		3185	1425		1676		1593	1676	1425
Flt Permitted	0.95	1.00	1.00		1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (perm)	1593	3185	1425		3185	1425		1676		1593	1676	1425
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	271	2	0	284	2	0	221	0	2	129	39
RTOR Reduction (vph)	0	0	1	0	0	1	0	0	0	0	0	23
Lane Group Flow (vph)	32	271	1	0	284	1	0	221	0	2	129	16
Turn Type	Prot		Perm	Perm		Perm	Perm			Prot		Perm
Protected Phases	5	2			6			8		7	4	
Permitted Phases			2	6		6	8					4
Actuated Green, G (s)	0.8	18.2	18.2		13.4	13.4		12.4		1.0	17.4	17.4
Effective Green, g (s)	1.8	19.2	18.2		14.4	14.4		12.4		2.0	17.4	18.4
Actuated g/C Ratio	0.04	0.42	0.40		0.32	0.32		0.27		0.04	0.38	0.40
Clearance Time (s)	4.0	6.0	6.0		6.0	6.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.7	4.7		4.7	4.7		2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	63	1341	569		1006	450		456		70	640	575
v/s Ratio Prot	c0.02	0.09			c0.09			c0.13		0.00	c0.08	
v/s Ratio Perm			0.00			0.00						0.01
v/c Ratio	0.51	0.20	0.00		0.28	0.00		0.48		0.03	0.20	0.03
Uniform Delay, d1	21.5	8.4	8.2		11.7	10.7		13.9		20.9	9.4	8.2
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	2.3	0.1	0.0		0.3	0.0		0.3		0.1	0.1	0.0
Delay (s)	23.8	8.5	8.2		12.0	10.7		14.2		20.9	9.5	8.2
Level of Service	C	A	A		B	B		B		C	A	A
Approach Delay (s)		10.1			12.0			14.2			9.3	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	45.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



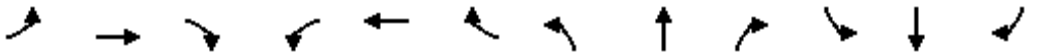
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	91	153	56	703	1069	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	101	170	62	781	1188	50
RTOR Reduction (vph)	0	138	0	0	0	20
Lane Group Flow (vph)	101	32	62	781	1188	30
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	11.2	11.2	4.4	44.6	36.2	36.2
Effective Green, g (s)	12.2	12.2	5.4	48.0	39.6	39.6
Actuated g/C Ratio	0.19	0.19	0.08	0.73	0.60	0.60
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	328	294	145	2582	2130	953
v/s Ratio Prot	c0.06		c0.04	0.22	c0.34	
v/s Ratio Perm		0.02				0.02
v/c Ratio	0.31	0.11	0.43	0.30	0.56	0.03
Uniform Delay, d1	23.2	22.3	28.7	3.1	7.9	5.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.7	0.1	0.5	0.0
Delay (s)	23.3	22.3	29.5	3.2	8.4	5.3
Level of Service	C	C	C	A	A	A
Approach Delay (s)	22.7			5.1	8.2	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	8.6
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



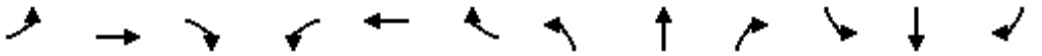
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	42	83	44	10	24	65	448	21	36	1116	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9		3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583		1790	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583		1790	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	47	92	49	11	27	72	498	23	40	1240	53
RTOR Reduction (vph)	0	0	81	0	0	24	0	0	11	0	0	21
Lane Group Flow (vph)	51	47	11	0	60	3	72	498	12	40	1240	32
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	8.5	8.5	8.5		6.4	6.4	6.6	38.3	38.3	4.6	36.3	36.3
Effective Green, g (s)	10.1	10.1	9.5		8.0	8.0	7.6	41.7	41.7	5.6	39.7	39.7
Actuated g/C Ratio	0.13	0.13	0.12		0.10	0.10	0.10	0.53	0.53	0.07	0.51	0.51
Clearance Time (s)	4.9	4.9	4.9		5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1		2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	229	241	193		184	162	172	1892	846	127	1801	806
v/s Ratio Prot	c0.03	0.03			c0.03		c0.04	0.14		0.02	c0.35	
v/s Ratio Perm			0.01			0.00			0.01			0.02
v/c Ratio	0.22	0.20	0.06		0.33	0.02	0.42	0.26	0.01	0.31	0.69	0.04
Uniform Delay, d1	30.4	30.3	30.3		32.5	31.5	33.1	9.8	8.5	34.4	14.5	9.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.4	0.1		0.4	0.0	0.6	0.1	0.0	0.5	1.4	0.0
Delay (s)	30.9	30.7	30.4		32.9	31.5	33.7	10.0	8.5	34.9	15.9	9.6
Level of Service	C	C	C		C	C	C	A	A	C	B	A
Approach Delay (s)		30.6			32.4			12.8			16.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	78.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



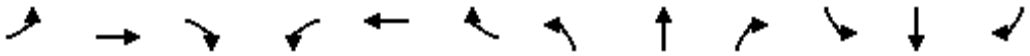
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	2	76	21	7	23	43	240	7	9	295	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4	3.4	3.0	3.4	3.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1777	1583		1796	1583	1770	1863	1583	1770	1863	1583
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1777	1583		1796	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	66	2	84	23	8	26	48	267	8	10	328	99
RTOR Reduction (vph)	0	0	70	0	0	23	0	0	4	0	0	33
Lane Group Flow (vph)	0	68	14	0	31	3	48	267	4	10	328	66
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)		8.4	8.4		4.4	4.4	3.4	24.2	24.2	0.8	21.6	21.6
Effective Green, g (s)		9.4	9.4		5.4	5.4	4.4	26.5	26.5	1.8	23.9	23.9
Actuated g/C Ratio		0.17	0.17		0.10	0.10	0.08	0.48	0.48	0.03	0.43	0.43
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8	3.8	2.0	3.8	3.8
Lane Grp Cap (vph)		301	268		175	154	140	890	756	57	802	682
v/s Ratio Prot		c0.04			c0.02		c0.03	c0.14		0.01	c0.18	
v/s Ratio Perm			0.01			0.00			0.00			0.04
v/c Ratio		0.23	0.05		0.18	0.02	0.34	0.30	0.01	0.18	0.41	0.10
Uniform Delay, d1		19.9	19.3		23.0	22.6	24.2	8.8	7.6	26.1	10.9	9.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.0		0.2	0.0	0.5	0.2	0.0	0.5	0.4	0.1
Delay (s)		20.0	19.3		23.2	22.7	24.7	9.1	7.6	26.7	11.4	9.5
Level of Service		C	B		C	C	C	A	A	C	B	A
Approach Delay (s)		19.7			22.9			11.4			11.3	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	15.8
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



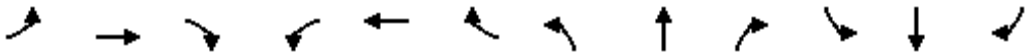
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	29	95	37	4	28	26	260	18	4	439	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.94		1.00	0.99		1.00	0.99	
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1801	1583		1714		1770	1845		1770	1842	
Flt Permitted		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1801	1583		1714		1770	1845		1770	1842	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	69	32	106	41	4	31	29	289	20	4	488	39
RTOR Reduction (vph)	0	0	93	0	29	0	0	2	0	0	3	0
Lane Group Flow (vph)	0	101	13	0	47	0	29	307	0	4	524	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		7.4	7.4		4.6		2.0	30.5		0.8	29.3	
Effective Green, g (s)		7.4	7.4		4.6		2.0	30.5		0.8	29.3	
Actuated g/C Ratio		0.12	0.12		0.08		0.03	0.50		0.01	0.48	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		218	192		129		58	923		23	885	
v/s Ratio Prot		c0.06			c0.03		c0.02	0.17		0.00	c0.28	
v/s Ratio Perm			0.01									
v/c Ratio		0.46	0.07		0.37		0.50	0.33		0.17	0.59	
Uniform Delay, d1		25.0	23.7		26.8		29.0	9.1		29.8	11.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.1		0.6		2.5	0.3		1.3	1.1	
Delay (s)		25.5	23.8		27.5		31.5	9.4		31.1	12.6	
Level of Service		C	C		C		C	A		C	B	
Approach Delay (s)		24.6			27.5			11.3			12.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	8	151	17	15	14	84	316	13	5	628	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1583		1815	1583	1770	1852		1770	1851	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1797	1583		1815	1583	1770	1852		1770	1851	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	9	168	19	17	16	93	351	14	6	698	30
RTOR Reduction (vph)	0	0	147	0	0	15	0	1	0	0	1	0
Lane Group Flow (vph)	0	33	21	0	36	1	93	364	0	6	727	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		9.6	9.6		6.7	6.7	7.3	48.1		0.9	41.7	
Effective Green, g (s)		10.6	10.6		7.7	7.7	8.3	50.8		1.9	44.4	
Actuated g/C Ratio		0.13	0.13		0.09	0.09	0.10	0.61		0.02	0.53	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		229	202		168	147	177	1134		41	990	
v/s Ratio Prot		c0.02			c0.02		c0.05	0.20		0.00	c0.39	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.14	0.11		0.21	0.01	0.53	0.32		0.15	0.73	
Uniform Delay, d1		32.2	32.0		34.8	34.2	35.5	7.8		39.8	14.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.2		0.6	0.0	1.3	0.2		0.6	3.0	
Delay (s)		32.5	32.2		35.5	34.2	36.8	8.0		40.4	17.8	
Level of Service		C	C		D	C	D	A		D	B	
Approach Delay (s)		32.3			35.1			13.8			18.0	
Approach LOS		C			D			B			B	

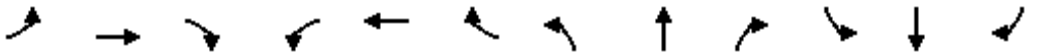
Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	83.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	34	36	150	73	76	64	452	17	97	568	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.97	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1538	1770	1863	1583	1770	3513		1770	3476	
Flt Permitted		0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799	1538	1770	1863	1583	1770	3513		1770	3476	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	94	38	40	167	81	84	71	502	19	108	631	62
RTOR Reduction (vph)	0	0	33	0	0	68	0	2	0	0	6	0
Lane Group Flow (vph)	0	132	7	167	81	17	71	519	0	108	687	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		11.9	11.9	13.3	13.3	13.3	6.0	21.2		7.4	22.6	
Effective Green, g (s)		12.9	12.9	14.3	14.3	14.3	8.0	23.2		9.4	24.6	
Actuated g/C Ratio		0.18	0.18	0.20	0.20	0.20	0.11	0.32		0.13	0.34	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		319	273	348	366	311	195	1120		229	1175	
v/s Ratio Prot		c0.07		c0.09	0.04		0.04	0.15		c0.06	c0.20	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.41	0.03	0.48	0.22	0.05	0.36	0.46		0.47	0.58	
Uniform Delay, d1		26.6	24.8	26.0	24.6	23.8	30.0	19.8		29.4	19.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.0	0.8	0.2	0.1	0.4	0.4		0.6	0.9	
Delay (s)		27.2	24.8	26.7	24.8	23.8	30.5	20.2		30.0	20.7	
Level of Service		C	C	C	C	C	C	C		C	C	
Approach Delay (s)		26.7			25.5			21.4			22.0	
Approach LOS		C			C			C			C	

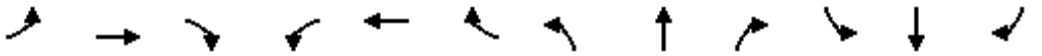
Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	9.3
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



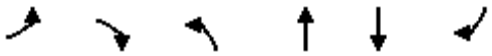
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	0	129	40	0	73	118	472	33	56	523	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3504		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3504		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	106	0	143	44	0	81	131	524	37	62	581	71
RTOR Reduction (vph)	0	0	120	0	0	72	0	4	0	0	0	47
Lane Group Flow (vph)	106	0	23	44	0	9	131	557	0	62	581	24
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	10.6		10.6	6.6		6.6	7.8	25.7		4.4	22.3	22.3
Effective Green, g (s)	10.6		10.6	7.6		7.6	7.8	26.7		5.4	23.3	22.3
Actuated g/C Ratio	0.16		0.16	0.12		0.12	0.12	0.41		0.08	0.36	0.34
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	289		258	207		185	212	1439		147	1269	543
v/s Ratio Prot	c0.06			c0.02			c0.07	c0.16		0.04	c0.16	
v/s Ratio Perm			0.01			0.01						0.02
v/c Ratio	0.37		0.09	0.21		0.05	0.62	0.39		0.42	0.46	0.04
Uniform Delay, d1	24.2		23.1	26.0		25.5	27.2	13.4		28.3	16.0	14.2
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3		0.1	0.2		0.0	3.7	0.3		0.7	0.5	0.1
Delay (s)	24.5		23.2	26.2		25.5	30.9	13.7		29.0	16.5	14.3
Level of Service	C		C	C		C	C	B		C	B	B
Approach Delay (s)		23.7			25.8			17.0			17.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



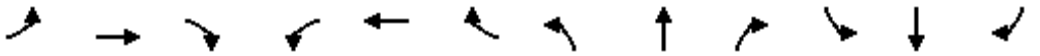
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	3	6	59	0	2	140	510	12	17	778	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1735	1583		1770	1583	1770	5085	1583	1770	3539	1583
Flt Permitted	0.95	0.98	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1735	1583		1770	1583	1770	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	3	7	66	0	2	156	567	13	19	864	230
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	115
Lane Group Flow (vph)	5	5	7	0	66	2	156	567	13	19	864	115
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	4.0	4.0	76.6		7.9	76.6	11.8	44.4	76.6	2.3	34.9	34.9
Effective Green, g (s)	5.0	5.0	76.6		8.9	76.6	12.8	47.8	76.6	3.3	38.3	38.3
Actuated g/C Ratio	0.07	0.07	1.00		0.12	1.00	0.17	0.62	1.00	0.04	0.50	0.50
Clearance Time (s)	4.0	4.0			4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5			3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	110	113	1583		206	1583	296	3173	1583	76	1770	792
v/s Ratio Prot	c0.00	0.00			c0.04		c0.09	0.11		0.01	c0.24	
v/s Ratio Perm			0.00			0.00			0.01			0.07
v/c Ratio	0.05	0.04	0.00		0.32	0.00	0.53	0.18	0.01	0.25	0.49	0.15
Uniform Delay, d1	33.6	33.6	0.0		31.1	0.0	29.1	6.1	0.0	35.5	12.7	10.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0		0.9	0.0	0.8	0.0	0.0	1.7	0.4	0.2
Delay (s)	33.7	33.7	0.0		32.0	0.0	29.9	6.1	0.0	37.2	13.0	10.5
Level of Service	C	C	A		C	A	C	A	A	D	B	B
Approach Delay (s)		19.8			31.0			11.1			12.9	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	11.6
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



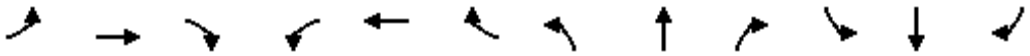
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	70	417	393	514	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	0.6	0.6	
Lane Util. Factor		1.00	1.00	0.95	0.95	
Frt		0.85	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1583	1770	3539	3539	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1583	1770	3539	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	78	463	437	571	0
RTOR Reduction (vph)	0	70	0	0	0	0
Lane Group Flow (vph)	0	8	463	437	571	0
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)		2.8	12.4	28.0	11.6	
Effective Green, g (s)		3.8	13.4	31.4	15.0	
Actuated g/C Ratio		0.10	0.35	0.81	0.39	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		155	611	2864	1368	
v/s Ratio Prot			c0.26	0.12	c0.16	
v/s Ratio Perm		c0.00				
v/c Ratio		0.05	0.76	0.15	0.42	
Uniform Delay, d1		15.9	11.3	0.8	8.7	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	5.4	0.0	0.2	
Delay (s)		16.0	16.6	0.8	8.9	
Level of Service		B	B	A	A	
Approach Delay (s)	16.0			9.0	8.9	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	38.8	Sum of lost time (s)	6.6
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	8	52	6	1	0	5	752	42	48	501	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0		3.0	2.6	2.6	3.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.91	
Frt		1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1798	1583	1681	1706		1770	3539	1583	1770	5081	
Flt Permitted		0.97	1.00	0.95	0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1798	1583	1681	1706		1770	3539	1583	1770	5081	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	9	58	7	1	0	6	836	47	53	557	3
RTOR Reduction (vph)	0	0	50	0	0	0	0	0	22	0	0	0
Lane Group Flow (vph)	0	32	8	4	4	0	6	836	25	53	560	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			
Actuated Green, G (s)		7.6	7.6	2.5	2.5		0.8	30.5	30.5	4.1	33.8	
Effective Green, g (s)		8.6	8.6	3.5	3.5		1.8	33.9	33.9	5.1	37.2	
Actuated g/C Ratio		0.14	0.14	0.06	0.06		0.03	0.54	0.54	0.08	0.59	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2		2.0	3.9	3.9	2.0	3.9	
Lane Grp Cap (vph)		247	217	94	95		51	1913	856	144	3015	
v/s Ratio Prot		c0.02		c0.00	0.00		0.00	c0.24		c0.03	0.11	
v/s Ratio Perm			0.01						0.02			
v/c Ratio		0.13	0.04	0.04	0.04		0.12	0.44	0.03	0.37	0.19	
Uniform Delay, d1		23.8	23.5	28.0	28.0		29.7	8.7	6.7	27.3	5.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.0	0.1	0.1		0.4	0.2	0.0	0.6	0.0	
Delay (s)		23.8	23.5	28.1	28.1		30.1	8.9	6.7	27.9	5.9	
Level of Service		C	C	C	C		C	A	A	C	A	
Approach Delay (s)		23.6			28.1			8.9			7.8	
Approach LOS		C			C			A			A	

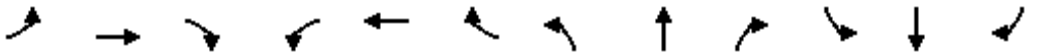
Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	11.6
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	7	152	83	8	47	81	929	19	5	907	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780	1547		1782	1583	1770	5066		1770	5061	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1780	1547		1782	1583	1770	5066		1770	5061	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	103	8	169	92	9	52	90	1032	21	6	1008	26
RTOR Reduction (vph)	0	0	140	0	0	45	0	1	0	0	2	0
Lane Group Flow (vph)	0	111	29	0	101	7	90	1052	0	6	1032	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		10.2	10.2		7.0	7.0	6.7	35.7		0.8	29.8	
Effective Green, g (s)		12.5	12.5		9.3	9.3	7.7	38.7		1.8	32.8	
Actuated g/C Ratio		0.17	0.17		0.13	0.13	0.11	0.53		0.02	0.45	
Clearance Time (s)		5.3	5.3		4.0	4.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		305	265		227	202	187	2686		44	2274	
v/s Ratio Prot		c0.06			c0.06		c0.05	0.21		0.00	c0.20	
v/s Ratio Perm			0.02			0.00						
v/c Ratio		0.36	0.11		0.44	0.03	0.48	0.39		0.14	0.45	
Uniform Delay, d1		26.7	25.5		29.5	27.9	30.8	10.2		34.8	13.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.1		0.5	0.0	0.7	0.2		0.5	0.3	
Delay (s)		27.0	25.6		30.0	27.9	31.5	10.4		35.4	14.2	
Level of Service		C	C		C	C	C	B		D	B	
Approach Delay (s)		26.2			29.3			12.0			14.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

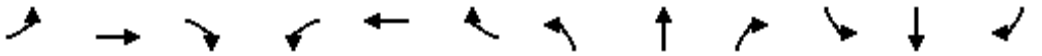
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	174	319	155	134	103	123	43	803	97	129	779	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1535	1770	3539	1534	1770	5085	1560	1770	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1535	1770	3539	1534	1770	5085	1560	1770	5085	1560
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	193	354	172	149	114	137	48	892	108	143	866	196
RTOR Reduction (vph)	0	0	142	0	0	116	0	0	0	0	0	0
Lane Group Flow (vph)	193	354	30	149	114	21	48	892	108	143	866	196
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	17.5	18.0	18.0	14.6	15.1	15.1	6.9	54.0	120.0	14.0	60.8	120.0
Effective Green, g (s)	18.5	21.0	21.0	15.6	18.1	18.1	7.9	57.0	120.0	15.0	63.8	120.0
Actuated g/C Ratio	0.15	0.18	0.18	0.13	0.15	0.15	0.07	0.48	1.00	0.12	0.53	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	273	619	269	230	534	231	117	2415	1560	221	2704	1560
v/s Ratio Prot	c0.11	c0.10		0.08	0.03		0.03	c0.18		c0.08	0.17	
v/s Ratio Perm			0.02			0.01			0.07			c0.13
v/c Ratio	0.71	0.57	0.11	0.65	0.21	0.09	0.41	0.37	0.07	0.65	0.32	0.13
Uniform Delay, d1	48.2	45.4	41.7	49.6	44.7	43.9	53.8	20.1	0.0	50.0	15.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	1.4	0.2	4.6	0.2	0.2	0.9	0.2	0.1	4.8	0.3	0.2
Delay (s)	54.8	46.8	41.9	54.2	44.9	44.1	54.7	20.2	0.1	54.8	16.2	0.2
Level of Service	D	D	D	D	D	D	D	C	A	D	B	A
Approach Delay (s)		47.8			48.1			19.7			18.2	
Approach LOS		D			D			B			B	

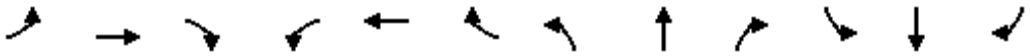
Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	1	33	33	1	18	18	928	10	5	1080	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0	4.7	3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.91	
Frt		0.93			0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1696			1721		1770	3539	1583	1770	5080	
Flt Permitted		0.84			0.73		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1461			1305		1770	3539	1583	1770	5080	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	1	37	37	1	20	20	1031	11	6	1200	9
RTOR Reduction (vph)	0	34	0	0	17	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	40	0	0	41	0	20	1031	9	6	1209	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		9.4			9.4		7.4	95.7	95.7	1.2	89.5	
Effective Green, g (s)		10.4			10.4		8.4	98.4	96.7	2.2	92.2	
Actuated g/C Ratio		0.09			0.09		0.07	0.82	0.81	0.02	0.77	
Clearance Time (s)		4.0			4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8	3.8	2.0	3.8	
Lane Grp Cap (vph)		127			113		124	2902	1276	32	3903	
v/s Ratio Prot							0.01	c0.29		0.00	c0.24	
v/s Ratio Perm		0.03			c0.03				0.01			
v/c Ratio		0.32			0.36		0.16	0.36	0.01	0.19	0.31	
Uniform Delay, d1		51.5			51.7		52.5	2.7	2.3	58.0	4.2	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.4			2.0		0.2	0.3	0.0	1.0	0.1	
Delay (s)		52.9			53.6		52.7	3.1	2.3	59.1	4.3	
Level of Service		D			D		D	A	A	E	A	
Approach Delay (s)		52.9			53.6			4.0			4.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	84	130	108	59	38	78	984	48	96	1549	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	1863	1562	1770	5085	1562	1770	5074	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	1863	1562	1770	5085	1562	1770	5074	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	83	93	144	120	66	42	87	1093	53	107	1721	23
RTOR Reduction (vph)	0	0	126	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	83	93	18	120	66	42	87	1093	53	107	1743	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	8.9	12.0	12.0	8.6	11.7	120.0	10.2	68.2	120.0	11.5	69.5	
Effective Green, g (s)	9.9	15.0	15.0	9.6	14.7	120.0	11.2	71.2	120.0	12.5	72.5	
Actuated g/C Ratio	0.08	0.12	0.12	0.08	0.12	1.00	0.09	0.59	1.00	0.10	0.60	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	146	442	193	275	228	1562	165	3017	1562	184	3066	
v/s Ratio Prot	c0.05	0.03		0.03	c0.04		0.05	0.21		c0.06	c0.34	
v/s Ratio Perm			0.01			0.03			c0.03			
v/c Ratio	0.57	0.21	0.09	0.44	0.29	0.03	0.53	0.36	0.03	0.58	0.57	
Uniform Delay, d1	53.0	47.2	46.5	52.6	47.9	0.0	51.9	12.6	0.0	51.3	14.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.0	0.3	0.3	0.4	0.9	0.0	1.4	0.1	0.0	3.0	0.8	
Delay (s)	56.0	47.5	46.8	53.0	48.8	0.0	53.3	12.7	0.0	54.3	15.1	
Level of Service	E	D	D	D	D	A	D	B	A	D	B	
Approach Delay (s)		49.4			42.0			15.0			17.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

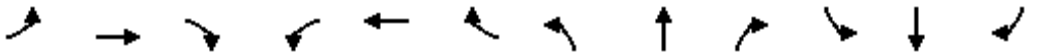
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	245	103	1110	203	88	1743
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	3.0	2.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	272	114	1233	226	98	1937
RTOR Reduction (vph)	0	0	0	40	0	0
Lane Group Flow (vph)	272	114	1233	186	98	1937
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	22.2	92.6	44.0	44.0	10.4	60.4
Effective Green, g (s)	23.2	92.6	46.0	46.0	11.4	62.4
Actuated g/C Ratio	0.25	1.00	0.50	0.50	0.12	0.67
Clearance Time (s)	6.0		6.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	443	1583	1758	786	218	2385
v/s Ratio Prot	c0.15		0.35		0.06	c0.55
v/s Ratio Perm		0.07		0.12		
v/c Ratio	0.61	0.07	0.70	0.24	0.45	0.81
Uniform Delay, d1	30.7	0.0	18.0	13.3	37.7	10.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.1	1.3	0.2	0.5	2.3
Delay (s)	33.3	0.1	19.3	13.5	38.2	13.1
Level of Service	C	A	B	B	D	B
Approach Delay (s)	23.5		18.4			14.3
Approach LOS	C		B			B

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	92.6	Sum of lost time (s)	7.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	76	24	299	147	1	394
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	27	332	163	1	438
RTOR Reduction (vph)	0	21	0	69	0	0
Lane Group Flow (vph)	84	6	332	94	1	438
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.0	9.0	25.4	25.4	0.8	30.2
Effective Green, g (s)	10.5	10.5	28.4	28.4	1.8	33.2
Actuated g/C Ratio	0.21	0.21	0.58	0.58	0.04	0.67
Clearance Time (s)	4.0	4.0	6.0	6.0	4.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	378	338	2043	914	65	1257
v/s Ratio Prot	c0.05		0.09		0.00	c0.24
v/s Ratio Perm		0.00		0.06		
v/c Ratio	0.22	0.02	0.16	0.10	0.02	0.35
Uniform Delay, d1	16.0	15.3	4.9	4.7	22.8	3.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.1	0.1	0.0	0.3
Delay (s)	16.3	15.3	4.9	4.8	22.9	3.7
Level of Service	B	B	A	A	C	A
Approach Delay (s)	16.0		4.9			3.8
Approach LOS	B		A			A

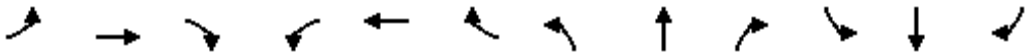
Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	5.5
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	5	14	68	0	145	4	564	31	146	565	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	2.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.93			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.99			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1703			1770	1558	1770	3507		1770	1863	1540
Flt Permitted		0.95			0.74	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1633			1375	1558	1770	3507		1770	1863	1540
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	6	16	76	0	161	4	627	34	162	628	29
RTOR Reduction (vph)	0	12	0	0	0	124	0	5	0	0	0	9
Lane Group Flow (vph)	0	17	0	0	76	37	4	656	0	162	628	20
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		Perm
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						6
Actuated Green, G (s)		11.1			11.1	11.1	0.9	19.7		7.9	26.7	26.7
Effective Green, g (s)		12.1			12.1	12.1	1.9	22.7		8.9	29.7	29.7
Actuated g/C Ratio		0.23			0.23	0.23	0.04	0.43		0.17	0.57	0.57
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)		377			318	360	64	1519		301	1056	873
v/s Ratio Prot							0.00	0.19		c0.09	c0.34	
v/s Ratio Perm		0.01			c0.06	0.02						0.01
v/c Ratio		0.04			0.24	0.10	0.06	0.43		0.54	0.59	0.02
Uniform Delay, d1		15.7			16.4	15.9	24.4	10.4		19.9	7.4	5.0
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.0			0.1	0.0	0.1	0.3		0.9	1.2	0.0
Delay (s)		15.7			16.5	15.9	24.5	10.7		20.8	8.6	5.0
Level of Service		B			B	B	C	B		C	A	A
Approach Delay (s)		15.7			16.1			10.8			10.9	
Approach LOS		B			B			B			B	

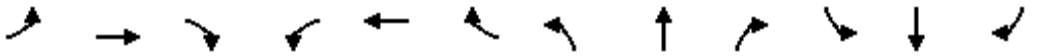
Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	1	58	18	1	13	30	534	46	20	622	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1775	1531		1778	1478	1770	3539	1544	1770	3518	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1775	1531		1778	1478	1770	3539	1544	1770	3518	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	71	1	64	20	1	14	33	593	51	22	691	24
RTOR Reduction (vph)	0	0	58	0	0	13	0	0	16	0	2	0
Lane Group Flow (vph)	0	72	6	0	21	1	33	593	35	22	713	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		8.0	8.0		3.8	3.8	8.2	57.8	57.8	2.7	52.3	
Effective Green, g (s)		9.0	9.0		4.8	4.8	9.2	60.8	58.8	3.7	55.3	
Actuated g/C Ratio		0.10	0.10		0.05	0.05	0.10	0.68	0.65	0.04	0.61	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		178	153		95	79	181	2391	1009	73	2162	
v/s Ratio Prot		c0.04			c0.01		0.02	c0.17		0.01	c0.20	
v/s Ratio Perm			0.00			0.00			0.02			
v/c Ratio		0.40	0.04		0.22	0.01	0.18	0.25	0.04	0.30	0.33	
Uniform Delay, d1		38.0	36.6		40.8	40.3	37.0	5.7	5.5	41.9	8.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.0		0.4	0.0	0.2	0.1	0.0	0.8	0.4	
Delay (s)		38.5	36.6		41.2	40.4	37.1	5.8	5.6	42.7	8.8	
Level of Service		D	D		D	D	D	A	A	D	A	
Approach Delay (s)		37.6			40.9			7.3			9.8	
Approach LOS		D			D			A			A	

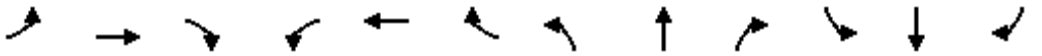
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	0	543	3	3	1	153	400	0	2	604	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	230	0	603	3	3	1	170	444	0	2	671	130
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	55
Lane Group Flow (vph)	115	115	603	3	3	0	170	444	0	2	671	75
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	11.6	11.6	90.0	4.2	4.2		8.8	55.1		1.4	49.7	49.7
Effective Green, g (s)	13.6	13.6	90.0	6.2	6.2		10.8	57.1		3.4	51.7	51.7
Actuated g/C Ratio	0.15	0.15	1.00	0.07	0.07		0.12	0.63		0.04	0.57	0.57
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.9		2.0	4.3	4.3
Lane Grp Cap (vph)	254	254	1478	122	124		412	2245		67	2033	849
v/s Ratio Prot	0.07	0.07		0.00	0.00		c0.05	0.13		0.00	0.19	
v/s Ratio Perm			c0.41									0.05
v/c Ratio	0.45	0.45	0.41	0.02	0.02		0.41	0.20		0.03	0.33	0.09
Uniform Delay, d1	34.8	34.8	0.0	39.1	39.1		36.7	6.9		41.7	10.1	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.8	0.0	0.0		0.2	0.2		0.1	0.2	0.1
Delay (s)	35.3	35.3	0.8	39.1	39.1		36.9	7.1		41.8	10.2	8.7
Level of Service	D	D	A	D	D		D	A		D	B	A
Approach Delay (s)		10.3			39.1			15.3			10.0	
Approach LOS		B			D			B			B	

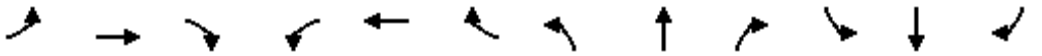
Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



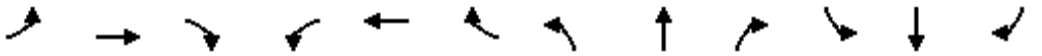
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	0	22	46	0	39	16	226	9	36	350	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583	1770	1583		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1583	1770	1583		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	63	0	24	51	0	43	18	251	10	40	389	8
RTOR Reduction (vph)	0	0	21	0	37	0	0	0	6	0	0	5
Lane Group Flow (vph)	31	32	3	51	6	0	18	251	4	40	389	3
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	6.1	6.1	6.1	7.2	7.2		0.8	21.6	21.6	2.2	23.0	23.0
Effective Green, g (s)	6.1	6.1	6.1	7.2	7.2		0.8	21.6	21.6	2.2	23.0	23.0
Actuated g/C Ratio	0.11	0.11	0.11	0.13	0.13		0.01	0.40	0.40	0.04	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	188	188	178	234	210		26	1405	629	72	1496	669
v/s Ratio Prot	0.02	c0.02		c0.03	0.00		0.01	0.07		c0.02	c0.11	
v/s Ratio Perm			0.00						0.00			0.00
v/c Ratio	0.16	0.17	0.02	0.22	0.03		0.69	0.18	0.01	0.56	0.26	0.01
Uniform Delay, d1	21.8	21.9	21.5	21.1	20.6		26.7	10.6	9.9	25.6	10.2	9.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2	0.0	0.2	0.0		48.6	0.1	0.0	5.2	0.1	0.0
Delay (s)	22.0	22.0	21.5	21.3	20.6		75.3	10.7	9.9	30.8	10.3	9.1
Level of Service	C	C	C	C	C		E	B	A	C	B	A
Approach Delay (s)		21.9			20.9			14.9			12.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	365	11	37	193	12	30	7	19	8	49	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1716	1583		1846	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1716	1583		1846	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2	406	12	41	214	13	33	8	21	9	54	1
RTOR Reduction (vph)	0	0	6	0	0	6	0	0	19	0	1	0
Lane Group Flow (vph)	2	406	6	41	214	7	20	21	2	0	63	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	0.6	23.2	23.2	2.1	24.7	24.7	3.8	3.8	3.8		3.7	
Effective Green, g (s)	2.6	25.2	25.2	3.1	26.7	26.7	4.8	4.8	4.8		5.7	
Actuated g/C Ratio	0.05	0.50	0.50	0.06	0.53	0.53	0.10	0.10	0.10		0.11	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	91	1766	790	109	1871	837	160	163	150		208	
v/s Ratio Prot	0.00	c0.11		c0.02	0.06		0.01	c0.01			c0.03	
v/s Ratio Perm			0.00			0.00			0.00			
v/c Ratio	0.02	0.23	0.01	0.38	0.11	0.01	0.12	0.13	0.01		0.30	
Uniform Delay, d1	22.7	7.2	6.4	22.8	6.0	5.6	20.9	20.9	20.7		20.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.1	0.0	0.8	0.0	0.0	0.1	0.1	0.0		0.3	
Delay (s)	22.8	7.3	6.4	23.6	6.0	5.6	21.1	21.1	20.7		20.9	
Level of Service	C	A	A	C	A	A	C	C	C		C	
Approach Delay (s)		7.3			8.7			20.9			20.9	
Approach LOS		A			A			C			C	

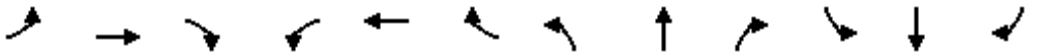
Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	11.7
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	280	59	28	163	13	27	6	17	23	25	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1715	1478	1681	1761	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1715	1478	1681	1761	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	311	66	31	181	14	30	7	19	26	28	66
RTOR Reduction (vph)	0	0	35	0	0	8	0	0	18	0	0	57
Lane Group Flow (vph)	37	311	31	31	181	6	18	19	1	23	31	9
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	1.9	17.3	17.3	1.8	17.2	17.2	1.6	1.6	1.6	4.0	4.0	4.0
Effective Green, g (s)	2.9	20.0	20.0	2.8	19.9	19.9	2.6	2.6	2.6	5.0	5.9	5.9
Actuated g/C Ratio	0.07	0.47	0.47	0.07	0.46	0.46	0.06	0.06	0.06	0.12	0.14	0.14
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	119	1646	687	115	1638	684	102	104	89	195	242	203
v/s Ratio Prot	c0.02	c0.09		0.02	0.05		0.01	c0.01		0.01	c0.02	
v/s Ratio Perm			0.02			0.00			0.00			0.01
v/c Ratio	0.31	0.19	0.04	0.27	0.11	0.01	0.18	0.18	0.01	0.12	0.13	0.04
Uniform Delay, d1	19.1	6.7	6.3	19.1	6.5	6.2	19.2	19.2	19.0	17.0	16.3	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.0	0.5	0.0	0.0	0.3	0.3	0.0	0.4	0.3	0.1
Delay (s)	19.6	6.8	6.3	19.6	6.6	6.2	19.5	19.5	19.0	17.4	16.6	16.2
Level of Service	B	A	A	B	A	A	B	B	B	B	B	B
Approach Delay (s)		7.9			8.3			19.3			16.6	
Approach LOS		A			A			B			B	

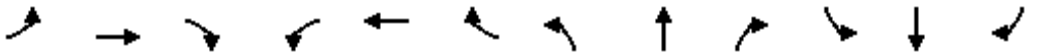
Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	43.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



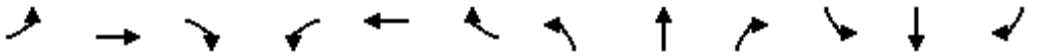
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	278	33	15	149	3	28	7	2	0	7	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97			1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1700			1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97			1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1700			1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	309	37	17	166	3	31	8	2	0	8	7
RTOR Reduction (vph)	0	0	17	0	0	1	0	2	0	0	0	7
Lane Group Flow (vph)	22	309	20	17	166	2	20	19	0	0	8	0
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8						1
Actuated Green, G (s)	0.7	21.4	21.4	0.6	21.3	21.3	3.8	3.8			0.6	0.6
Effective Green, g (s)	1.7	23.4	23.4	1.6	23.3	23.3	4.8	4.8			1.6	1.6
Actuated g/C Ratio	0.04	0.54	0.54	0.04	0.54	0.54	0.11	0.11			0.04	0.04
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3	3.5	3.5			2.0	2.0
Lane Grp Cap (vph)	69	1908	854	65	1900	850	186	188			69	58
v/s Ratio Prot	c0.01	c0.09		0.01	0.05		c0.01	0.01			c0.00	
v/s Ratio Perm			0.01			0.00						0.00
v/c Ratio	0.32	0.16	0.02	0.26	0.09	0.00	0.11	0.10			0.12	0.00
Uniform Delay, d1	20.3	5.0	4.7	20.3	4.9	4.7	17.4	17.4			20.2	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.0	0.1	0.0	0.8	0.0	0.0	0.3	0.3			0.3	0.0
Delay (s)	21.3	5.1	4.7	21.1	4.9	4.7	17.7	17.6			20.5	20.1
Level of Service	C	A	A	C	A	A	B	B			C	C
Approach Delay (s)		6.0			6.4			17.7			20.3	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	159	111	3	95	52	55	12	5	13	56	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	1.00
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1513	1543	1425		1661	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	1.00
Satd. Flow (perm)	1593	3185	1425	1593	3185	1425	1513	1543	1425		1661	1425
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	177	123	3	106	58	61	13	6	14	62	14
RTOR Reduction (vph)	0	0	53	0	0	35	0	0	5	0	0	12
Lane Group Flow (vph)	29	177	70	3	106	23	37	37	1	0	76	2
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	0.8	16.5	24.1	0.5	16.2	16.2	7.6	7.6	7.6		4.3	4.3
Effective Green, g (s)	1.8	18.5	26.1	1.5	18.2	18.2	8.6	8.6	8.6		5.3	5.3
Actuated g/C Ratio	0.04	0.40	0.57	0.03	0.40	0.40	0.19	0.19	0.19		0.12	0.12
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	62	1284	810	52	1263	565	283	289	267		192	165
v/s Ratio Prot	c0.02	c0.06	0.02	0.00	c0.03		c0.02	0.02			c0.05	
v/s Ratio Perm			0.03			0.02			0.00			0.00
v/c Ratio	0.47	0.14	0.09	0.06	0.08	0.04	0.13	0.13	0.00		0.40	0.01
Uniform Delay, d1	21.6	8.7	4.5	21.5	8.6	8.5	15.5	15.5	15.2		18.8	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	0.1	0.1	0.2	0.0	0.0	0.2	0.2	0.0		0.5	0.0
Delay (s)	23.6	8.7	4.5	21.7	8.7	8.5	15.8	15.8	15.2		19.3	18.0
Level of Service	C	A	A	C	A	A	B	B	B		B	B
Approach Delay (s)		8.5			8.9			15.7			19.1	
Approach LOS		A			A			B			B	

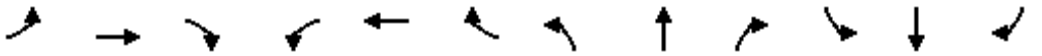
Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	25.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	107	35	86	50	16	7	21	494	73	25	955	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1639		3433	1769		1676	4984	1413	1745	5187	1472
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1639		3433	1769		1676	4984	1413	1745	5187	1472
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	119	39	96	56	18	8	23	549	81	28	1061	49
RTOR Reduction (vph)	0	75	0	0	7	0	0	0	37	0	0	22
Lane Group Flow (vph)	119	60	0	56	19	0	23	549	44	28	1061	27
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	14.0	11.9		5.6	4.8		2.2	38.8	38.8	2.3	38.9	38.9
Effective Green, g (s)	15.0	12.9		6.6	5.8		3.2	42.2	42.2	3.3	42.3	42.3
Actuated g/C Ratio	0.19	0.17		0.08	0.07		0.04	0.54	0.54	0.04	0.54	0.54
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	339	271		291	132		69	2700	765	74	2817	799
v/s Ratio Prot	c0.07	0.04		c0.02	0.01		0.01	0.11		c0.02	c0.20	
v/s Ratio Perm									0.03			0.02
v/c Ratio	0.35	0.22		0.19	0.14		0.33	0.20	0.06	0.38	0.38	0.03
Uniform Delay, d1	27.2	28.1		33.2	33.7		36.3	9.2	8.4	36.3	10.2	8.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3		0.1	0.2		1.0	0.1	0.1	1.2	0.2	0.0
Delay (s)	27.5	28.5		33.3	33.9		37.4	9.3	8.5	37.5	10.4	8.3
Level of Service	C	C		C	C		D	A	A	D	B	A
Approach Delay (s)		28.0			33.5			10.2			11.0	
Approach LOS		C			C			B			B	

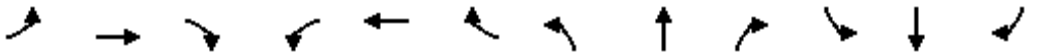
Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



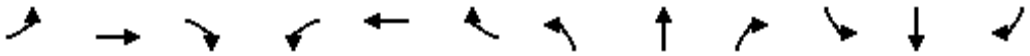
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	89	79	167	73	10	43	561	55	31	1048	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00		0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	1829		3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	1829		3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	99	88	186	81	11	48	623	61	34	1164	37
RTOR Reduction (vph)	0	0	80	0	4	0	0	0	23	0	0	15
Lane Group Flow (vph)	38	99	8	186	88	0	48	623	38	34	1164	22
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	3.9	11.3	11.3	10.9	18.3		5.2	75.4	75.4	3.8	72.9	72.9
Effective Green, g (s)	3.9	11.3	11.3	10.9	18.3		5.2	75.4	75.4	3.8	72.9	72.9
Actuated g/C Ratio	0.03	0.09	0.09	0.09	0.15		0.04	0.63	0.63	0.03	0.61	0.61
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	5.6	5.6	2.0	4.3	4.3
Lane Grp Cap (vph)	112	333	149	312	279		149	2224	995	109	3089	962
v/s Ratio Prot	0.01	0.03		c0.05	c0.05		c0.01	0.18		0.01	c0.23	
v/s Ratio Perm			0.01						0.02			0.01
v/c Ratio	0.34	0.30	0.06	0.60	0.31		0.32	0.28	0.04	0.31	0.38	0.02
Uniform Delay, d1	56.8	50.7	49.5	52.4	45.3		55.7	10.1	8.5	56.8	12.0	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.6	0.2	2.0	0.8		0.5	0.3	0.1	0.6	0.1	0.0
Delay (s)	57.4	51.3	49.7	54.5	46.1		56.1	10.4	8.6	57.4	12.1	9.4
Level of Service	E	D	D	D	D		E	B	A	E	B	A
Approach Delay (s)		51.7			51.7			13.2			13.3	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



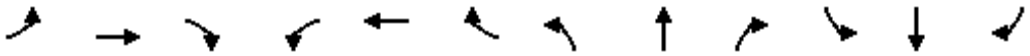
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	22	119	148	25	10	118	684	153	41	1259	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1763	1583	1610	3234		3433	5085	1583	3433	5085	1583
Flt Permitted	0.37	0.39	1.00	0.74	0.78		0.13	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	649	685	1583	1253	2601		479	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	24	132	164	28	11	131	760	170	46	1399	31
RTOR Reduction (vph)	0	0	117	0	9	0	0	0	96	0	0	12
Lane Group Flow (vph)	18	26	15	82	112	0	131	760	74	46	1399	19
Turn Type	Perm		Perm	Perm			Perm		Perm	Prot		Perm
Protected Phases		8			7			2		1	6	
Permitted Phases	8		8	7			2		2			6
Actuated Green, G (s)	10.9	10.9	10.9	12.1	12.1		41.4	41.4	41.4	11.0	57.4	57.4
Effective Green, g (s)	10.9	10.9	10.9	12.1	12.1		41.4	41.4	41.4	11.0	57.4	57.4
Actuated g/C Ratio	0.11	0.11	0.11	0.13	0.13		0.44	0.44	0.44	0.12	0.60	0.60
Clearance Time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	4.3	4.3
Lane Grp Cap (vph)	74	79	182	160	331		209	2216	690	398	3072	956
v/s Ratio Prot								0.15		0.01	c0.28	
v/s Ratio Perm	0.03	c0.04	0.01	c0.07	0.04		c0.27		0.05			0.01
v/c Ratio	0.24	0.33	0.08	0.51	0.34		0.63	0.34	0.11	0.12	0.46	0.02
Uniform Delay, d1	38.3	38.7	37.6	38.7	37.8		20.8	17.8	15.9	37.6	10.3	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	2.4	0.2	2.8	0.6		13.4	0.4	0.3	0.1	0.2	0.0
Delay (s)	40.0	41.1	37.8	41.5	38.4		34.2	18.2	16.2	37.8	10.4	7.5
Level of Service	D	D	D	D	D		C	B	B	D	B	A
Approach Delay (s)		38.5			39.6			19.9			11.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



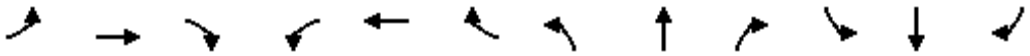
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	94	0	0	473	414	483	0	0	1491	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0			4.0	3.0	5.3			5.3	
Lane Util. Factor			1.00			1.00	1.00	0.95			0.91	
Frt			0.86			0.86	1.00	1.00			1.00	
Flt Protected			1.00			1.00	0.95	1.00			1.00	
Satd. Flow (prot)			1611			1611	1770	3539			5064	
Flt Permitted			1.00			1.00	0.95	1.00			1.00	
Satd. Flow (perm)			1611			1611	1770	3539			5064	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	104	0	0	526	460	537	0	0	1657	47
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	0	104	0	0	526	460	537	0	0	1700	0
Turn Type			Free			Free	Prot					
Protected Phases							5	2			6	
Permitted Phases			Free			Free						
Actuated Green, G (s)			60.0			60.0	20.4	60.0			30.3	
Effective Green, g (s)			60.0			60.0	21.4	60.0			30.3	
Actuated g/C Ratio			1.00			1.00	0.36	1.00			0.51	
Clearance Time (s)							4.0	5.3			5.3	
Vehicle Extension (s)							3.0	3.0			3.0	
Lane Grp Cap (vph)			1611			1611	631	3539			2557	
v/s Ratio Prot							c0.26	0.15			c0.34	
v/s Ratio Perm			0.06			0.33						
v/c Ratio			0.06			0.33	0.73	0.15			0.66	
Uniform Delay, d1			0.0			0.0	16.8	0.0			11.1	
Progression Factor			1.00			1.00	0.96	1.00			1.00	
Incremental Delay, d2			0.1			0.5	3.9	0.1			1.4	
Delay (s)			0.1			0.5	20.0	0.1			12.5	
Level of Service			A			A	B	A			B	
Approach Delay (s)		0.1			0.5			9.3			12.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.3
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



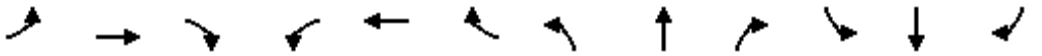
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	606	0	0	104	0	794	117	722	863	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.3			3.0		4.7	4.7	4.7	4.7	
Lane Util. Factor			0.88			1.00		0.91	1.00	0.97	0.91	
Frt			0.85			0.86		1.00	0.85	1.00	1.00	
Flt Protected			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			2787			1611		5085	1583	3433	5085	
Flt Permitted			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			2787			1611		5085	1583	3433	5085	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	673	0	0	116	0	882	130	802	959	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	50	0	0	0
Lane Group Flow (vph)	0	0	673	0	0	116	0	882	80	802	959	0
Turn Type			custom			Free			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases			5			Free			2			
Actuated Green, G (s)			19.8			60.0		24.3	24.3	24.3	29.2	
Effective Green, g (s)			19.8			60.0		25.3	25.3	25.3	30.2	
Actuated g/C Ratio			0.33			1.00		0.42	0.42	0.42	0.50	
Clearance Time (s)			5.3					5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)			920			1611		2144	667	1448	2559	
v/s Ratio Prot								c0.17		c0.23	0.19	
v/s Ratio Perm			c0.24			0.07			0.05			
v/c Ratio			0.73			0.07		0.41	0.12	0.55	0.37	
Uniform Delay, d1			17.8			0.0		12.1	10.6	13.1	9.1	
Progression Factor			1.00			1.00		0.51	0.33	0.15	0.10	
Incremental Delay, d2			3.0			0.1		0.6	0.4	0.3	0.3	
Delay (s)			20.8			0.1		6.8	3.9	2.3	1.2	
Level of Service			C			A		A	A	A	A	
Approach Delay (s)		20.8			0.1			6.4			1.7	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



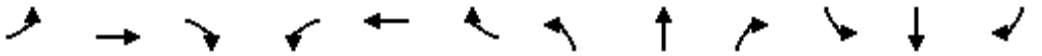
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	3	1	7	5	7	21	25	0	1	11	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.97			0.95		1.00	1.00		1.00	0.92	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795			1740		1770	3539		1770	1717	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1812			1771		1770	3539		1770	1717	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	3	1	8	6	8	23	28	0	1	12	13
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	4	0	0	14	0	23	28	0	1	19	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		0.7			0.8		0.8	19.4		0.7	19.3	
Effective Green, g (s)		0.7			0.8		0.8	19.4		0.7	19.3	
Actuated g/C Ratio		0.02			0.02		0.02	0.52		0.02	0.51	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		34			38		38	1826		33	881	
v/s Ratio Prot							c0.01	0.01		0.00	c0.01	
v/s Ratio Perm		c0.00			c0.01							
v/c Ratio		0.12			0.37		0.61	0.02		0.03	0.02	
Uniform Delay, d1		18.1			18.2		18.2	4.4		18.1	4.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			2.2		17.2	0.0		0.1	0.0	
Delay (s)		18.7			20.4		35.5	4.4		18.3	4.5	
Level of Service		B			C		D	A		B	A	
Approach Delay (s)		18.7			20.4			18.4			5.0	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	37.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



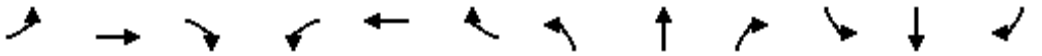
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	4	5	25	7	74	14	805	47	166	1167	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.4	3.4	3.0	2.5	3.2	3.0	2.5	3.2	3.2
Lane Util. Factor	0.86	0.86	1.00	0.86	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3044	3097	1583	3044	3121	1583	3335	4940	1538	3335	4940	1495
Flt Permitted	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3044	3097	1583	3044	3121	1583	3335	4940	1538	3335	4940	1495
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	4	6	28	8	82	16	894	52	184	1297	31
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	7
Lane Group Flow (vph)	17	13	6	19	17	82	16	894	52	184	1297	24
Confl. Peds. (#/hr)												10
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	4.5	4.5	120.0	3.7	3.7	120.0	2.3	82.2	120.0	11.0	90.9	90.9
Effective Green, g (s)	6.0	6.0	120.0	5.2	5.2	120.0	3.8	84.7	120.0	12.5	93.4	93.4
Actuated g/C Ratio	0.05	0.05	1.00	0.04	0.04	1.00	0.03	0.71	1.00	0.10	0.78	0.78
Clearance Time (s)	4.0	4.0		4.9	4.9		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.9	3.9		2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	152	155	1583	132	135	1583	106	3487	1538	347	3845	1164
v/s Ratio Prot	c0.01	0.00		c0.01	0.01		0.00	0.18		c0.06	c0.26	
v/s Ratio Perm			0.00			0.05			0.03			0.02
v/c Ratio	0.11	0.08	0.00	0.14	0.13	0.05	0.15	0.26	0.03	0.53	0.34	0.02
Uniform Delay, d1	54.5	54.4	0.0	55.3	55.2	0.0	56.5	6.3	0.0	51.0	4.0	3.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.59	1.00	1.00	1.00	1.20
Incremental Delay, d2	0.3	0.2	0.0	0.7	0.6	0.1	0.2	0.1	0.0	0.7	0.2	0.0
Delay (s)	54.8	54.6	0.0	55.9	55.8	0.1	56.1	3.8	0.0	51.6	4.2	3.6
Level of Service	D	D	A	E	E	A	E	A	A	D	A	A
Approach Delay (s)		45.6			17.1			4.5			10.0	
Approach LOS		D			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	0	165	4	1	3	121	517	2	6	981	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1791	1583	1770	3537		1770	3539	1583
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1791	1583	1770	3537		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	0	183	4	1	3	134	574	2	7	1090	132
RTOR Reduction (vph)	0	0	152	0	0	3	0	0	0	0	0	46
Lane Group Flow (vph)	0	100	31	0	5	0	134	576	0	7	1090	86
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)		11.9	11.9		1.3	1.3	10.1	43.1		0.8	33.8	33.8
Effective Green, g (s)		12.9	12.9		2.3	2.3	13.1	45.1		1.8	36.8	36.8
Actuated g/C Ratio		0.17	0.17		0.03	0.03	0.17	0.59		0.02	0.48	0.48
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		300	269		54	48	305	2099		42	1714	767
v/s Ratio Prot		c0.06			c0.00		c0.08	0.16		0.00	c0.31	
v/s Ratio Perm			0.02			0.00						0.05
v/c Ratio		0.33	0.12		0.09	0.00	0.44	0.27		0.17	0.64	0.11
Uniform Delay, d1		27.8	26.7		35.8	35.7	28.2	7.5		36.4	14.6	10.7
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2	0.1		0.3	0.0	0.4	0.1		0.7	0.9	0.1
Delay (s)		28.0	26.8		36.1	35.7	28.5	7.6		37.0	15.5	10.8
Level of Service		C	C		D	D	C	A		D	B	B
Approach Delay (s)		27.2			36.0			11.6			15.1	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	10.9
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

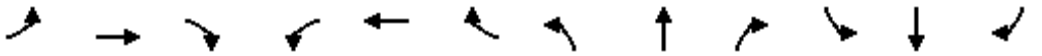


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	4	235	2	4	3	171	462	1	1	909	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1832	1583	3433	3538		1770	3539	1583
Flt Permitted	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1689	1583		1832	1583	3433	3538		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	191	4	261	2	4	3	190	513	1	1	1010	273
RTOR Reduction (vph)	0	0	183	0	0	3	0	0	0	0	0	68
Lane Group Flow (vph)	97	98	78	0	6	0	190	514	0	1	1010	205
Turn Type	Split		pm+ov	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4	5	3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)	12.3	12.3	21.6		0.7	0.7	9.3	47.5		0.6	38.8	38.8
Effective Green, g (s)	13.3	13.3	23.6		1.7	1.7	10.3	50.0		1.6	41.3	41.3
Actuated g/C Ratio	0.17	0.17	0.30		0.02	0.02	0.13	0.64		0.02	0.53	0.53
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	284	286	536		40	34	450	2251		36	1860	832
v/s Ratio Prot	0.06	c0.06	0.02		c0.00		c0.06	0.15		0.00	c0.29	
v/s Ratio Perm			0.03			0.00						0.13
v/c Ratio	0.34	0.34	0.15		0.15	0.00	0.42	0.23		0.03	0.54	0.25
Uniform Delay, d1	28.8	28.8	20.1		37.7	37.6	31.4	6.1		37.7	12.4	10.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.7	0.0		0.6	0.0	0.2	0.1		0.1	0.6	0.3
Delay (s)	29.5	29.5	20.2		38.4	37.6	31.6	6.2		37.9	13.0	10.5
Level of Service	C	C	C		D	D	C	A		D	B	B
Approach Delay (s)		24.2			38.1			13.1			12.5	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

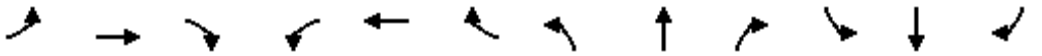
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	150	284	369	216	573	441
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	4.3
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	316	410	240	637	490
RTOR Reduction (vph)	0	138	0	160	0	0
Lane Group Flow (vph)	167	178	410	80	637	490
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	9.4	24.9	15.7	15.7	15.5	35.2
Effective Green, g (s)	10.4	29.5	18.0	18.0	17.8	36.2
Actuated g/C Ratio	0.19	0.55	0.33	0.33	0.33	0.67
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	5.3
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	662	916	1182	529	1134	2377
v/s Ratio Prot	c0.05	0.06	c0.12		c0.19	0.14
v/s Ratio Perm		0.05		0.05		
v/c Ratio	0.25	0.19	0.35	0.15	0.56	0.21
Uniform Delay, d1	18.5	6.2	13.5	12.6	14.8	3.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.2	0.2	0.4	0.1
Delay (s)	18.5	6.2	13.8	12.8	15.2	3.4
Level of Service	B	A	B	B	B	A
Approach Delay (s)	10.5		13.4			10.1
Approach LOS	B		B			B

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	53.9	Sum of lost time (s)	7.7
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	257	7	31	32	15	31	27	325	0	41	447	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.97			0.95		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1653			1729		1770	3539		1770	3472	
Flt Permitted	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1653			1729		1770	3539		1770	3472	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	286	8	34	36	17	34	30	361	0	46	497	72
RTOR Reduction (vph)	0	9	0	0	21	0	0	0	0	0	11	0
Lane Group Flow (vph)	166	153	0	0	66	0	30	361	0	46	558	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	11.1	11.1			5.7		2.1	18.0		3.6	19.1	
Effective Green, g (s)	11.1	11.1			5.7		2.1	18.0		3.6	19.1	
Actuated g/C Ratio	0.20	0.20			0.10		0.04	0.33		0.07	0.35	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Vehicle Extension (s)	2.0	2.0			2.0		2.0	4.2		2.0	3.2	
Lane Grp Cap (vph)	337	332			178		67	1152		115	1199	
v/s Ratio Prot	c0.10	0.09			c0.04		0.02	0.10		c0.03	c0.16	
v/s Ratio Perm												
v/c Ratio	0.49	0.46			0.37		0.45	0.31		0.40	0.47	
Uniform Delay, d1	19.6	19.5			23.1		26.0	14.0		24.8	14.1	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4			0.5		1.7	0.2		0.8	0.3	
Delay (s)	20.0	19.8			23.6		27.8	14.2		25.6	14.4	
Level of Service	C	B			C		C	B		C	B	
Approach Delay (s)		19.9			23.6			15.3			15.3	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	55.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

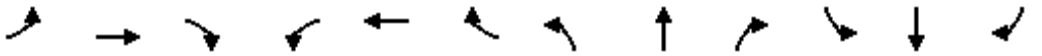


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	7	19	32	2	7	24	348	5	12	463	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786	1583		1779	1583	1770	3531		1770	3514	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1786	1583		1779	1583	1770	3531		1770	3514	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	8	21	36	2	8	27	387	6	13	514	26
RTOR Reduction (vph)	0	0	19	0	0	8	0	0	0	0	3	0
Lane Group Flow (vph)	0	59	2	0	38	0	27	393	0	13	537	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		5.0	5.0		3.3	3.3	1.9	27.8		0.8	26.7	
Effective Green, g (s)		5.0	5.0		3.3	3.3	1.9	27.8		0.8	26.7	
Actuated g/C Ratio		0.09	0.09		0.06	0.06	0.04	0.52		0.01	0.50	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)		166	147		109	97	63	1825		26	1744	
v/s Ratio Prot		c0.03			c0.02		c0.02	0.11		0.01	c0.15	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.36	0.01		0.35	0.01	0.43	0.22		0.50	0.31	
Uniform Delay, d1		22.9	22.2		24.2	23.7	25.4	7.1		26.3	8.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		0.7	0.0	1.7	0.1		5.4	0.2	
Delay (s)		23.4	22.2		24.9	23.7	27.1	7.2		31.7	8.2	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		23.1			24.7			8.4			8.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	16.9
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

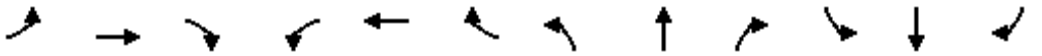
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	7	352	15	56	458
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	8	391	17	62	509
RTOR Reduction (vph)	0	7	0	6	0	0
Lane Group Flow (vph)	4	1	391	11	62	509
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	2.0	2.0	24.1	24.1	2.5	30.6
Effective Green, g (s)	4.0	4.0	26.8	26.8	4.5	33.3
Actuated g/C Ratio	0.09	0.09	0.63	0.63	0.11	0.79
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	325	150	3222	1003	188	4003
v/s Ratio Prot	c0.00		0.08		c0.04	c0.10
v/s Ratio Perm		0.00		0.01		
v/c Ratio	0.01	0.01	0.12	0.01	0.33	0.13
Uniform Delay, d1	17.4	17.3	3.1	2.9	17.5	1.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.0	0.0	0.4	0.0
Delay (s)	17.4	17.4	3.1	2.9	17.9	1.1
Level of Service	B	B	A	A	B	A
Approach Delay (s)	17.4		3.1			2.9
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	3.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	4.0
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	87	12	276	262	74	29	9	7	94	10	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	4995		1770	5085	1583		1794	1583	1681	1701	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	4995		1770	5085	1583		1794	1583	1681	1701	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	97	13	307	291	82	32	10	8	104	11	13
RTOR Reduction (vph)	0	9	0	0	0	44	0	0	7	0	0	11
Lane Group Flow (vph)	38	101	0	307	291	38	0	42	1	57	58	2
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	5.4	15.6		16.4	26.6	26.6		4.9	4.9	8.8	8.8	8.8
Effective Green, g (s)	6.4	17.9		17.4	28.9	28.9		5.9	5.9	9.8	9.8	9.8
Actuated g/C Ratio	0.10	0.28		0.28	0.46	0.46		0.09	0.09	0.16	0.16	0.16
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	180	1419		489	2333	726		168	148	261	265	246
v/s Ratio Prot	0.02	0.02		c0.17	c0.06			c0.02		0.03	c0.03	
v/s Ratio Perm						0.02			0.00			0.00
v/c Ratio	0.21	0.07		0.63	0.12	0.05		0.25	0.01	0.22	0.22	0.01
Uniform Delay, d1	26.0	16.5		20.0	9.8	9.5		26.5	25.9	23.3	23.3	22.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0		1.8	0.0	0.1		0.3	0.0	0.2	0.2	0.0
Delay (s)	26.2	16.5		21.8	9.8	9.5		26.8	25.9	23.4	23.4	22.5
Level of Service	C	B		C	A	A		C	C	C	C	C
Approach Delay (s)		19.0			15.2			26.6			23.3	
Approach LOS		B			B			C			C	

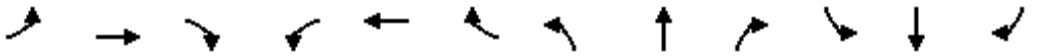
Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	455	244	34	193	58	162	303	42	44	234	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3474		1832	3663	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3474		1832	3663	1639
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	71	506	271	38	214	64	180	337	47	49	260	59
RTOR Reduction (vph)	0	0	195	0	0	46	0	9	0	0	0	43
Lane Group Flow (vph)	71	506	76	38	214	18	180	375	0	49	260	16
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	4.6	16.5	16.5	4.2	15.7	15.7	12.3	23.2		4.3	15.2	15.2
Effective Green, g (s)	5.6	18.5	18.5	5.2	18.4	18.4	13.3	25.5		5.3	17.5	17.5
Actuated g/C Ratio	0.08	0.28	0.28	0.08	0.28	0.28	0.20	0.38		0.08	0.26	0.26
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	149	986	441	139	981	439	355	1334		146	965	432
v/s Ratio Prot	c0.04	c0.14		0.02	0.06		c0.10	c0.11		0.03	0.07	
v/s Ratio Perm			0.05			0.01						0.01
v/c Ratio	0.48	0.51	0.17	0.27	0.22	0.04	0.51	0.28		0.34	0.27	0.04
Uniform Delay, d1	29.0	20.2	18.1	28.8	18.5	17.5	23.6	14.1		28.9	19.4	18.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.9	0.4	0.4	0.2	0.1	0.4	0.2		0.5	0.2	0.1
Delay (s)	29.9	21.0	18.5	29.2	18.6	17.6	24.0	14.3		29.4	19.6	18.2
Level of Service	C	C	B	C	B	B	C	B		C	B	B
Approach Delay (s)		21.0			19.7			17.4			20.7	
Approach LOS		C			B			B			C	

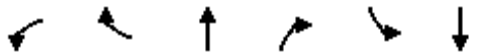
Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



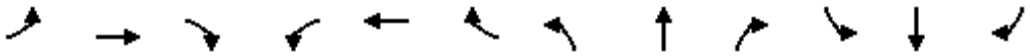
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	2	1	21	1	59	24	513	36	97	333	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1808	1583		1804	1599	1770	3724		1832	4029	1639
Flt Permitted		0.97	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1808	1583		1804	1599	1770	3724		1832	4029	1639
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	2	1	23	1	66	27	570	40	108	370	8
RTOR Reduction (vph)	0	0	1	0	0	50	0	4	0	0	0	4
Lane Group Flow (vph)	0	5	0	0	24	16	27	606	0	108	370	4
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		0.9	0.9		3.6	10.4	0.8	22.6		6.8	28.6	28.6
Effective Green, g (s)		0.9	0.9		3.6	12.4	0.8	24.9		7.8	30.9	28.6
Actuated g/C Ratio		0.02	0.02		0.07	0.24	0.02	0.49		0.15	0.60	0.56
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		32	28		127	481	28	1811		279	2432	916
v/s Ratio Prot		c0.00			c0.01	0.01	0.02	c0.16		c0.06	0.09	
v/s Ratio Perm			0.00			0.00						0.00
v/c Ratio		0.16	0.00		0.19	0.03	0.96	0.33		0.39	0.15	0.00
Uniform Delay, d1		24.8	24.7		22.4	14.8	25.2	8.1		19.5	4.4	5.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.8	0.0		0.3	0.0	153.1	0.2		0.3	0.1	0.0
Delay (s)		25.6	24.7		22.7	14.8	178.2	8.3		19.9	4.5	5.0
Level of Service		C	C		C	B	F	A		B	A	A
Approach Delay (s)		25.5			16.9			15.5			7.9	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



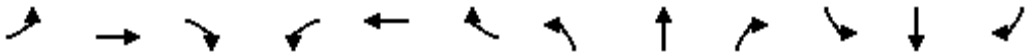
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	9	17	503	5	41	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	2.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3534		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3534		1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	19	559	6	46	404
RTOR Reduction (vph)	0	17	0	0	0	0
Lane Group Flow (vph)	10	2	565	0	46	404
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	4.2	4.2	24.6		3.6	32.1
Effective Green, g (s)	5.2	5.2	26.6		4.6	34.1
Actuated g/C Ratio	0.12	0.12	0.59		0.10	0.75
Clearance Time (s)	4.0	4.0	4.8		4.0	4.9
Vehicle Extension (s)	2.0	2.0	3.9		2.0	2.9
Lane Grp Cap (vph)	204	182	2080		180	2670
v/s Ratio Prot	c0.01		c0.16		c0.03	0.11
v/s Ratio Perm		0.00				
v/c Ratio	0.05	0.01	0.27		0.26	0.15
Uniform Delay, d1	17.8	17.7	4.6		18.7	1.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.0	0.1		0.3	0.0
Delay (s)	17.8	17.7	4.6		19.0	1.6
Level of Service	B	B	A		B	A
Approach Delay (s)	17.8		4.6			3.3
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	4.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	8.8
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	14	0	21	0	1221	26	12	1196	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		3.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3528		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3528		1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	16	0	23	0	1357	29	13	1329	0
RTOR Reduction (vph)	0	0	0	0	0	22	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	16	0	1	0	1385	0	13	1329	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				3.1		3.1		54.3		1.0	59.3	
Effective Green, g (s)				4.1		4.1		56.3		2.0	61.3	
Actuated g/C Ratio				0.05		0.05		0.71		0.03	0.78	
Clearance Time (s)				4.0		4.0		4.9		4.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				92		82		2517		45	2750	
v/s Ratio Prot				c0.01				c0.39		0.01	c0.38	
v/s Ratio Perm						0.00						
v/c Ratio				0.17		0.01		0.55		0.29	0.48	
Uniform Delay, d1				35.8		35.5		5.3		37.8	3.1	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.3		0.0		0.5		1.3	0.3	
Delay (s)				36.1		35.5		5.8		39.0	3.4	
Level of Service				D		D		A		D	A	
Approach Delay (s)		0.0			35.8			5.8			3.8	
Approach LOS		A			D			A			A	

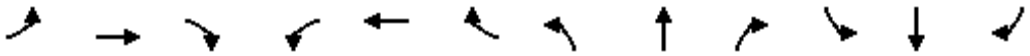
Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	78.9	Sum of lost time (s)	16.4
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	20	33	35	8	65	15	1184	35	46	1100	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.87		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1688		1770	1575		1770	3519		1770	3528	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1688		1770	1575		1770	3519		1770	3528	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	34	22	37	39	9	72	17	1316	39	51	1222	20
RTOR Reduction (vph)	0	34	0	0	65	0	0	1	0	0	1	0
Lane Group Flow (vph)	34	25	0	39	16	0	17	1354	0	51	1241	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split			Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	6.0	6.0		6.9	6.9		2.3	47.8		5.8	51.7	
Effective Green, g (s)	7.0	7.0		7.9	7.9		3.3	49.8		6.8	53.7	
Actuated g/C Ratio	0.08	0.08		0.09	0.09		0.04	0.59		0.08	0.64	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7		2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	148	141		167	148		70	2091		144	2261	
v/s Ratio Prot	c0.02	0.01		c0.02	0.01		0.01	c0.38		c0.03	0.35	
v/s Ratio Perm												
v/c Ratio	0.23	0.18		0.23	0.11		0.24	0.65		0.35	0.55	
Uniform Delay, d1	35.9	35.7		35.1	34.7		39.0	11.2		36.4	8.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.5		0.6	0.3		0.7	0.8		0.5	0.3	
Delay (s)	36.5	36.2		35.7	35.0		39.7	12.0		37.0	8.7	
Level of Service	D	D		D	C		D	B		D	A	
Approach Delay (s)		36.3			35.2			12.4			9.8	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	12.3
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

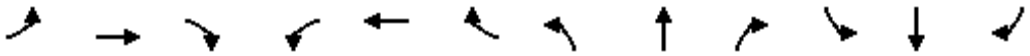
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	23	5	60	19	53	7	1267	13	17	1068	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		2044	1554		2034	1557	1770	3466		1770	3471	1545
Flt Permitted		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		2044	1554		2034	1557	1770	3466		1770	3471	1545
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	26	6	67	21	59	8	1408	14	19	1187	52
RTOR Reduction (vph)	0	0	5	0	0	52	0	1	0	0	0	23
Lane Group Flow (vph)	0	76	1	0	88	7	8	1421	0	19	1187	29
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases			1			2						8
Actuated Green, G (s)		4.4	4.4		5.8	5.8	1.1	30.8		1.3	31.0	31.0
Effective Green, g (s)		5.4	5.4		6.8	6.8	2.1	33.5		2.3	33.7	33.7
Actuated g/C Ratio		0.09	0.09		0.11	0.11	0.04	0.56		0.04	0.56	0.56
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	3.8
Lane Grp Cap (vph)		184	140		231	176	62	1935		68	1950	868
v/s Ratio Prot		c0.04			c0.04		0.00	c0.41		c0.01	0.34	
v/s Ratio Perm			0.00			0.00						0.02
v/c Ratio		0.41	0.00		0.38	0.04	0.13	0.73		0.28	0.61	0.03
Uniform Delay, d1		25.8	24.9		24.6	23.7	28.1	9.9		28.0	8.8	5.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.16	1.20	1.75
Incremental Delay, d2		0.5	0.0		0.4	0.0	0.3	2.5		0.7	0.5	0.0
Delay (s)		26.4	24.9		25.0	23.7	28.4	12.4		33.3	11.0	10.3
Level of Service		C	C		C	C	C	B		C	B	B
Approach Delay (s)		26.2			24.5			12.5			11.3	
Approach LOS		C			C			B			B	

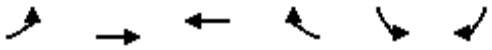
Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



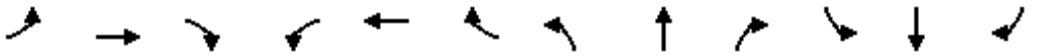
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	0	20	63	0	33	6	1255	14	8	1102	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00		0.97	1.00		0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1540	1770		1540	1770	3532		1770	3539	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1540	1770		1540	1770	3532		1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	0	22	70	0	37	7	1394	16	9	1224	1
RTOR Reduction (vph)	0	0	20	0	0	33	0	1	0	0	0	0
Lane Group Flow (vph)	11	0	2	70	0	4	7	1409	0	9	1225	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	5.4		5.4	5.4		5.4	1.1	35.4		1.1	35.4	
Effective Green, g (s)	6.4		6.4	6.4		6.4	2.1	36.9		3.1	36.9	
Actuated g/C Ratio	0.10		0.10	0.10		0.10	0.03	0.60		0.05	0.60	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	186		162	186		162	61	2137		90	2141	
v/s Ratio Prot	0.01			c0.04			0.00	c0.40		c0.01	0.35	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.06		0.01	0.38		0.02	0.11	0.66		0.10	0.57	
Uniform Delay, d1	24.6		24.5	25.4		24.5	28.5	7.9		27.6	7.3	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0		0.0	0.5		0.0	0.3	1.6		0.2	0.4	
Delay (s)	24.6		24.5	25.9		24.5	28.9	9.5		27.8	7.7	
Level of Service	C		C	C		C	C	A		C	A	
Approach Delay (s)		24.5			25.4			9.6			7.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



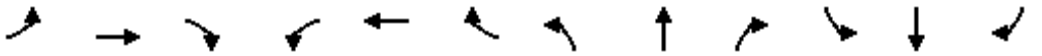
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	16	176	273	18	4	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	3.9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	18	196	303	20	4	12
RTOR Reduction (vph)	0	0	0	7	0	11
Lane Group Flow (vph)	18	196	303	13	4	1
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	32.3	27.6	27.6	2.3	2.3
Effective Green, g (s)	1.7	33.3	28.6	28.6	3.3	3.3
Actuated g/C Ratio	0.04	0.74	0.63	0.63	0.07	0.07
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	2.0
Lane Grp Cap (vph)	67	2607	2239	1002	129	116
v/s Ratio Prot	c0.01	0.06	c0.09		c0.00	
v/s Ratio Perm				0.01		0.00
v/c Ratio	0.27	0.08	0.14	0.01	0.03	0.01
Uniform Delay, d1	21.1	1.7	3.3	3.1	19.5	19.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.0	0.0	0.0	0.0	0.0
Delay (s)	21.9	1.7	3.4	3.1	19.5	19.4
Level of Service	C	A	A	A	B	B
Approach Delay (s)		3.4	3.4		19.5	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	3.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	11.6
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



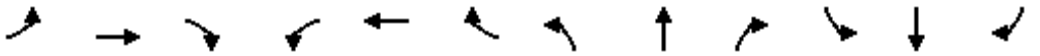
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	149	224	23	107	7	239	319	51	8	317	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	166	249	26	119	8	266	354	57	9	352	54
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	36	166	249	26	119	8	266	354	57	9	352	54
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	3.6	13.4	68.4	2.3	12.5	68.4	14.8	32.8	68.4	0.9	18.9	68.4
Effective Green, g (s)	4.6	16.1	68.4	3.3	15.2	68.4	15.8	35.1	68.4	1.9	21.2	68.4
Actuated g/C Ratio	0.07	0.24	1.00	0.05	0.22	1.00	0.23	0.51	1.00	0.03	0.31	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	119	833	1583	85	786	1583	409	1816	1583	49	1097	1583
v/s Ratio Prot	c0.02	c0.05		0.01	0.03		c0.15	0.10		0.01	c0.10	
v/s Ratio Perm			c0.16			0.01			0.04			0.03
v/c Ratio	0.30	0.20	0.16	0.31	0.15	0.01	0.65	0.19	0.04	0.18	0.32	0.03
Uniform Delay, d1	30.4	21.0	0.0	31.4	21.4	0.0	23.8	9.0	0.0	32.5	18.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.2	0.7	0.2	0.0	2.8	0.1	0.0	0.7	0.3	0.0
Delay (s)	30.9	21.2	0.2	32.2	21.6	0.0	26.6	9.1	0.0	33.2	18.4	0.0
Level of Service	C	C	A	C	C	A	C	A	A	C	B	A
Approach Delay (s)		10.4			22.3			15.2			16.4	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	35	43	36	7	25	18	947	26	83	388	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1788	1583	1770	3525		1770	3534	
Flt Permitted		0.93	1.00		0.73	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1736	1583		1355	1583	1770	3525		1770	3534	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	39	48	40	8	28	20	1052	29	92	431	4
RTOR Reduction (vph)	0	0	42	0	0	24	0	2	0	0	1	0
Lane Group Flow (vph)	0	49	6	0	48	4	20	1079	0	92	434	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		6.3	6.3		6.3	6.3	2.4	32.6		6.5	36.7	
Effective Green, g (s)		7.9	7.9		7.9	7.9	3.4	35.3		7.5	39.4	
Actuated g/C Ratio		0.13	0.13		0.13	0.13	0.06	0.59		0.12	0.66	
Clearance Time (s)		4.9	4.9		4.9	4.9	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		229	208		178	208	100	2074		221	2321	
v/s Ratio Prot							0.01	c0.31		c0.05	0.12	
v/s Ratio Perm		0.03	0.00		c0.04	0.00						
v/c Ratio		0.21	0.03		0.27	0.02	0.20	0.52		0.42	0.19	
Uniform Delay, d1		23.3	22.7		23.5	22.7	27.0	7.3		24.2	4.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.6	0.0	0.4	0.3		0.5	0.2	
Delay (s)		23.6	22.8		24.0	22.7	27.4	7.6		24.7	4.2	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		23.2			23.6			8.0			7.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

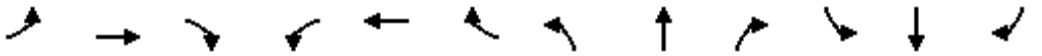


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	3	5	5	0	7	3	955	31	40	410	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.96			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1739			1770	1583	1770	3523		1770	3532	
Flt Permitted		0.89			0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1582			1386	1583	1770	3523		1770	3532	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	3	6	6	0	8	3	1061	34	44	456	6
RTOR Reduction (vph)	0	5	0	0	0	7	0	1	0	0	0	0
Lane Group Flow (vph)	0	15	0	0	6	1	3	1094	0	44	462	0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4		4						
Actuated Green, G (s)		9.8			9.8	9.8	1.0	61.8		4.7	65.5	
Effective Green, g (s)		10.8			10.8	10.8	2.0	64.8		5.7	68.5	
Actuated g/C Ratio		0.12			0.12	0.12	0.02	0.72		0.06	0.76	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)		190			166	190	39	2537		112	2688	
v/s Ratio Prot							0.00	c0.31		c0.02	0.13	
v/s Ratio Perm		c0.01			0.00	0.00						
v/c Ratio		0.08			0.04	0.01	0.08	0.43		0.39	0.17	
Uniform Delay, d1		35.2			35.0	34.9	43.1	5.1		40.5	3.0	
Progression Factor		1.00			1.00	1.00	1.05	1.16		1.00	1.00	
Incremental Delay, d2		0.1			0.0	0.0	0.3	0.2		0.8	0.1	
Delay (s)		35.2			35.0	34.9	45.5	6.1		41.3	3.1	
Level of Service		D			D	C	D	A		D	A	
Approach Delay (s)		35.2			34.9			6.2			6.4	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

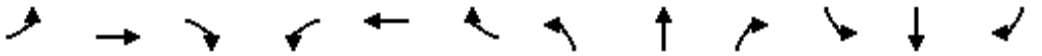
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	57	86	913	18	37	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3529		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3529		1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	63	96	1014	20	41	442
RTOR Reduction (vph)	0	84	1	0	0	0
Lane Group Flow (vph)	63	12	1033	0	41	442
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	10.7	10.7	61.0		4.6	69.6
Effective Green, g (s)	11.7	11.7	64.0		5.6	72.6
Actuated g/C Ratio	0.13	0.13	0.71		0.06	0.81
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	230	206	2510		110	2855
v/s Ratio Prot	c0.04		c0.29		c0.02	0.12
v/s Ratio Perm		0.01				
v/c Ratio	0.27	0.06	0.41		0.37	0.15
Uniform Delay, d1	35.3	34.3	5.3		40.5	1.9
Progression Factor	1.00	1.00	1.00		0.87	0.98
Incremental Delay, d2	0.2	0.0	0.1		0.8	0.1
Delay (s)	35.6	34.4	5.4		35.9	2.0
Level of Service	D	C	A		D	A
Approach Delay (s)	34.8		5.4			4.9
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



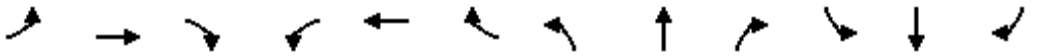
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	0	202	0	2	0	139	557	1	1	715	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5	3.5		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1665	1665	1438		1863		1660	3417	1544	1814	3491	1500
Flt Permitted	0.95	0.95	1.00		1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1665	1665	1438		1863		1660	3417	1544	1814	3491	1500
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	137	0	224	0	2	0	154	619	1	1	794	151
RTOR Reduction (vph)	0	0	180	0	0	0	0	0	0	0	0	88
Lane Group Flow (vph)	68	69	44	0	2	0	154	619	1	1	794	63
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.2	11.2	11.2		1.1		11.6	36.2	36.2	1.0	25.6	25.6
Effective Green, g (s)	13.7	13.7	13.7		2.1		12.6	39.6	39.6	2.0	29.0	29.0
Actuated g/C Ratio	0.20	0.20	0.20		0.03		0.18	0.57	0.57	0.03	0.41	0.41
Clearance Time (s)	6.0	6.0	6.0		4.0		4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)	4.1	4.1	4.1		2.0		2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	326	326	282		56		299	1936	875	52	1448	622
v/s Ratio Prot	0.04	c0.04			c0.00		c0.09	0.18		0.00	c0.23	
v/s Ratio Perm			0.03						0.00			0.04
v/c Ratio	0.21	0.21	0.16		0.04		0.52	0.32	0.00	0.02	0.55	0.10
Uniform Delay, d1	23.6	23.6	23.3		32.9		25.9	8.0	6.6	33.0	15.5	12.5
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.4		0.1		0.6	0.2	0.0	0.1	0.6	0.1
Delay (s)	24.0	24.0	23.7		33.0		26.5	8.2	6.6	33.1	16.1	12.6
Level of Service	C	C	C		C		C	A	A	C	B	B
Approach Delay (s)		23.8			33.0			11.8			15.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	12.5
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



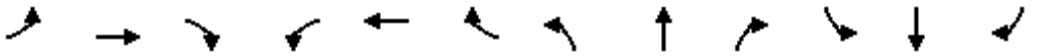
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	0	4	2	0	2	11	686	0	5	911	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4		4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539		1770	3539	1583
Flt Permitted		0.95	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	0	4	2	0	2	12	762	0	6	1012	6
RTOR Reduction (vph)	0	0	4	0	0	2	0	0	0	0	0	1
Lane Group Flow (vph)	0	4	0	0	2	0	12	762	0	6	1012	5
Turn Type	Split		Perm	Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2			6		3	8		7	4	
Permitted Phases			2	6		6			8			4
Actuated Green, G (s)		1.0	1.0		2.0	2.0	0.6	36.8		0.6	36.8	36.8
Effective Green, g (s)		1.0	2.0		2.0	2.0	1.6	37.8		0.6	37.8	37.8
Actuated g/C Ratio		0.02	0.03		0.03	0.03	0.03	0.64		0.01	0.64	0.64
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)		30	54		63	54	48	2275		18	2275	1018
v/s Ratio Prot		c0.00					c0.01	0.22		0.00	c0.29	
v/s Ratio Perm			0.00		c0.00	0.00						0.00
v/c Ratio		0.13	0.00		0.03	0.00	0.25	0.33		0.33	0.44	0.00
Uniform Delay, d1		28.5	27.4		27.5	27.4	28.0	4.8		28.9	5.3	3.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.7	0.0		0.1	0.0	1.0	0.1		3.9	0.2	0.0
Delay (s)		29.2	27.4		27.5	27.4	29.0	4.9		32.8	5.5	3.8
Level of Service		C	C		C	C	C	A		C	A	A
Approach Delay (s)		28.3			27.5			5.3			5.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	16.4
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



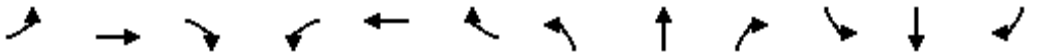
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1	323	22	17	3	297	638	31	1	814	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1688	1583	1610	3293		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1688	1583	1610	3293		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	1	359	24	19	3	330	709	34	1	904	108
RTOR Reduction (vph)	0	0	296	0	3	0	0	0	15	0	0	72
Lane Group Flow (vph)	34	34	63	15	28	0	330	709	19	1	904	36
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.5	11.5	11.5	4.5	4.5		19.5	42.5	42.5	0.8	23.4	23.4
Effective Green, g (s)	14.2	14.2	14.2	5.5	5.5		20.5	45.9	45.9	1.8	26.8	26.8
Actuated g/C Ratio	0.18	0.18	0.18	0.07	0.07		0.25	0.57	0.57	0.02	0.33	0.33
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	296	297	279	110	224		450	2013	900	39	1689	526
v/s Ratio Prot	0.02	0.02		c0.01	0.01		c0.19	0.20		0.00	c0.18	
v/s Ratio Perm			c0.04						0.01			0.02
v/c Ratio	0.11	0.11	0.23	0.14	0.13		0.73	0.35	0.02	0.03	0.54	0.07
Uniform Delay, d1	28.0	28.0	28.5	35.4	35.3		27.6	9.4	7.6	38.6	21.9	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.7	0.9	0.4		5.3	0.2	0.0	0.1	0.5	0.1
Delay (s)	28.2	28.2	29.2	36.3	35.7		32.9	9.6	7.6	38.7	22.4	18.5
Level of Service	C	C	C	D	D		C	A	A	D	C	B
Approach Delay (s)		29.0			35.9			16.7			22.0	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	13.7
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



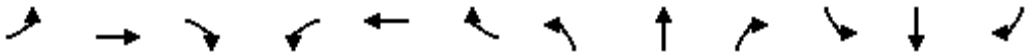
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	4	133	42	3	12	76	1080	54	67	950	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1690	1583		1779	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1690	1583		1779	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	149	4	148	47	3	13	84	1200	60	74	1056	26
RTOR Reduction (vph)	0	0	131	0	0	12	0	0	22	0	0	10
Lane Group Flow (vph)	76	77	17	0	50	1	84	1200	38	74	1056	16
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	13.1	13.1	13.1		10.8	10.8	8.9	69.7	69.7	8.7	69.5	69.5
Effective Green, g (s)	14.1	14.1	14.1		11.8	11.8	9.9	72.7	70.7	9.7	72.5	72.5
Actuated g/C Ratio	0.12	0.12	0.12		0.10	0.10	0.08	0.61	0.59	0.08	0.60	0.60
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	5.3
Lane Grp Cap (vph)	198	199	186		175	156	146	3081	933	143	3072	956
v/s Ratio Prot	0.05	c0.05			c0.03		c0.05	c0.24		c0.04	0.21	
v/s Ratio Perm			0.01			0.00			0.02			0.01
v/c Ratio	0.38	0.39	0.09		0.29	0.01	0.58	0.39	0.04	0.52	0.34	0.02
Uniform Delay, d1	48.9	49.0	47.2		50.2	48.8	53.0	12.2	10.4	52.9	11.9	9.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.1		0.3	0.0	3.4	0.4	0.1	1.3	0.2	0.0
Delay (s)	49.4	49.4	47.3		50.5	48.8	56.4	12.6	10.5	54.2	12.0	9.5
Level of Service	D	D	D		D	D	E	B	B	D	B	A
Approach Delay (s)		48.4			50.2			15.2			14.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



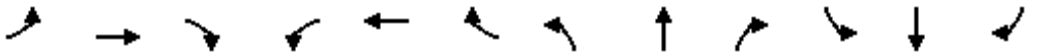
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	113	333	78	142	5	189	1149	35	11	1118	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	230	126	370	87	158	6	210	1277	39	12	1242	186
RTOR Reduction (vph)	0	0	282	0	0	5	0	0	12	0	0	68
Lane Group Flow (vph)	230	126	88	87	158	1	210	1277	27	12	1242	118
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.7	25.8	25.8	9.4	15.5	15.5	11.7	63.3	63.3	1.8	53.4	53.4
Effective Green, g (s)	20.7	28.5	28.5	10.4	18.2	18.2	12.7	66.3	66.3	2.8	56.4	56.4
Actuated g/C Ratio	0.17	0.24	0.24	0.09	0.15	0.15	0.11	0.55	0.55	0.02	0.47	0.47
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3	2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	305	442	376	153	283	240	363	1955	875	41	1663	744
v/s Ratio Prot	c0.13	0.07		0.05	c0.08		c0.06	0.36		0.01	c0.35	
v/s Ratio Perm			0.06			0.00			0.02			0.07
v/c Ratio	0.75	0.29	0.23	0.57	0.56	0.00	0.58	0.65	0.03	0.29	0.75	0.16
Uniform Delay, d1	47.2	37.4	36.9	52.6	47.2	43.2	51.1	18.8	12.2	57.6	26.0	18.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	0.6	0.5	2.9	3.3	0.0	1.4	1.7	0.1	1.4	2.1	0.2
Delay (s)	56.3	38.0	37.4	55.5	50.4	43.2	52.5	20.5	12.3	59.1	28.1	18.4
Level of Service	E	D	D	E	D	D	D	C	B	E	C	B
Approach Delay (s)		43.5			52.0			24.7			27.1	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



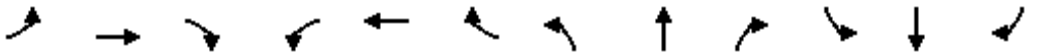
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	207	17	52	184	5	45	3	44	9	3	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.94			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	3499		1770	3524			1700			1731	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (perm)	1770	3499		1770	3524			1700			1731	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	230	19	58	204	6	50	3	49	10	3	7
RTOR Reduction (vph)	0	4	0	0	1	0	0	34	0	0	7	0
Lane Group Flow (vph)	1	245	0	58	209	0	0	68	0	0	13	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.8	19.7		2.6	21.5			6.3			0.9	
Effective Green, g (s)	1.8	22.4		3.6	24.2			7.3			1.9	
Actuated g/C Ratio	0.04	0.47		0.08	0.51			0.15			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	68	1661		135	1807			263			70	
v/s Ratio Prot	0.00	c0.07		c0.03	0.06			c0.04			c0.01	
v/s Ratio Perm												
v/c Ratio	0.01	0.15		0.43	0.12			0.26			0.19	
Uniform Delay, d1	21.8	7.0		20.8	6.0			17.6			21.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.1		0.8	0.0			0.2			0.5	
Delay (s)	21.9	7.1		21.6	6.0			17.8			22.4	
Level of Service	C	A		C	A			B			C	
Approach Delay (s)		7.1			9.4			17.8			22.4	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	47.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



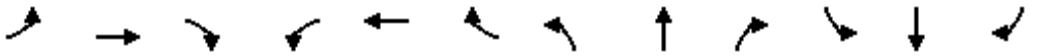
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	186	2	11	318	7	10	1	23	30	1	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.91			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1667			1777	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1667			1777	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	82	207	2	12	353	8	11	1	26	33	1	272
RTOR Reduction (vph)	0	0	1	0	0	5	0	24	0	0	0	202
Lane Group Flow (vph)	82	207	1	12	353	3	0	14	0	0	34	70
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	4.3	17.9	17.9	0.7	14.3	14.3		2.6			11.6	11.6
Effective Green, g (s)	5.3	20.9	20.9	1.7	17.3	17.3		3.6			13.6	13.6
Actuated g/C Ratio	0.10	0.40	0.40	0.03	0.33	0.33		0.07			0.26	0.26
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	179	1409	630	57	1166	522		114			460	410
v/s Ratio Prot	c0.05	0.06		0.01	c0.10			c0.01			0.02	
v/s Ratio Perm			0.00			0.00						c0.04
v/c Ratio	0.46	0.15	0.00	0.21	0.30	0.01		0.12			0.07	0.17
Uniform Delay, d1	22.2	10.1	9.5	24.7	13.1	11.8		23.0			14.7	15.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.7	0.1	0.0	0.7	0.2	0.0		0.2			0.0	0.1
Delay (s)	22.9	10.2	9.5	25.4	13.3	11.8		23.1			14.7	15.2
Level of Service	C	B	A	C	B	B		C			B	B
Approach Delay (s)		13.7			13.6			23.1			15.1	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	12.7
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



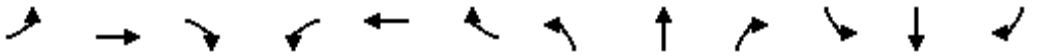
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	328	0	270	0	1127	217	0	847	1115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	0.88
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3433		1583		3539	1583		3539	2787
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		1583		3539	1583		3539	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	364	0	300	0	1252	241	0	941	1239
RTOR Reduction (vph)	0	0	0	0	0	52	0	0	84	0	0	432
Lane Group Flow (vph)	0	0	0	364	0	248	0	1252	157	0	941	807
Turn Type				custom		custom			Perm			Perm
Protected Phases								2			6	
Permitted Phases				8		8			2			6
Actuated Green, G (s)				17.0		17.0		51.6	51.6		51.6	51.6
Effective Green, g (s)				17.0		17.0		51.6	51.6		51.6	51.6
Actuated g/C Ratio				0.21		0.21		0.65	0.65		0.65	0.65
Clearance Time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Vehicle Extension (s)				2.0		2.0		3.8	3.8		3.9	3.9
Lane Grp Cap (vph)				737		340		2306	1031		2306	1816
v/s Ratio Prot								c0.35			0.27	
v/s Ratio Perm				0.11		c0.16			0.10			0.29
v/c Ratio				0.49		0.73		0.54	0.15		0.41	0.44
Uniform Delay, d1				27.3		29.0		7.4	5.3		6.6	6.8
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.2		6.5		0.3	0.1		0.2	0.2
Delay (s)				27.5		35.5		7.8	5.4		6.7	7.0
Level of Service				C		D		A	A		A	A
Approach Delay (s)		0.0			31.1			7.4			6.9	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	10.6
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



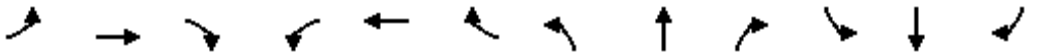
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	214	137	64	0	112	0	984	87	53	703	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3	4.0		4.0		4.9	4.9	4.0	4.9	
Lane Util. Factor		0.95	1.00	0.97		1.00		0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	3433		1583		3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	3433		1583		3539	1583	1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	238	152	71	0	124	0	1093	97	59	781	0
RTOR Reduction (vph)	0	0	129	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	0	238	23	71	0	124	0	1093	84	59	781	0
Turn Type			Perm	Prot		custom			Perm	Prot		
Protected Phases		4		3		3 1		2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		13.0	13.0	10.1		18.5		37.6	37.6	8.4	50.0	
Effective Green, g (s)		13.0	13.0	10.1		18.5		37.6	37.6	8.4	50.0	
Actuated g/C Ratio		0.15	0.15	0.12		0.21		0.43	0.43	0.10	0.57	
Clearance Time (s)		5.3	5.3	4.0				4.9	4.9	4.0	4.9	
Vehicle Extension (s)		2.8	2.8	2.0				3.6	3.6	2.0	3.6	
Lane Grp Cap (vph)		527	236	397		335		1524	682	170	2027	
v/s Ratio Prot		c0.07		0.02		c0.08		c0.31		0.03	c0.22	
v/s Ratio Perm			0.01						0.05			
v/c Ratio		0.45	0.10	0.18		0.37		0.72	0.12	0.35	0.39	
Uniform Delay, d1		33.9	32.1	34.9		29.4		20.5	14.9	36.9	10.2	
Progression Factor		1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6	0.2	0.1		0.3		1.7	0.1	0.4	0.1	
Delay (s)		34.4	32.2	34.9		29.7		22.2	15.0	37.3	10.4	
Level of Service		C	C	C		C		C	B	D	B	
Approach Delay (s)		33.6			31.6			21.6			12.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	19.1
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



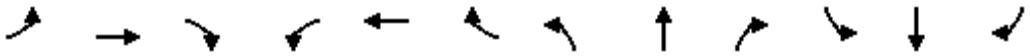
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	102	4	5	200	132	6	30	23	212	14	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1847	1583		1779	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1847	1583		1779	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	46	113	4	6	222	147	7	33	26	236	16	79
RTOR Reduction (vph)	0	0	3	0	0	107	0	0	23	0	0	35
Lane Group Flow (vph)	46	113	1	6	222	40	0	40	3	0	252	44
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	3.5	14.8	14.8	0.6	11.9	11.9		4.9	4.9		16.6	16.6
Effective Green, g (s)	4.5	17.8	17.8	1.6	14.9	14.9		5.9	5.9		17.6	17.6
Actuated g/C Ratio	0.08	0.32	0.32	0.03	0.27	0.27		0.11	0.11		0.32	0.32
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	145	1147	513	52	960	430		198	170		570	507
v/s Ratio Prot	c0.03	c0.03		0.00	c0.06			c0.02			c0.14	
v/s Ratio Perm			0.00			0.03			0.00			0.03
v/c Ratio	0.32	0.10	0.00	0.12	0.23	0.09		0.20	0.02		0.44	0.09
Uniform Delay, d1	23.8	12.9	12.5	26.0	15.5	14.9		22.4	21.9		14.8	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.5	0.0	0.0	0.4	0.1	0.1		0.2	0.0		0.2	0.0
Delay (s)	24.2	13.0	12.5	26.3	15.7	15.1		22.5	21.9		15.0	13.1
Level of Service	C	B	B	C	B	B		C	C		B	B
Approach Delay (s)		16.1			15.6			22.3			14.5	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	54.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



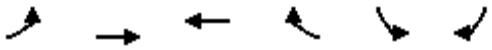
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	284	344	74	37	217	114	32	216	84	148	346	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	316	382	82	41	241	127	36	240	93	164	384	212
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	316	382	82	41	241	127	36	240	93	164	384	212
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.6	22.1	68.6	4.2	12.7	68.6	2.7	11.0	68.6	11.6	20.2	68.6
Effective Green, g (s)	14.6	25.1	68.6	5.2	15.7	68.6	3.7	13.7	68.6	12.6	22.9	68.6
Actuated g/C Ratio	0.21	0.37	1.00	0.08	0.23	1.00	0.05	0.20	1.00	0.18	0.33	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	731	1295	1583	260	810	1583	185	707	1583	631	1181	1583
v/s Ratio Prot	c0.09	c0.11		0.01	0.07		0.01	c0.07		0.05	c0.11	
v/s Ratio Perm			0.05			0.08			0.06			0.13
v/c Ratio	0.43	0.29	0.05	0.16	0.30	0.08	0.19	0.34	0.06	0.26	0.33	0.13
Uniform Delay, d1	23.4	15.5	0.0	29.7	21.9	0.0	31.0	23.6	0.0	24.0	17.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.1	0.1	0.4	0.1	0.2	0.4	0.1	0.1	0.3	0.2
Delay (s)	23.6	15.7	0.1	29.8	22.2	0.1	31.2	24.0	0.1	24.1	17.4	0.2
Level of Service	C	B	A	C	C	A	C	C	A	C	B	A
Approach Delay (s)		17.2			16.1			18.7			14.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



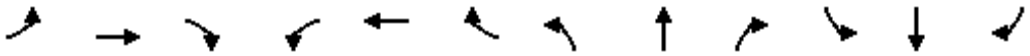
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	430	32	96	184	26	15	156	1	165	138	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	1.00		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3502		1770	3473		1770	1861		1770	1746	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3502		1770	3473		1770	1861		1770	1746	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	172	478	36	107	204	29	17	173	1	183	153	110
RTOR Reduction (vph)	0	6	0	0	12	0	0	0	0	0	23	0
Lane Group Flow (vph)	172	508	0	107	221	0	17	174	0	183	240	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	11.3	20.9		6.9	16.5		2.5	18.6		10.8	26.9	
Effective Green, g (s)	12.3	23.6		7.9	19.2		3.5	20.9		11.8	29.2	
Actuated g/C Ratio	0.16	0.31		0.10	0.25		0.05	0.28		0.16	0.39	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	287	1090		184	880		82	513		276	673	
v/s Ratio Prot	c0.10	c0.15		0.06	0.06		0.01	0.09		c0.10	c0.14	
v/s Ratio Perm												
v/c Ratio	0.60	0.47		0.58	0.25		0.21	0.34		0.66	0.36	
Uniform Delay, d1	29.5	21.0		32.4	22.6		34.8	21.9		30.1	16.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.4		3.0	0.2		0.5	0.5		4.6	0.4	
Delay (s)	31.7	21.4		35.4	22.8		35.3	22.5		34.7	17.0	
Level of Service	C	C		D	C		D	C		C	B	
Approach Delay (s)		24.0			26.7			23.6			24.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



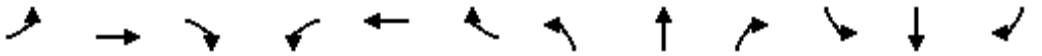
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	9	624	304	16	79	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	1770	3539	3512		1770	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	1770	3539	3512		1770	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	693	338	18	88	0
RTOR Reduction (vph)	0	0	3	0	0	0
Lane Group Flow (vph)	10	693	353	0	88	0
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	0.8	31.6	26.8		8.6	
Effective Green, g (s)	1.8	34.3	29.5		9.6	
Actuated g/C Ratio	0.04	0.70	0.60		0.20	
Clearance Time (s)	4.0	5.7	5.7		3.0	
Vehicle Extension (s)	2.0	3.8	3.8		2.0	
Lane Grp Cap (vph)	65	2482	2119		347	
v/s Ratio Prot	0.01	c0.20	0.10		c0.05	
v/s Ratio Perm						
v/c Ratio	0.15	0.28	0.17		0.25	
Uniform Delay, d1	22.8	2.7	4.3		16.6	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.1	0.0		0.1	
Delay (s)	23.2	2.8	4.3		16.8	
Level of Service	C	A	A		B	
Approach Delay (s)		3.1	4.3		16.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	4.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	48.9	Sum of lost time (s)	5.0
Intersection Capacity Utilization	30.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



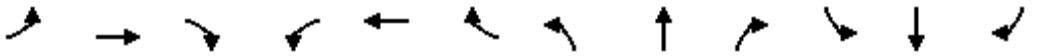
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	649	58	67	255	0	115	0	75	0	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7		2.0	2.7			2.0	2.0		2.0	
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00		1.00	
Frt		0.99		1.00	1.00			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)		3496		1770	3539			1770	1583		1863	
Flt Permitted		1.00		0.95	1.00			0.95	1.00		1.00	
Satd. Flow (perm)		3496		1770	3539			1770	1583		1863	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	721	64	74	283	0	128	0	83	0	1	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	65	0	0	0
Lane Group Flow (vph)	0	780	0	74	283	0	0	128	18	0	1	0
Turn Type	Prot			Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)		23.5		6.3	33.8			11.3	11.3		1.0	
Effective Green, g (s)		26.5		8.3	36.8			13.3	13.3		3.0	
Actuated g/C Ratio		0.44		0.14	0.62			0.22	0.22		0.05	
Clearance Time (s)		5.7		4.0	5.7			4.0	4.0		4.0	
Vehicle Extension (s)		3.8		2.0	3.7			2.0	2.0		2.0	
Lane Grp Cap (vph)		1549		246	2178			394	352		93	
v/s Ratio Prot		c0.22		c0.04	0.08			c0.07			c0.00	
v/s Ratio Perm									0.01			
v/c Ratio		0.50		0.30	0.13			0.32	0.05		0.01	
Uniform Delay, d1		11.9		23.1	4.8			19.5	18.3		27.0	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.3		0.3	0.0			0.2	0.0		0.0	
Delay (s)		12.3		23.4	4.8			19.7	18.3		27.0	
Level of Service		B		C	A			B	B		C	
Approach Delay (s)		12.3			8.7			19.1			27.0	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	8.7
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



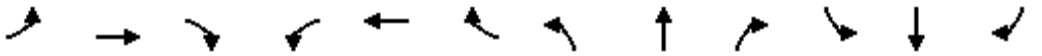
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	580	18	49	241	4	15	7	113	31	14	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3523		1770	3531			1801	1583		1801	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.85	1.00		0.83	1.00
Satd. Flow (perm)	1770	3523		1770	3531			1578	1583		1553	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	8	644	20	54	268	4	17	8	126	34	16	23
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	99	0	0	18
Lane Group Flow (vph)	8	662	0	54	271	0	0	25	27	0	50	5
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	0.7	21.8		2.4	23.5			9.1	9.1		9.1	9.1
Effective Green, g (s)	1.7	24.5		3.4	26.2			10.1	10.1		10.1	10.1
Actuated g/C Ratio	0.04	0.52		0.07	0.56			0.21	0.21		0.21	0.21
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	64	1836		128	1968			339	340		334	340
v/s Ratio Prot	0.00	c0.19		c0.03	0.08							
v/s Ratio Perm								0.02	0.02		c0.03	0.00
v/c Ratio	0.12	0.36		0.42	0.14			0.07	0.08		0.15	0.01
Uniform Delay, d1	21.9	6.6		20.9	5.0			14.7	14.7		15.0	14.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.2		0.8	0.0			0.0	0.0		0.1	0.0
Delay (s)	22.3	6.8		21.7	5.0			14.8	14.8		15.0	14.5
Level of Service	C	A		C	A			B	B		B	B
Approach Delay (s)		7.0			7.8			14.8			14.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	462	10	37	235	12	14	0	33	47	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99			0.91		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1849			1662		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (perm)	1770	1857		1770	1849			1662		1770	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	41	513	11	41	261	13	16	0	37	52	0	4
RTOR Reduction (vph)	0	0	0	0	1	0	0	34	0	0	4	0
Lane Group Flow (vph)	41	524	0	41	273	0	0	19	0	52	0	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	3.9	33.6		3.6	33.3			3.8		5.5	5.5	
Effective Green, g (s)	4.9	36.3		4.6	36.0			4.8		6.5	6.5	
Actuated g/C Ratio	0.08	0.57		0.07	0.56			0.07		0.10	0.10	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	135	1050		127	1037			124		179	160	
v/s Ratio Prot	c0.02	c0.28		0.02	0.15			c0.01		c0.03	0.00	
v/s Ratio Perm												
v/c Ratio	0.30	0.50		0.32	0.26			0.15		0.29	0.00	
Uniform Delay, d1	28.0	8.4		28.3	7.3			27.8		26.7	25.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.5		0.5	0.2			0.4		0.3	0.0	
Delay (s)	28.5	8.9		28.9	7.4			28.2		27.0	25.9	
Level of Service	C	A		C	A			C		C	C	
Approach Delay (s)		10.3			10.2			28.2			27.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

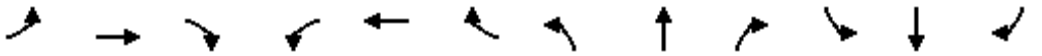


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	22	56	247	28	82	7	255	261	14	368	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	23	59	260	29	86	7	268	275	15	387	6
RTOR Reduction (vph)	0	0	51	0	0	60	0	0	205	0	0	4
Lane Group Flow (vph)	4	23	8	260	29	26	7	268	70	15	387	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.7	6.6	6.6	8.9	14.8	14.8	0.7	12.3	12.3	0.8	12.4	12.4
Effective Green, g (s)	0.7	6.6	6.6	8.9	14.8	14.8	0.7	12.3	12.3	0.8	12.4	12.4
Actuated g/C Ratio	0.01	0.14	0.14	0.18	0.30	0.30	0.01	0.25	0.25	0.02	0.26	0.26
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	49	253	215	629	567	482	49	1287	401	57	1297	404
v/s Ratio Prot	0.00	c0.01		c0.08	0.02		0.00	0.05		c0.00	c0.08	
v/s Ratio Perm			0.01			0.02			0.04			0.00
v/c Ratio	0.08	0.09	0.04	0.41	0.05	0.05	0.14	0.21	0.17	0.26	0.30	0.00
Uniform Delay, d1	23.6	18.4	18.2	17.5	11.9	12.0	23.7	14.3	14.2	23.6	14.6	13.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	0.1	0.4	0.0	0.0	1.3	0.1	0.2	2.5	0.1	0.0
Delay (s)	24.3	18.5	18.3	18.0	12.0	12.0	25.0	14.4	14.4	26.1	14.7	13.5
Level of Service	C	B	B	B	B	B	C	B	B	C	B	B
Approach Delay (s)		18.7			16.1			14.5			15.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	0	8	0	0	0	13	10	0	0	7	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Lane Util. Factor	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770		1583				1770	1863			1863	1583
Flt Permitted	1.00		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	1863		1583				1770	1863			1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	0	9	0	0	0	14	11	0	0	8	3
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	0	0	0	3
Lane Group Flow (vph)	10	0	1	0	0	0	14	11	0	0	8	0
Turn Type	Perm		Perm	Prot		Perm	Split	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8		2	2			6	
Permitted Phases	4		4			8			2	6		6
Actuated Green, G (s)	1.7		1.7				1.7	1.7			1.3	1.3
Effective Green, g (s)	1.7		1.7				1.7	1.7			1.3	1.3
Actuated g/C Ratio	0.09		0.09				0.09	0.09			0.07	0.07
Clearance Time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	160		136				152	160			122	104
v/s Ratio Prot							c0.01	0.01			c0.00	
v/s Ratio Perm	c0.01		0.00									0.00
v/c Ratio	0.06		0.01				0.09	0.07			0.07	0.00
Uniform Delay, d1	8.3		8.2				8.3	8.3			8.6	8.6
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	0.2		0.0				0.3	0.2			0.2	0.0
Delay (s)	8.4		8.2				8.6	8.5			8.9	8.6
Level of Service	A		A				A	A			A	A
Approach Delay (s)		8.3			0.0			8.5			8.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	-1.15		
Actuated Cycle Length (s)	19.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

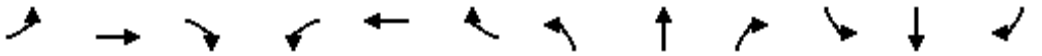


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	10	20	235	10	77	30	354	65	30	846	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	11	21	247	11	81	32	373	68	32	891	32
RTOR Reduction (vph)	0	0	20	0	0	62	0	0	46	0	0	22
Lane Group Flow (vph)	32	11	1	247	11	19	32	373	22	32	891	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.4	3.3	3.3	12.3	13.2	13.2	2.4	18.0	18.0	2.4	18.0	18.0
Effective Green, g (s)	2.4	3.3	3.3	12.3	13.2	13.2	2.4	18.0	18.0	2.4	18.0	18.0
Actuated g/C Ratio	0.04	0.06	0.06	0.22	0.24	0.24	0.04	0.32	0.32	0.04	0.32	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	76	110	93	389	439	373	76	1634	509	76	1634	509
v/s Ratio Prot	0.02	c0.01		c0.14	0.01		c0.02	0.07		0.02	c0.18	
v/s Ratio Perm			0.00			0.01			0.01			0.01
v/c Ratio	0.42	0.10	0.01	0.63	0.03	0.05	0.42	0.23	0.04	0.42	0.55	0.02
Uniform Delay, d1	26.1	24.9	24.8	19.8	16.5	16.6	26.1	13.9	13.1	26.1	15.6	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.4	0.1	3.4	0.0	0.1	3.7	0.1	0.0	3.7	0.4	0.0
Delay (s)	29.9	25.3	24.9	23.2	16.5	16.6	29.9	14.0	13.1	29.9	16.0	13.0
Level of Service	C	C	C	C	B	B	C	B	B	C	B	B
Approach Delay (s)		27.4			21.4			14.9			16.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

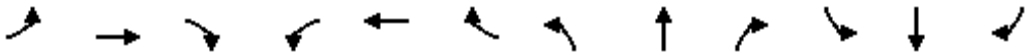
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	0	17	0	0	0	12	4	0	0	6	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Lane Util. Factor	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770		1583				1770	1863			1863	1583
Flt Permitted	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	1770		1583				1770	1863			1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	0	19	0	0	0	13	4	0	0	7	20
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	19
Lane Group Flow (vph)	16	0	6	0	0	0	13	4	0	0	7	1
Turn Type	Prot		Perm	Prot		Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.6		7.3				0.5	7.2			1.7	1.7
Effective Green, g (s)	0.6		7.3				0.5	7.2			1.7	1.7
Actuated g/C Ratio	0.02		0.30				0.02	0.29			0.07	0.07
Clearance Time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	43		471				36	547			129	109
v/s Ratio Prot	c0.01						c0.01	0.00			c0.00	
v/s Ratio Perm			c0.00									0.00
v/c Ratio	0.37		0.01				0.36	0.01			0.05	0.01
Uniform Delay, d1	11.8		6.1				11.8	6.1			10.6	10.6
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	5.4		0.0				6.1	0.0			0.2	0.0
Delay (s)	17.1		6.1				17.9	6.1			10.8	10.7
Level of Service	B		A				B	A			B	B
Approach Delay (s)		11.1			0.0			15.2			10.7	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	24.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



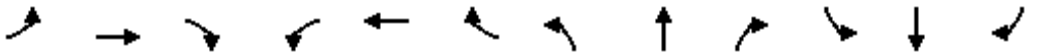
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	4	455	120	3	0	123	522	30	0	976	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00		0.97	0.91	1.00		0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863		3433	5085	1583		5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863		3433	5085	1583		5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	4	479	126	3	0	129	549	32	0	1027	1
RTOR Reduction (vph)	0	0	323	0	0	0	0	0	18	0	0	1
Lane Group Flow (vph)	1	4	156	126	3	0	129	549	14	0	1027	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.9	13.2	13.2	5.9	18.2		5.9	27.9	27.9		17.0	17.0
Effective Green, g (s)	0.9	13.2	13.2	5.9	18.2		5.9	27.9	27.9		17.0	17.0
Actuated g/C Ratio	0.01	0.21	0.21	0.10	0.29		0.10	0.45	0.45		0.27	0.27
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	50	397	337	327	547		327	2288	712		1394	434
v/s Ratio Prot	0.00	0.00		c0.04	c0.00		c0.04	0.11			c0.20	
v/s Ratio Perm			c0.10						0.01			0.00
v/c Ratio	0.02	0.01	0.46	0.39	0.01		0.39	0.24	0.02		0.74	0.00
Uniform Delay, d1	30.1	19.2	21.3	26.3	15.5		26.4	10.5	9.5		20.5	16.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.0	1.0	0.8	0.0		0.8	0.1	0.0		2.1	0.0
Delay (s)	30.3	19.3	22.3	27.1	15.5		27.2	10.6	9.5		22.5	16.3
Level of Service	C	B	C	C	B		C	B	A		C	B
Approach Delay (s)		22.3			26.8			13.5			22.5	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



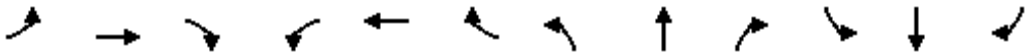
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	49	81	187	20	22	28	246	151	28	290	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	4.3	4.3	3.0	3.2	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1824	1583		1782	1583	1770	1863	1583	1770	3536	
Flt Permitted		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1824	1583		1782	1583	1770	1863	1583	1770	3536	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	54	90	208	22	24	31	273	168	31	322	2
RTOR Reduction (vph)	0	0	78	0	0	15	0	0	119	0	1	0
Lane Group Flow (vph)	0	93	12	0	230	9	31	273	49	31	323	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			
Actuated Green, G (s)		6.9	6.9		15.7	15.7	2.0	15.6	15.6	2.0	16.7	
Effective Green, g (s)		7.9	7.9		16.7	16.7	3.0	16.6	16.6	3.0	17.7	
Actuated g/C Ratio		0.14	0.14		0.29	0.29	0.05	0.29	0.29	0.05	0.31	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3	5.3	4.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		251	217		518	460	92	538	457	92	1088	
v/s Ratio Prot		c0.05			c0.13		c0.02	c0.15		0.02	0.09	
v/s Ratio Perm			0.01			0.01			0.03			
v/c Ratio		0.37	0.06		0.44	0.02	0.34	0.51	0.11	0.34	0.30	
Uniform Delay, d1		22.5	21.6		16.6	14.6	26.3	17.0	15.0	26.3	15.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.2	0.0	0.8	0.3	0.0	0.8	0.1	
Delay (s)		22.9	21.6		16.8	14.6	27.1	17.3	15.0	27.1	15.3	
Level of Service		C	C		B	B	C	B	B	C	B	
Approach Delay (s)		22.2			16.6			17.1			16.3	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	13.3
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



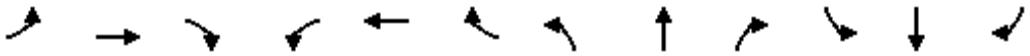
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	108	1	127	155	3	0	173	118	0	177	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1770	1860		1770	1858			1863	1583		1863	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1770	1860		1770	1858			1863	1583		1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	152	120	1	141	172	3	0	192	131	0	197	174
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	102	0	0	0
Lane Group Flow (vph)	152	121	0	141	174	0	0	192	29	0	197	174
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	13.7	13.7		13.6	13.6			16.9	16.9		17.0	79.8
Effective Green, g (s)	14.7	14.7		14.6	14.6			17.9	17.9		18.0	79.8
Actuated g/C Ratio	0.18	0.18		0.18	0.18			0.22	0.22		0.23	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			5.0	5.0		5.0	
Lane Grp Cap (vph)	326	343		324	340			418	355		420	1583
v/s Ratio Prot	c0.09	0.07		0.08	c0.09			c0.10			c0.11	
v/s Ratio Perm									0.02			0.11
v/c Ratio	0.47	0.35		0.44	0.51			0.46	0.08		0.47	0.11
Uniform Delay, d1	29.0	28.4		28.9	29.4			26.8	24.5		26.8	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	0.5		0.7	1.0			1.7	0.2		1.7	0.1
Delay (s)	29.8	28.9		29.6	30.4			28.4	24.7		28.5	0.1
Level of Service	C	C		C	C			C	C		C	A
Approach Delay (s)		29.4			30.0			26.9			15.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	14.6
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



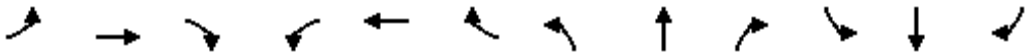
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	247	68	20	223	18	114	18	20	3	16	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00		1.00			0.96	1.00		0.99	
Satd. Flow (prot)		1858	1583		1838			1786	1583		1784	
Flt Permitted		0.98	1.00		0.97			0.73	1.00		0.97	
Satd. Flow (perm)		1831	1583		1791			1368	1583		1737	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	274	76	22	248	20	127	20	22	3	18	8
RTOR Reduction (vph)	0	0	33	0	4	0	0	0	16	0	6	0
Lane Group Flow (vph)	0	288	43	0	286	0	0	147	6	0	23	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		18.2	18.2		18.2			7.9	7.9		7.9	
Effective Green, g (s)		19.2	19.2		19.2			8.9	8.9		8.9	
Actuated g/C Ratio		0.56	0.56		0.56			0.26	0.26		0.26	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1025	886		1003			355	411		451	
v/s Ratio Prot												
v/s Ratio Perm		0.16	0.03		c0.16			c0.11	0.00		0.01	
v/c Ratio		0.28	0.05		0.29			0.41	0.01		0.05	
Uniform Delay, d1		3.9	3.4		4.0			10.5	9.4		9.5	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.1	0.0		0.1			0.3	0.0		0.0	
Delay (s)		4.1	3.4		4.1			10.8	9.4		9.5	
Level of Service		A	A		A			B	A		A	
Approach Delay (s)		3.9			4.1			10.6			9.5	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	34.3	Sum of lost time (s)	6.2
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



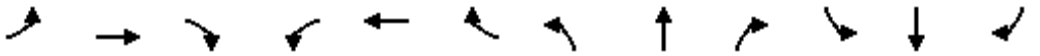
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	284	9	10	339	9	12	4	17	2	6	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2			3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.99	
Flt Protected		1.00			1.00			0.96	1.00		0.99	
Satd. Flow (prot)		1854			1854			1794	1583		1819	
Flt Permitted		1.00			0.99			0.79	1.00		0.94	
Satd. Flow (perm)		1851			1840			1470	1583		1729	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	316	10	11	377	10	13	4	19	2	7	1
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	16	0	1	0
Lane Group Flow (vph)	0	328	0	0	397	0	0	17	3	0	9	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		25.5			25.5			4.4	4.4		4.4	
Effective Green, g (s)		26.5			26.5			5.4	5.4		5.4	
Actuated g/C Ratio		0.70			0.70			0.14	0.14		0.14	
Clearance Time (s)		4.2			4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.5			2.5			2.0	2.0		2.0	
Lane Grp Cap (vph)		1287			1280			208	224		245	
v/s Ratio Prot												
v/s Ratio Perm		0.18			c0.22			c0.01	0.00		0.01	
v/c Ratio		0.25			0.31			0.08	0.01		0.04	
Uniform Delay, d1		2.1			2.3			14.2	14.1		14.1	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.1			0.1			0.1	0.0		0.0	
Delay (s)		2.2			2.4			14.3	14.1		14.1	
Level of Service		A			A			B	B		B	
Approach Delay (s)		2.2			2.4			14.2			14.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	3.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	38.1	Sum of lost time (s)	6.2
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



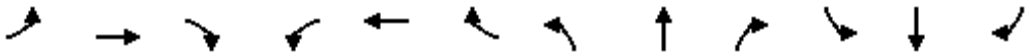
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	185	17	172	246	3	43	14	294	4	12	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0			3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.89			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1839		1770	1860			1642			1817	
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.94	
Satd. Flow (perm)	1770	1839		1770	1860			1593			1734	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	206	19	191	273	3	48	16	327	4	13	2
RTOR Reduction (vph)	0	4	0	0	1	0	0	179	0	0	1	0
Lane Group Flow (vph)	19	221	0	191	275	0	0	212	0	0	18	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	0.9	14.2		7.8	21.1			10.6			10.6	
Effective Green, g (s)	1.9	15.2		8.8	22.1			11.6			11.6	
Actuated g/C Ratio	0.04	0.34		0.20	0.49			0.26			0.26	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0			4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0			2.0	
Lane Grp Cap (vph)	75	624		348	918			412			449	
v/s Ratio Prot	0.01	c0.12		c0.11	0.15							
v/s Ratio Perm								c0.13			0.01	
v/c Ratio	0.25	0.35		0.55	0.30			0.52			0.04	
Uniform Delay, d1	20.8	11.1		16.2	6.8			14.2			12.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.7	0.3		1.0	0.1			0.5			0.0	
Delay (s)	21.4	11.4		17.2	6.9			14.7			12.4	
Level of Service	C	B		B	A			B			B	
Approach Delay (s)		12.2			11.1			14.7			12.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	44.8	Sum of lost time (s)	9.2
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



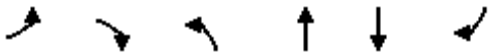
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	84	154	44	65	10	172	381	10	16	784	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	2.0	2.6	3.9	3.0	1.6	2.9
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1820	1583		1826	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1820	1583		1826	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	93	171	49	72	11	191	423	11	18	871	27
RTOR Reduction (vph)	0	0	140	0	0	9	0	0	6	0	0	17
Lane Group Flow (vph)	0	177	31	0	121	2	191	423	5	18	871	10
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)		15.8	15.8		14.8	14.8	14.6	39.9	39.9	5.6	32.9	32.9
Effective Green, g (s)		16.8	16.8		15.8	15.8	15.6	42.2	40.9	6.6	35.2	33.9
Actuated g/C Ratio		0.18	0.18		0.17	0.17	0.17	0.45	0.44	0.07	0.38	0.36
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.9	4.9	4.0	3.9	3.9
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)		329	286		310	269	297	1606	696	126	1339	577
v/s Ratio Prot		c0.10			c0.07		c0.11	0.12		0.01	c0.25	
v/s Ratio Perm			0.02			0.00			0.00			0.01
v/c Ratio		0.54	0.11		0.39	0.01	0.64	0.26	0.01	0.14	0.65	0.02
Uniform Delay, d1		34.6	31.8		34.3	32.1	36.1	15.8	14.6	40.5	23.8	18.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.9	0.1		0.3	0.0	3.5	0.1	0.0	0.2	1.3	0.0
Delay (s)		35.4	31.9		34.6	32.1	39.7	15.9	14.6	40.7	25.1	18.9
Level of Service		D	C		C	C	D	B	B	D	C	B
Approach Delay (s)		33.7			34.4			23.1			25.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



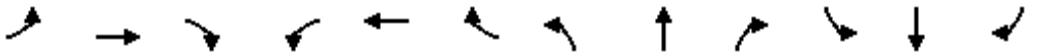
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	194	0	0	340	151	0	0	0	82	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Lane Util. Factor	1.00	0.95			1.00	1.00				0.95	0.95	
Frt	1.00	1.00			1.00	0.85				1.00	0.94	
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.97	
Satd. Flow (prot)	1770	3539			1863	1583				1681	1610	
Flt Permitted	0.95	1.00			1.00	1.00				0.76	0.86	
Satd. Flow (perm)	1770	3539			1863	1583				1340	1421	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	216	0	0	378	168	0	0	0	91	0	24
RTOR Reduction (vph)	0	0	0	0	0	114	0	0	0	0	19	0
Lane Group Flow (vph)	13	216	0	0	378	54	0	0	0	59	37	0
Turn Type	Prot			Perm		Perm	Perm			Perm		
Protected Phases	7	4			8			5			6	
Permitted Phases				8		8	5			6		
Actuated Green, G (s)	0.9	22.0			17.1	17.1				10.3	10.3	
Effective Green, g (s)	0.9	22.0			17.1	17.1				10.3	10.3	
Actuated g/C Ratio	0.02	0.42			0.32	0.32				0.19	0.19	
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Vehicle Extension (s)	2.0	3.8			3.8	3.8				2.0	2.0	
Lane Grp Cap (vph)	30	1472			602	512				261	277	
v/s Ratio Prot	c0.01	0.06			c0.20							
v/s Ratio Perm						0.03				c0.04	0.03	
v/c Ratio	0.43	0.15			0.63	0.11				0.23	0.13	
Uniform Delay, d1	25.7	9.6			15.2	12.5				17.9	17.6	
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2	3.6	0.1			2.3	0.1				0.2	0.1	
Delay (s)	29.4	9.7			17.5	12.7				18.1	17.7	
Level of Service	C	A			B	B				B	B	
Approach Delay (s)		10.8			16.0			0.0			17.9	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	52.9	Sum of lost time (s)	24.6
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	395	459	247	135	28	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.98	1.00	1.00
Satd. Flow (prot)	1770	1583	1681	1742	1863	1583
Flt Permitted	0.95	1.00	0.74	0.90	1.00	1.00
Satd. Flow (perm)	1770	1583	1304	1600	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	439	510	274	150	31	170
RTOR Reduction (vph)	0	284	0	0	0	112
Lane Group Flow (vph)	439	226	205	219	31	58
Turn Type		custom	Perm			Perm
Protected Phases				2	6	
Permitted Phases	4	4	2			6
Actuated Green, G (s)	16.3	16.3	12.5	12.5	12.5	12.5
Effective Green, g (s)	16.3	16.3	12.5	12.5	12.5	12.5
Actuated g/C Ratio	0.44	0.44	0.34	0.34	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.8	3.8	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	784	701	443	543	633	538
v/s Ratio Prot					0.02	
v/s Ratio Perm	c0.25	0.14	c0.16	0.14		0.04
v/c Ratio	0.56	0.32	0.46	0.40	0.05	0.11
Uniform Delay, d1	7.6	6.7	9.5	9.3	8.2	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.3	0.3	0.2	0.0	0.0
Delay (s)	8.6	7.0	9.8	9.5	8.2	8.4
Level of Service	A	A	A	A	A	A
Approach Delay (s)	7.8			9.6	8.3	
Approach LOS	A			A	A	

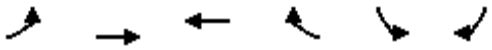
Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	36.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	416	386	184	819	88	636	249	260	66	243	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1554	3433	5085	1555	3433	3539	1558	3433	3539	1558
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1554	3433	5085	1555	3433	3539	1558	3433	3539	1558
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	462	429	204	910	98	707	277	289	73	270	9
RTOR Reduction (vph)	0	0	345	0	0	66	0	0	185	0	0	7
Lane Group Flow (vph)	9	462	84	204	910	32	707	277	104	73	270	2
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.8	15.9	15.9	13.3	27.4	27.4	21.4	30.1	30.1	7.1	15.8	15.8
Effective Green, g (s)	2.8	18.9	16.9	14.3	30.4	28.4	22.4	33.5	31.1	8.1	19.2	16.8
Actuated g/C Ratio	0.03	0.22	0.20	0.17	0.35	0.33	0.26	0.39	0.36	0.09	0.22	0.19
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	111	1112	304	568	1789	511	890	1372	561	322	786	303
v/s Ratio Prot	0.00	0.09		c0.06	c0.18		c0.21	0.08		0.02	c0.08	
v/s Ratio Perm			0.05			0.02			0.07			0.00
v/c Ratio	0.08	0.42	0.28	0.36	0.51	0.06	0.79	0.20	0.19	0.23	0.34	0.01
Uniform Delay, d1	40.6	29.0	29.5	32.0	22.1	19.9	29.9	17.6	19.0	36.3	28.3	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.4	0.7	0.1	0.3	0.1	4.6	0.1	0.3	0.1	0.5	0.0
Delay (s)	40.7	29.4	30.3	32.1	22.4	20.0	34.5	17.7	19.3	36.4	28.8	28.1
Level of Service	D	C	C	C	C	B	C	B	B	D	C	C
Approach Delay (s)		29.9			23.9			27.4			30.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	8.6
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

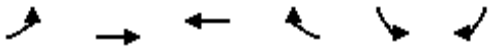


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	7	734	1085	58	23	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	8	816	1206	64	26	4
RTOR Reduction (vph)	0	0	0	18	0	4
Lane Group Flow (vph)	8	816	1206	46	26	0
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	43.4	38.7	38.7	5.1	5.1
Effective Green, g (s)	1.7	46.4	41.7	41.7	6.1	6.1
Actuated g/C Ratio	0.03	0.79	0.71	0.71	0.10	0.10
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	51	4033	3625	1128	185	165
v/s Ratio Prot	0.00	c0.16	c0.24		c0.01	
v/s Ratio Perm				0.03		0.00
v/c Ratio	0.16	0.20	0.33	0.04	0.14	0.00
Uniform Delay, d1	27.7	1.5	3.2	2.5	23.8	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.1	0.0	0.1	0.0
Delay (s)	28.2	1.5	3.2	2.5	23.9	23.5
Level of Service	C	A	A	A	C	C
Approach Delay (s)		1.8	3.2		23.9	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	2.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	781	7	155	1129	19	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	868	8	172	1254	21	121
RTOR Reduction (vph)	0	5	0	0	0	98
Lane Group Flow (vph)	868	3	172	1254	21	23
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	21.2	21.2	11.8	37.0	10.3	10.3
Effective Green, g (s)	24.2	24.2	12.8	40.0	11.3	11.3
Actuated g/C Ratio	0.42	0.42	0.22	0.69	0.19	0.19
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	2114	658	389	3495	344	307
v/s Ratio Prot	c0.17		c0.10	0.25	0.01	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.41	0.01	0.44	0.36	0.06	0.08
Uniform Delay, d1	12.0	10.0	19.6	3.8	19.1	19.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.3	0.1	0.0	0.0
Delay (s)	12.2	10.0	19.9	3.9	19.2	19.2
Level of Service	B	A	B	A	B	B
Approach Delay (s)	12.1			5.8	19.2	
Approach LOS	B			A	B	

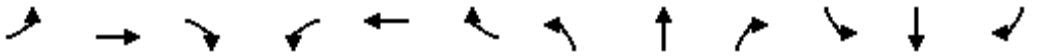
Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	9.9
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	21	843	1238	161	94	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1540	1770	1560
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1540	1770	1560
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	937	1376	179	104	11
RTOR Reduction (vph)	0	0	0	63	0	9
Lane Group Flow (vph)	23	937	1376	116	104	2
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.0	40.6	35.6	35.6	11.0	11.0
Effective Green, g (s)	2.0	43.6	38.6	38.6	12.0	12.0
Actuated g/C Ratio	0.03	0.70	0.62	0.62	0.19	0.19
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	57	3547	3140	951	340	300
v/s Ratio Prot	c0.01	0.18	c0.27		c0.06	
v/s Ratio Perm				0.08		0.00
v/c Ratio	0.40	0.26	0.44	0.12	0.31	0.01
Uniform Delay, d1	29.7	3.5	6.3	4.9	21.7	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.1	0.1	0.1	0.2	0.0
Delay (s)	31.4	3.6	6.4	5.0	21.9	20.4
Level of Service	C	A	A	A	C	C
Approach Delay (s)		4.2	6.2		21.7	
Approach LOS		A	A		C	

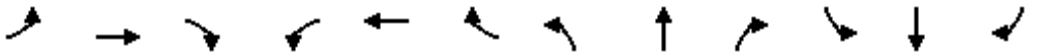
Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	62.5	Sum of lost time (s)	9.9
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



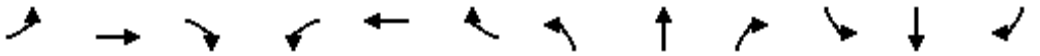
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	215	0	0	0	29	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)						4.0				4.0		
Lane Util. Factor						1.00				1.00		
Frt						0.85				1.00		
Flt Protected						1.00				0.95		
Satd. Flow (prot)						1583				1770		
Flt Permitted						1.00				0.95		
Satd. Flow (perm)						1583				1770		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	0	239	0	0	0	32	0	0
RTOR Reduction (vph)	0	0	0	0	0	188	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	51	0	0	0	32	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)						3.9				0.6		
Effective Green, g (s)						3.9				0.6		
Actuated g/C Ratio						0.21				0.03		
Clearance Time (s)						4.0				4.0		
Vehicle Extension (s)						3.0				3.0		
Lane Grp Cap (vph)						339				58		
v/s Ratio Prot										c0.02		
v/s Ratio Perm						c0.03						
v/c Ratio						0.15				0.55		
Uniform Delay, d1						5.8				8.7		
Progression Factor						1.00				1.00		
Incremental Delay, d2						0.2				10.9		
Delay (s)						6.0				19.5		
Level of Service						A				B		
Approach Delay (s)		0.0			6.0			0.0			19.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	18.2	Sum of lost time (s)	13.7
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



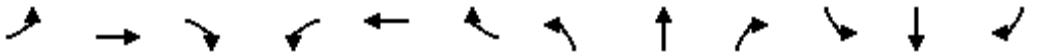
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	15	33	16	40	32	69	182	155	4	28	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.3	4.3		3.0		3.0	4.7		3.0	4.7	4.7
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.95		1.00	0.93		1.00	1.00	0.85
Flt Protected		0.98	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1827	1583		1754		1770	3295		1770	3539	1583
Flt Permitted		0.98	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1827	1583		1754		1770	3295		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	17	37	18	44	36	77	202	172	4	31	2
RTOR Reduction (vph)	0	0	32	0	17	0	0	102	0	0	0	1
Lane Group Flow (vph)	0	28	5	0	81	0	77	272	0	4	31	1
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	2	2		1	1		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)		6.6	6.6		9.6		6.0	23.2		0.9	18.1	18.1
Effective Green, g (s)		7.6	7.6		10.6		7.0	24.2		1.9	19.1	19.1
Actuated g/C Ratio		0.13	0.13		0.18		0.12	0.41		0.03	0.32	0.32
Clearance Time (s)		5.3	5.3		4.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)		234	203		314		209	1345		57	1140	510
v/s Ratio Prot		c0.02			c0.05		c0.04	c0.08		0.00	0.01	
v/s Ratio Perm			0.00									0.00
v/c Ratio		0.12	0.02		0.26		0.37	0.20		0.07	0.03	0.00
Uniform Delay, d1		22.9	22.6		21.0		24.1	11.3		27.8	13.7	13.6
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1	0.0		0.2		0.4	0.1		0.2	0.0	0.0
Delay (s)		23.0	22.6		21.1		24.5	11.5		28.0	13.8	13.6
Level of Service		C	C		C		C	B		C	B	B
Approach Delay (s)		22.8			21.1			13.7			15.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	59.3	Sum of lost time (s)	10.3
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



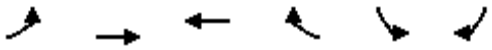
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	5	20	33	1	2	173	386	64	0	168	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9	3.9	4.0	4.7	4.7		4.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00		0.95	
Frt		0.93			1.00	0.85	1.00	1.00	0.85		1.00	
Flt Protected		0.99			0.95	1.00	0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1699			1776	1583	1770	3539	1583		3531	
Flt Permitted		0.99			0.95	1.00	0.95	1.00	1.00		1.00	
Satd. Flow (perm)		1699			1776	1583	1770	3539	1583		3531	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	6	22	37	1	2	192	429	71	0	187	3
RTOR Reduction (vph)	0	20	0	0	0	2	0	0	30	0	1	0
Lane Group Flow (vph)	0	20	0	0	38	0	192	429	41	0	189	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	2	2		1	1		3	8		7	4	
Permitted Phases						1			8			
Actuated Green, G (s)		4.5			4.7	4.7	11.0	31.7	31.7		16.7	
Effective Green, g (s)		4.5			4.7	5.7	11.0	32.7	32.7		17.7	
Actuated g/C Ratio		0.08			0.08	0.10	0.20	0.58	0.58		0.31	
Clearance Time (s)		4.9			4.9	4.9	4.0	5.7	5.7		5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5	4.5		4.5	
Lane Grp Cap (vph)		136			148	160	345	2052	918		1108	
v/s Ratio Prot		c0.01			c0.02		c0.11	c0.12			0.05	
v/s Ratio Perm						0.00			0.03			
v/c Ratio		0.15			0.26	0.00	0.56	0.21	0.04		0.17	
Uniform Delay, d1		24.2			24.2	22.8	20.5	5.7	5.1		14.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.2			0.3	0.0	1.1	0.1	0.0		0.1	
Delay (s)		24.3			24.5	22.8	21.6	5.8	5.1		14.2	
Level of Service		C			C	C	C	A	A		B	
Approach Delay (s)		24.3			24.5			10.1			14.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	13.8
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



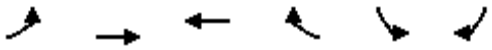
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	160	104	456	338	129	261	1132	284	127	725	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5	3.5	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	178	116	507	376	143	290	1258	316	141	806	29
RTOR Reduction (vph)	0	0	94	0	0	96	0	0	195	0	0	19
Lane Group Flow (vph)	17	178	22	507	376	47	290	1258	121	141	806	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.6	15.3	15.3	17.1	28.5	28.5	12.2	32.4	32.4	9.0	29.2	29.2
Effective Green, g (s)	4.6	17.8	17.8	18.1	31.0	31.0	13.2	35.8	35.8	10.0	32.6	32.6
Actuated g/C Ratio	0.05	0.19	0.19	0.19	0.33	0.33	0.14	0.38	0.38	0.11	0.35	0.35
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	169	674	301	665	1173	525	485	1947	606	367	1234	552
v/s Ratio Prot	0.00	0.05		c0.15	c0.11		c0.08	c0.25		0.04	0.23	
v/s Ratio Perm			0.01			0.03			0.08			0.01
v/c Ratio	0.10	0.26	0.07	0.76	0.32	0.09	0.60	0.65	0.20	0.38	0.65	0.02
Uniform Delay, d1	42.5	32.3	31.1	35.7	23.4	21.5	37.7	23.7	19.3	38.9	25.7	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.4	0.2	4.7	0.2	0.1	1.3	1.0	0.3	0.2	1.6	0.0
Delay (s)	42.6	32.6	31.3	40.3	23.6	21.6	39.0	24.6	19.6	39.1	27.3	20.0
Level of Service	D	C	C	D	C	C	D	C	B	D	C	B
Approach Delay (s)		32.7			31.6			26.0			28.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



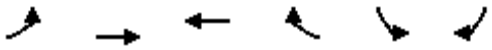
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	19	576	832	205	105	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	21	640	924	228	117	16
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	21	640	924	228	117	16
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.0	36.5	31.8	56.0	9.5	56.0
Effective Green, g (s)	2.0	39.5	34.8	56.0	11.0	56.0
Actuated g/C Ratio	0.04	0.71	0.62	1.00	0.20	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	63	2496	2199	1583	348	1583
v/s Ratio Prot	0.01	0.18	c0.26		c0.07	
v/s Ratio Perm				c0.14		0.01
v/c Ratio	0.33	0.26	0.42	0.14	0.34	0.01
Uniform Delay, d1	26.3	3.0	5.4	0.0	19.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.2	0.2	0.2	0.0
Delay (s)	27.5	3.0	5.7	0.2	19.6	0.0
Level of Service	C	A	A	A	B	A
Approach Delay (s)		3.8	4.6		17.2	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	5.2
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	12	667	1086	43	54	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		0.98	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3519		1748	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3519		1748	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	741	1207	48	60	12
RTOR Reduction (vph)	0	0	2	0	10	0
Lane Group Flow (vph)	13	741	1253	0	62	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.1	44.1	39.0		6.4	
Effective Green, g (s)	2.1	46.8	41.7		7.4	
Actuated g/C Ratio	0.03	0.78	0.69		0.12	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	62	2751	2438		215	
v/s Ratio Prot	0.01	c0.21	c0.36		c0.04	
v/s Ratio Perm						
v/c Ratio	0.21	0.27	0.51		0.29	
Uniform Delay, d1	28.2	1.9	4.4		24.0	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.6	0.1	0.3		0.3	
Delay (s)	28.9	2.0	4.7		24.3	
Level of Service	C	A	A		C	
Approach Delay (s)		2.4	4.7		24.3	
Approach LOS		A	A		C	

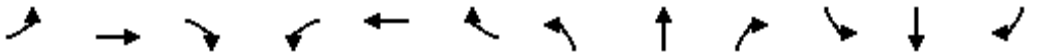
Intersection Summary			
HCM Average Control Delay	4.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	39	680	1105	59	40	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0		3.0	3.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3506		1770	1550
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3506		1770	1550
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	43	756	1228	66	44	20
RTOR Reduction (vph)	0	0	3	0	0	18
Lane Group Flow (vph)	43	756	1291	0	44	2
Confl. Peds. (#/hr)				10		10
Turn Type	Prot					Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	3.9	43.5	35.6		6.4	6.4
Effective Green, g (s)	4.9	46.2	38.3		7.4	7.4
Actuated g/C Ratio	0.08	0.76	0.63		0.12	0.12
Clearance Time (s)	4.0	6.7	6.7		4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3		2.0	2.0
Lane Grp Cap (vph)	143	2698	2216		216	189
v/s Ratio Prot	0.02	c0.21	c0.37		c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.30	0.28	0.58		0.20	0.01
Uniform Delay, d1	26.2	2.2	6.5		23.9	23.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.1	0.5		0.2	0.0
Delay (s)	26.7	2.3	7.0		24.1	23.4
Level of Service	C	A	A		C	C
Approach Delay (s)		3.6	7.0		23.9	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	11.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	588	151	340	986	322	254	305	198	250	272	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	2.0	2.7	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	3185	1400	3090	3185	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	3185	1400	3090	3185	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	97	653	168	378	1096	358	282	339	220	278	302	161
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	97	653	168	378	1096	358	282	339	220	278	302	161
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	8.1	47.1	120.0	19.1	58.1	120.0	15.1	20.0	120.0	15.4	19.3	120.0
Effective Green, g (s)	9.1	50.1	120.0	20.1	61.1	120.0	16.1	23.0	120.0	16.4	22.3	120.0
Actuated g/C Ratio	0.08	0.42	1.00	0.17	0.51	1.00	0.13	0.19	1.00	0.14	0.19	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		3.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	234	1330	1400	518	1622	1400	415	610	1400	422	592	1400
v/s Ratio Prot	0.03	c0.21		0.12	c0.34		c0.09	c0.11		c0.09	0.09	
v/s Ratio Perm			0.12			0.26			0.16			0.12
v/c Ratio	0.41	0.49	0.12	0.73	0.68	0.26	0.68	0.56	0.16	0.66	0.51	0.12
Uniform Delay, d1	52.9	25.6	0.0	47.4	22.0	0.0	49.5	43.9	0.0	49.1	43.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.3	0.2	4.3	1.3	0.4	3.5	1.6	0.2	2.8	1.2	0.2
Delay (s)	53.3	26.9	0.2	51.7	23.4	0.4	53.0	45.5	0.2	52.0	45.2	0.2
Level of Service	D	C	A	D	C	A	D	D	A	D	D	A
Approach Delay (s)		24.8			24.7			36.2			37.9	
Approach LOS		C			C			D			D	

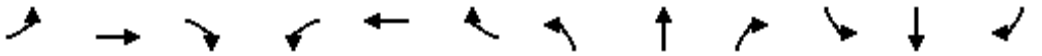
Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1015	4	142	1652	19	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	1.7	1.7
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3537		1770	3539	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3537		1770	3539	1770	1542
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1128	4	158	1836	21	169
RTOR Reduction (vph)	0	0	0	0	0	154
Lane Group Flow (vph)	1132	0	158	1836	21	15
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	82.6		15.1	101.7	9.6	9.6
Effective Green, g (s)	84.6		15.1	103.7	10.9	10.9
Actuated g/C Ratio	0.70		0.13	0.86	0.09	0.09
Clearance Time (s)	5.7		4.0	5.7	3.0	3.0
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2494		223	3058	161	140
v/s Ratio Prot	0.32		c0.09	c0.52	c0.01	
v/s Ratio Perm						0.01
v/c Ratio	0.45		0.71	0.60	0.13	0.11
Uniform Delay, d1	7.7		50.3	2.3	50.2	50.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6		8.1	0.9	0.1	0.1
Delay (s)	8.3		58.5	3.2	50.3	50.2
Level of Service	A		E	A	D	D
Approach Delay (s)	8.3			7.6	50.2	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

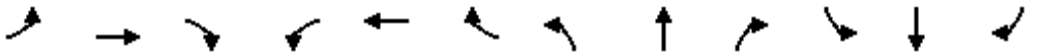


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	15	37	155	35	86	85	896	95	89	638	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	1499		1593	1498		1593	4577	1425	1593	3185	1425
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1593	1499		1593	1498		1593	4577	1425	1593	3185	1425
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	17	41	172	39	96	94	996	106	99	709	2
RTOR Reduction (vph)	0	37	0	0	68	0	0	0	46	0	0	1
Lane Group Flow (vph)	11	21	0	172	67	0	94	996	60	99	709	1
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	1.4	10.6		14.8	24.0		11.4	64.8	64.8	11.8	64.2	64.2
Effective Green, g (s)	2.4	12.1		15.8	25.5		12.4	67.8	67.8	12.8	67.2	67.2
Actuated g/C Ratio	0.02	0.10		0.13	0.21		0.10	0.56	0.56	0.11	0.56	0.56
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	32	151		210	318		165	2586	805	170	1784	798
v/s Ratio Prot	0.01	0.01		c0.11	c0.04		0.06	0.22		c0.06	c0.22	
v/s Ratio Perm									0.04			0.00
v/c Ratio	0.34	0.14		0.82	0.21		0.57	0.39	0.07	0.58	0.40	0.00
Uniform Delay, d1	58.0	49.2		50.7	39.0		51.3	14.5	11.9	51.1	14.9	11.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.4		20.4	0.3		2.7	0.4	0.2	3.3	0.3	0.0
Delay (s)	60.4	49.6		71.1	39.2		53.9	14.9	12.0	54.3	15.2	11.6
Level of Service	E	D		E	D		D	B	B	D	B	B
Approach Delay (s)		51.3			57.1			17.8			20.0	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	781	61	247	264	57	366
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	4.0	6.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	868	68	274	293	63	407
RTOR Reduction (vph)	0	25	0	0	0	53
Lane Group Flow (vph)	868	43	274	293	63	354
Turn Type		Perm	Prot			pt+ov
Protected Phases	4		3	8	2	2 3
Permitted Phases		4				
Actuated Green, G (s)	48.3	48.3	18.2	70.5	18.8	41.0
Effective Green, g (s)	48.3	48.3	18.2	70.5	18.8	41.0
Actuated g/C Ratio	0.49	0.49	0.18	0.71	0.19	0.41
Clearance Time (s)	6.0	6.0	4.0	6.0	4.0	
Vehicle Extension (s)	5.3	5.3	2.0	5.3	2.0	
Lane Grp Cap (vph)	906	770	324	1323	335	654
v/s Ratio Prot	c0.47		c0.15	0.16	0.04	c0.22
v/s Ratio Perm		0.03				
v/c Ratio	0.96	0.06	0.85	0.22	0.19	0.54
Uniform Delay, d1	24.5	13.5	39.2	5.0	33.8	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.7	0.1	17.3	0.2	0.1	0.5
Delay (s)	45.2	13.5	56.5	5.2	33.9	22.5
Level of Service	D	B	E	A	C	C
Approach Delay (s)	42.9			30.0	24.1	
Approach LOS	D			C	C	

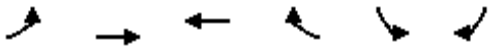
Intersection Summary			
HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	99.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	637	262	4	166	134	383	13	626	153	186	675	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		2.0	3.7	3.7	2.0	4.0	4.0	3.0	4.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3465		1770	3471	1553	1770	3539	1583	1736	3539	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1736	3465		1770	3471	1553	1770	3539	1583	1736	3539	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	708	291	4	184	149	426	14	696	170	207	750	348
RTOR Reduction (vph)	0	1	0	0	0	217	0	0	124	0	0	93
Lane Group Flow (vph)	708	294	0	184	149	209	14	696	46	207	750	255
Heavy Vehicles (%)	4%	4%	2%	2%	4%	4%	2%	2%	2%	4%	2%	4%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	41.1	38.1		16.5	13.5	13.5	2.8	30.5	30.5	15.4	43.1	84.2
Effective Green, g (s)	42.1	41.1		18.5	15.8	15.8	4.8	32.5	32.5	16.4	45.1	88.2
Actuated g/C Ratio	0.35	0.34		0.15	0.13	0.13	0.04	0.27	0.27	0.14	0.37	0.73
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Vehicle Extension (s)	3.0	4.7		2.0	4.8	4.8	2.0	4.8	4.8	2.0	4.7	3.0
Lane Grp Cap (vph)	607	1182		272	455	204	71	955	427	236	1325	1137
v/s Ratio Prot	c0.41	0.08		0.10	0.04		0.01	c0.20		c0.12	0.21	0.08
v/s Ratio Perm						c0.13			0.03			0.08
v/c Ratio	1.17	0.25		0.68	0.33	1.02	0.20	0.73	0.11	0.88	0.57	0.22
Uniform Delay, d1	39.2	28.6		48.2	47.5	52.4	56.0	40.0	33.1	51.1	29.9	5.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	91.8	0.2		5.2	0.8	69.2	0.5	3.3	0.2	27.8	0.8	0.1
Delay (s)	131.0	28.8		53.3	48.3	121.6	56.5	43.3	33.3	78.8	30.8	5.3
Level of Service	F	C		D	D	F	E	D	C	E	C	A
Approach Delay (s)		101.0			90.7			41.6			31.6	
Approach LOS		F			F			D			C	

Intersection Summary			
HCM Average Control Delay	62.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.5	Sum of lost time (s)	13.7
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

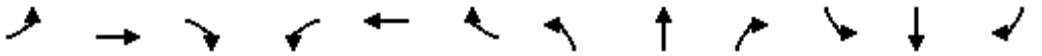
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	223	544	587	119	66	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1478	1770	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	248	604	652	132	73	168
RTOR Reduction (vph)	0	0	0	85	0	101
Lane Group Flow (vph)	248	604	652	47	73	67
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	15.3	38.6	19.3	19.3	7.6	22.9
Effective Green, g (s)	16.3	41.6	22.3	22.3	8.6	24.9
Actuated g/C Ratio	0.26	0.66	0.36	0.36	0.14	0.40
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	460	1236	1259	526	243	1240
v/s Ratio Prot	c0.14	c0.32	0.18		c0.04	0.01
v/s Ratio Perm				0.03		0.01
v/c Ratio	0.54	0.49	0.52	0.09	0.30	0.05
Uniform Delay, d1	20.0	5.3	16.0	13.4	24.3	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.4	0.5	0.1	0.3	0.0
Delay (s)	20.6	5.7	16.5	13.5	24.6	11.6
Level of Service	C	A	B	B	C	B
Approach Delay (s)		10.0	16.0		15.6	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	12.5
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

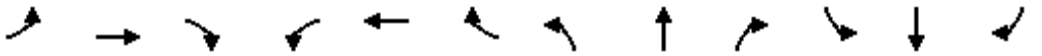
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	487	41	80	602	36	155	0	181	143	0	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0		2.0	4.0	5.0	2.0		3.0	3.7		3.7
Lane Util. Factor	1.00	1.00		1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	1836		1770	3539	1557	1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	1836		1770	3539	1557	1770		1583	1770		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	121	541	46	89	669	40	172	0	201	159	0	128
RTOR Reduction (vph)	0	3	0	0	0	28	0	0	164	0	0	107
Lane Group Flow (vph)	121	584	0	89	669	12	172	0	37	159	0	21
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot			Prot		Perm	Prot		custom	Prot		custom
Protected Phases	7	4		3	8		5			6		
Permitted Phases						8			5			6
Actuated Green, G (s)	11.4	25.9		7.0	21.5	21.5	13.2		13.2	10.5		10.5
Effective Green, g (s)	13.4	27.9		9.0	23.5	22.5	15.2		14.2	12.5		12.5
Actuated g/C Ratio	0.18	0.37		0.12	0.31	0.29	0.20		0.19	0.16		0.16
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0		4.0	5.7		5.7
Vehicle Extension (s)	2.0	4.8		2.0	4.8	4.8	2.0		2.0	2.0		2.0
Lane Grp Cap (vph)	311	671		209	1090	459	353		295	290		259
v/s Ratio Prot	0.07	c0.32		0.05	c0.19		c0.10			c0.09		
v/s Ratio Perm						0.01			0.02			0.01
v/c Ratio	0.39	0.87		0.43	0.61	0.03	0.49		0.13	0.55		0.08
Uniform Delay, d1	27.8	22.5		31.3	22.5	19.1	27.1		25.9	29.3		27.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.3	12.7		0.5	1.4	0.0	0.4		0.1	1.1		0.0
Delay (s)	28.1	35.2		31.8	24.0	19.2	27.5		26.0	30.4		27.1
Level of Service	C	D		C	C	B	C		C	C		C
Approach Delay (s)		34.0			24.6			26.7			28.9	
Approach LOS		C			C			C			C	

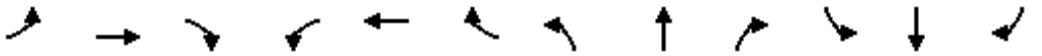
Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	13.7
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	168	360	92	254	126	684	1055	79	145	1142	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	164	187	400	102	282	140	760	1172	88	161	1269	134
RTOR Reduction (vph)	0	0	332	0	0	120	0	0	42	0	0	0
Lane Group Flow (vph)	164	187	68	102	282	20	760	1172	46	161	1269	134
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	14.7	17.4	17.4	11.3	15.0	15.0	28.3	56.8	56.8	14.5	43.0	120.0
Effective Green, g (s)	15.7	20.4	20.4	12.3	17.5	17.5	29.3	59.8	59.8	15.5	46.0	120.0
Actuated g/C Ratio	0.13	0.17	0.17	0.10	0.15	0.15	0.24	0.50	0.50	0.13	0.38	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	232	602	269	181	516	231	838	1764	789	229	1949	1583
v/s Ratio Prot	c0.09	0.05		0.06	c0.08		c0.22	c0.33		0.09	0.25	
v/s Ratio Perm			0.04			0.01			0.03			0.08
v/c Ratio	0.71	0.31	0.25	0.56	0.55	0.09	0.91	0.66	0.06	0.70	0.65	0.08
Uniform Delay, d1	49.9	43.6	43.2	51.3	47.6	44.3	44.0	22.6	15.6	50.0	30.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	0.5	0.9	2.4	2.1	0.3	13.3	2.0	0.1	7.7	0.9	0.1
Delay (s)	57.7	44.1	44.0	53.7	49.6	44.7	57.4	24.6	15.7	57.8	31.3	0.1
Level of Service	E	D	D	D	D	D	E	C	B	E	C	A
Approach Delay (s)		47.1			49.1			36.5			31.4	
Approach LOS		D			D			D			C	

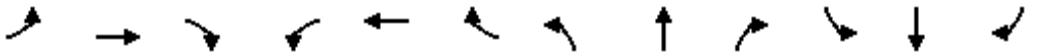
Intersection Summary			
HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	153	0	59	0	0	0	28	663	0	0	703	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0				3.0	2.6			2.6	3.0
Lane Util. Factor	0.97		1.00				1.00	0.95			0.95	1.00
Frpb, ped/bikes	1.00		0.99				1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	3433		1562				1770	3539			3539	1548
Flt Permitted	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	3433		1562				1770	3539			3539	1548
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	170	0	66	0	0	0	31	737	0	0	781	10
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	170	0	66	0	0	0	31	737	0	0	781	10
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free				Prot					Free
Protected Phases	4						5	2			6	
Permitted Phases			Free									Free
Actuated Green, G (s)	9.3		45.9				2.2	26.6			20.4	45.9
Effective Green, g (s)	10.3		45.9				3.2	30.0			23.8	45.9
Actuated g/C Ratio	0.22		1.00				0.07	0.65			0.52	1.00
Clearance Time (s)	4.0						4.0	6.0			6.0	
Vehicle Extension (s)	2.0						2.0	3.9			3.9	
Lane Grp Cap (vph)	770		1562				123	2313			1835	1548
v/s Ratio Prot	c0.05						0.02	c0.21			c0.22	
v/s Ratio Perm			0.04									0.01
v/c Ratio	0.22		0.04				0.25	0.32			0.43	0.01
Uniform Delay, d1	14.5		0.0				20.2	3.5			6.8	0.0
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	0.1		0.1				0.4	0.1			0.2	0.0
Delay (s)	14.6		0.1				20.6	3.6			7.0	0.0
Level of Service	B		A				C	A			A	A
Approach Delay (s)		10.5			0.0			4.3			7.0	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	8.2
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

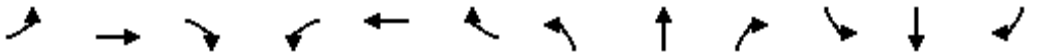
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	62	19	46	0	458	1	344	49	274	875	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0		3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.97		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.98	1.00		0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1835	1546	3433		1562	1770	3539	1562	1770	1863	1538
Flt Permitted		0.99	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1835	1546	3433		1562	1770	3539	1562	1770	1863	1538
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	69	21	51	0	509	1	382	54	304	972	9
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	99	3	51	0	509	1	382	54	304	972	7
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	3	3		4			5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)		8.1	8.1	6.0		72.8	1.1	23.1	72.8	17.6	39.6	39.6
Effective Green, g (s)		9.1	9.1	7.0		72.8	2.1	24.1	72.8	18.6	40.6	40.6
Actuated g/C Ratio		0.12	0.12	0.10		1.00	0.03	0.33	1.00	0.26	0.56	0.56
Clearance Time (s)		4.0	4.0	4.0			4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0	2.0			2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)		229	193	330		1562	51	1172	1562	452	1039	858
v/s Ratio Prot		0.05		0.01			0.00	0.11		c0.17	c0.52	
v/s Ratio Perm			0.00			c0.33			0.03			0.00
v/c Ratio		0.43	0.01	0.15		0.33	0.02	0.33	0.03	0.67	0.94	0.01
Uniform Delay, d1		29.5	27.9	30.2		0.0	34.3	18.3	0.0	24.4	14.9	7.2
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5	0.0	0.1		0.6	0.1	0.3	0.0	3.1	15.2	0.0
Delay (s)		29.9	27.9	30.3		0.6	34.4	18.6	0.0	27.5	30.1	7.2
Level of Service		C	C	C		A	C	B	A	C	C	A
Approach Delay (s)		29.6			3.3			16.3			29.3	
Approach LOS		C			A			B			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

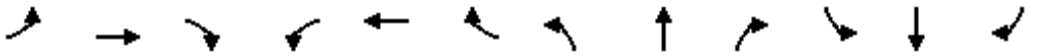
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	2	69	15	2	0	109	546	16	4	387	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1788	1478		1783		1770	3539	1583	1770	3539	1583
Flt Permitted		0.96	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1788	1478		1783		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	2	77	17	2	0	121	607	18	4	430	9
RTOR Reduction (vph)	0	0	68	0	0	0	0	0	7	0	0	5
Lane Group Flow (vph)	0	12	9	0	19	0	121	607	11	4	430	4
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		3.9	3.9		0.7		7.1	26.0	26.0	0.6	19.5	19.5
Effective Green, g (s)		5.8	5.8		2.6		8.1	29.0	29.0	1.6	22.5	22.5
Actuated g/C Ratio		0.12	0.12		0.05		0.16	0.59	0.59	0.03	0.46	0.46
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1	2.0	4.1	4.1
Lane Grp Cap (vph)		210	174		94		290	2078	929	57	1612	721
v/s Ratio Prot		c0.01			c0.01		c0.07	c0.17		0.00	0.12	
v/s Ratio Perm			0.01						0.01			0.00
v/c Ratio		0.06	0.05		0.20		0.42	0.29	0.01	0.07	0.27	0.01
Uniform Delay, d1		19.4	19.4		22.4		18.5	5.1	4.2	23.2	8.3	7.3
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.0	0.0		0.4		0.4	0.1	0.0	0.2	0.1	0.0
Delay (s)		19.4	19.4		22.8		18.9	5.2	4.3	23.4	8.5	7.3
Level of Service		B	B		C		B	A	A	C	A	A
Approach Delay (s)		19.4			22.8			7.4			8.6	
Approach LOS		B			C			A			A	

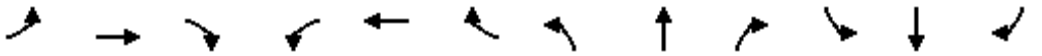
Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	7.4
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	3	10	36	2	71	105	803	20	20	518	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1783	1583		1778	1583	1770	3526		1770	3531	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1783	1583		1778	1583	1770	3526		1770	3531	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	3	11	40	2	79	117	892	22	22	576	9
RTOR Reduction (vph)	0	0	10	0	0	65	0	1	0	0	1	0
Lane Group Flow (vph)	0	29	1	0	42	14	117	913	0	22	584	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		5.0	5.0		12.1	12.1	8.0	35.4		2.2	29.6	
Effective Green, g (s)		6.0	6.0		13.1	13.1	9.0	38.4		3.2	32.6	
Actuated g/C Ratio		0.08	0.08		0.18	0.18	0.12	0.53		0.04	0.45	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		148	131		322	286	220	1870		78	1590	
v/s Ratio Prot		c0.02			c0.02		c0.07	c0.26		0.01	0.17	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.20	0.01		0.13	0.05	0.53	0.49		0.28	0.37	
Uniform Delay, d1		31.0	30.5		24.9	24.5	29.7	10.8		33.5	13.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.1	0.0	1.2	0.3		0.7	0.2	
Delay (s)		31.2	30.5		24.9	24.5	31.0	11.1		34.2	13.4	
Level of Service		C	C		C	C	C	B		C	B	
Approach Delay (s)		31.0			24.7			13.4			14.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

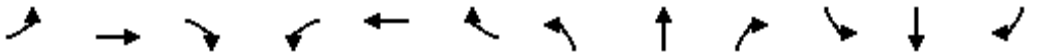


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	294	545	47	243	83	311	484	33	119	649	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1486	1856	3592	1473	3601	3592	1477	1837	3556	1462
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1486	1856	3592	1473	3601	3592	1477	1837	3556	1462
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	327	606	52	270	92	346	538	37	132	721	31
RTOR Reduction (vph)	0	0	184	0	0	70	0	0	23	0	0	16
Lane Group Flow (vph)	29	327	422	52	270	22	346	538	14	132	721	15
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.2	15.4	30.5	7.5	17.7	17.7	15.1	30.0	30.0	12.6	27.5	27.5
Effective Green, g (s)	6.2	18.4	32.5	8.5	20.7	20.7	16.1	33.0	33.0	13.6	30.5	30.5
Actuated g/C Ratio	0.07	0.22	0.38	0.10	0.24	0.24	0.19	0.39	0.39	0.16	0.36	0.36
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	136	778	569	186	876	359	683	1396	574	294	1277	525
v/s Ratio Prot	0.02	0.09	c0.14	c0.03	0.08		0.10	0.15		0.07	c0.20	
v/s Ratio Perm			0.14			0.02			0.01			0.01
v/c Ratio	0.21	0.42	0.74	0.28	0.31	0.06	0.51	0.39	0.03	0.45	0.56	0.03
Uniform Delay, d1	37.1	28.7	22.6	35.4	26.2	24.6	30.8	18.7	16.0	32.3	21.9	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.6	4.5	0.3	0.3	0.1	0.2	0.3	0.0	0.4	0.8	0.0
Delay (s)	37.3	29.3	27.1	35.7	26.6	24.8	31.1	19.0	16.1	32.7	22.7	17.6
Level of Service	D	C	C	D	C	C	C	B	B	C	C	B
Approach Delay (s)		28.2			27.3			23.4			24.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	11.7
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1135	47	68	768	53	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	1.3	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3518		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3518		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1261	52	76	853	59	98
RTOR Reduction (vph)	2	0	0	0	0	83
Lane Group Flow (vph)	1311	0	76	853	59	15
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	37.7		6.4	49.8	9.4	9.4
Effective Green, g (s)	40.4		7.4	52.5	10.4	10.4
Actuated g/C Ratio	0.60		0.11	0.78	0.15	0.15
Clearance Time (s)	5.7		4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2115		195	2765	274	245
v/s Ratio Prot	c0.37		c0.04	0.24	c0.03	
v/s Ratio Perm						0.01
v/c Ratio	0.62		0.39	0.31	0.22	0.06
Uniform Delay, d1	8.5		27.8	2.1	24.8	24.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7		0.5	0.1	0.1	0.0
Delay (s)	9.2		28.3	2.2	25.0	24.3
Level of Service	A		C	A	C	C
Approach Delay (s)	9.2			4.4	24.5	
Approach LOS	A			A	C	

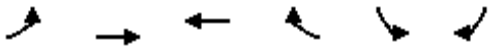
Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	67.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	332	728	43	204	73	280	933	36	82	915	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1562	1770	3539	1562	3433	3539	1562	1770	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1562	1770	3539	1562	3433	3539	1562	1770	3539	1562
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	116	369	809	48	227	81	311	1037	40	91	1017	50
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	116	369	809	48	227	81	311	1037	40	91	1017	50
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.5	21.3	125.0	8.2	17.4	125.0	15.7	61.7	125.0	14.1	60.1	125.0
Effective Green, g (s)	13.5	24.0	125.0	9.2	20.1	125.0	16.7	64.7	125.0	15.1	63.1	125.0
Actuated g/C Ratio	0.11	0.19	1.00	0.07	0.16	1.00	0.13	0.52	1.00	0.12	0.50	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	191	679	1562	130	569	1562	459	1832	1562	214	1786	1562
v/s Ratio Prot	c0.07	c0.10		0.03	0.06		c0.09	c0.29		0.05	c0.29	
v/s Ratio Perm			c0.52			0.05			0.03			0.03
v/c Ratio	0.61	0.54	0.52	0.37	0.40	0.05	0.68	0.57	0.03	0.43	0.57	0.03
Uniform Delay, d1	53.2	45.6	0.0	55.1	47.0	0.0	51.6	20.6	0.0	50.9	21.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	1.3	1.2	0.6	0.8	0.1	3.1	1.3	0.0	0.5	0.5	0.0
Delay (s)	56.9	46.9	1.2	55.8	47.8	0.1	54.7	21.8	0.0	51.4	22.0	0.0
Level of Service	E	D	A	E	D	A	D	C	A	D	C	A
Approach Delay (s)		19.2			38.0			28.6			23.4	
Approach LOS		B			D			C			C	

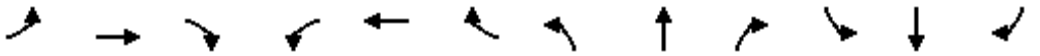
Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	3.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	107	540	626	397	220	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1511	1736	1537
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1511	1736	1537
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	119	600	696	441	244	99
RTOR Reduction (vph)	0	0	0	238	0	55
Lane Group Flow (vph)	119	600	696	203	244	44
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	7.3	28.5	28.8	28.8	16.4	23.7
Effective Green, g (s)	8.3	30.5	30.8	30.8	19.4	29.7
Actuated g/C Ratio	0.12	0.46	0.46	0.46	0.29	0.44
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	216	1585	1600	697	504	683
v/s Ratio Prot	c0.07	0.17	c0.20		c0.14	0.01
v/s Ratio Perm				0.13		0.02
v/c Ratio	0.55	0.38	0.43	0.29	0.48	0.06
Uniform Delay, d1	27.5	11.9	12.1	11.2	19.6	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.2	0.2	0.2	0.3	0.0
Delay (s)	29.2	12.1	12.3	11.4	19.8	10.6
Level of Service	C	B	B	B	B	B
Approach Delay (s)		14.9	12.0		17.2	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	4.6
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	726	8	7	994	207	18	1	10	66	3	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00			1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3433		1787	3438	1483	1787	1623			1695	1450
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3433		1787	3438	1483	1787	1623			1695	1450
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	34	807	9	8	1104	230	20	1	11	73	3	47
RTOR Reduction (vph)	0	0	0	0	0	100	0	10	0	0	0	0
Lane Group Flow (vph)	34	816	0	8	1104	130	20	2	0	0	76	47
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	2.4	40.3		0.9	38.8	38.8	6.1	6.1			7.1	7.1
Effective Green, g (s)	3.4	42.3		1.9	40.8	40.8	7.1	7.1			8.1	8.1
Actuated g/C Ratio	0.05	0.59		0.03	0.57	0.57	0.10	0.10			0.11	0.11
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	81	2014		47	1945	839	176	160			190	163
v/s Ratio Prot	c0.02	0.24		0.00	c0.32		c0.01	0.00			c0.04	
v/s Ratio Perm						0.09						0.03
v/c Ratio	0.42	0.40		0.17	0.57	0.16	0.11	0.01			0.40	0.29
Uniform Delay, d1	33.4	8.1		34.3	10.0	7.4	29.6	29.3			29.7	29.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.3	0.1		0.6	0.4	0.1	0.1	0.0			1.4	1.0
Delay (s)	34.7	8.2		35.0	10.4	7.5	29.7	29.3			31.1	30.3
Level of Service	C	A		C	B	A	C	C			C	C
Approach Delay (s)		9.3			10.0			29.6			30.8	
Approach LOS		A			B			C			C	

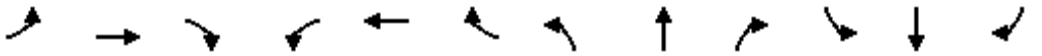
Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	12.7
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	567	257	231	1015	227	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1568	1770	3539	1770	1571
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1568	1770	3539	1770	1571
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	630	286	257	1128	252	267
RTOR Reduction (vph)	0	138	0	0	0	21
Lane Group Flow (vph)	630	148	257	1128	252	246
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	16.7	29.1	16.9	37.6	12.4	29.3
Effective Green, g (s)	18.7	31.1	17.9	39.6	13.4	31.3
Actuated g/C Ratio	0.31	0.52	0.30	0.66	0.22	0.52
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1103	891	528	2336	395	898
v/s Ratio Prot	c0.18	0.04	0.15	c0.32	c0.14	0.08
v/s Ratio Perm		0.06				0.07
v/c Ratio	0.57	0.17	0.49	0.48	0.64	0.27
Uniform Delay, d1	17.3	7.6	17.3	5.1	21.1	8.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	0.3	0.7	2.5	0.1
Delay (s)	18.0	7.6	17.5	5.8	23.6	8.1
Level of Service	B	A	B	A	C	A
Approach Delay (s)	14.8			8.0	15.6	
Approach LOS	B			A	B	

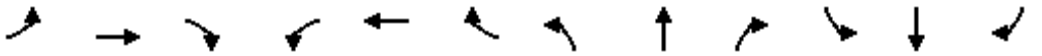
Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



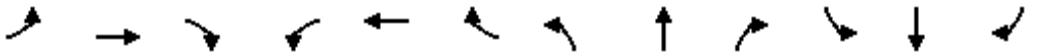
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	913	252	65	1149	35	348	301	24	58	279	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	3.2	3.0	3.0	3.5	3.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	144	1014	280	72	1277	39	387	334	27	64	310	122
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	144	1014	280	72	1277	39	387	334	27	64	310	122
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.2	42.7	120.0	12.7	42.2	120.0	29.6	37.5	120.0	7.7	15.3	120.0
Effective Green, g (s)	14.2	45.2	120.0	13.7	44.7	120.0	30.6	40.0	120.0	8.7	17.8	120.0
Actuated g/C Ratio	0.12	0.38	1.00	0.11	0.37	1.00	0.26	0.33	1.00	0.07	0.15	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	4.3		2.0	4.3		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	209	1915	1583	202	1894	1583	451	1180	1583	128	525	1583
v/s Ratio Prot	c0.08	0.20		0.04	c0.25		c0.22	0.09		0.04	c0.09	
v/s Ratio Perm			0.18			0.02			0.02			0.08
v/c Ratio	0.69	0.53	0.18	0.36	0.67	0.02	0.86	0.28	0.02	0.50	0.59	0.08
Uniform Delay, d1	50.8	29.1	0.0	49.1	31.5	0.0	42.6	29.4	0.0	53.6	47.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.3	1.1	0.2	0.4	1.1	0.0	14.4	0.2	0.0	1.1	2.0	0.1
Delay (s)	58.1	30.2	0.2	49.5	32.7	0.0	57.0	29.7	0.0	54.7	49.7	0.1
Level of Service	E	C	A	D	C	A	E	C	A	D	D	A
Approach Delay (s)		27.1			32.6			42.7			38.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.7
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



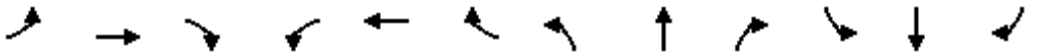
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	162	140	60	155	132	193	978	75	102	707	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	138	180	156	67	172	147	214	1087	83	113	786	41
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	138	180	156	67	172	147	214	1087	83	113	786	41
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.6	19.0	120.0	7.8	13.2	120.0	18.9	61.1	120.0	12.0	54.2	120.0
Effective Green, g (s)	14.6	21.5	120.0	8.8	15.7	120.0	19.9	63.6	120.0	13.0	56.7	120.0
Actuated g/C Ratio	0.12	0.18	1.00	0.07	0.13	1.00	0.17	0.53	1.00	0.11	0.47	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	215	634	1583	130	463	1583	294	2695	1583	192	2403	1583
v/s Ratio Prot	c0.08	0.05		0.04	c0.05		c0.12	c0.21		c0.06	0.15	
v/s Ratio Perm			0.10			0.09			0.05			0.03
v/c Ratio	0.64	0.28	0.10	0.52	0.37	0.09	0.73	0.40	0.05	0.59	0.33	0.03
Uniform Delay, d1	50.2	42.6	0.0	53.5	47.6	0.0	47.5	16.9	0.0	51.0	19.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.3	0.1	1.4	0.7	0.1	7.4	0.5	0.1	3.0	0.1	0.0
Delay (s)	55.0	42.9	0.1	55.0	48.3	0.1	54.9	17.3	0.1	53.9	19.9	0.0
Level of Service	E	D	A	D	D	A	D	B	A	D	B	A
Approach Delay (s)		32.4			31.1			22.1			23.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



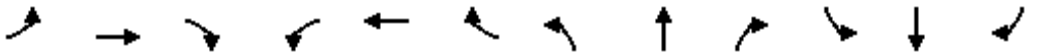
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	871	12	1	531	10	6	19	2	14	4	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7		2.0	4.7		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.96	1.00
Satd. Flow (prot)	1770	3532		1770	3529		1770	1838			1791	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.96	1.00
Satd. Flow (perm)	1770	3532		1770	3529		1770	1838			1791	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	70	968	13	1	590	11	7	21	2	16	4	41
RTOR Reduction (vph)	0	0	0	0	1	0	0	2	0	0	0	36
Lane Group Flow (vph)	70	981	0	1	600	0	7	21	0	0	20	5
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	6.3	36.8		0.9	30.4		3.0	3.0			6.5	6.5
Effective Green, g (s)	7.3	37.8		1.9	31.4		4.0	4.0			7.5	7.5
Actuated g/C Ratio	0.11	0.59		0.03	0.49		0.06	0.06			0.12	0.12
Clearance Time (s)	4.0	5.7		3.0	5.7		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	202	2089		53	1734		111	115			210	186
v/s Ratio Prot	c0.04	c0.28		0.00	0.17		0.00	c0.01			c0.01	
v/s Ratio Perm												0.00
v/c Ratio	0.35	0.47		0.02	0.35		0.06	0.18			0.10	0.03
Uniform Delay, d1	26.1	7.4		30.1	10.0		28.2	28.4			25.2	25.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.4	0.3		0.1	0.2		0.1	0.3			0.1	0.0
Delay (s)	26.5	7.7		30.1	10.2		28.3	28.7			25.2	25.0
Level of Service	C	A		C	B		C	C			C	C
Approach Delay (s)		8.9			10.2			28.6			25.1	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



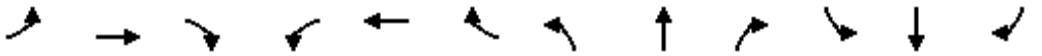
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	364	48	43	331	8	27	3	9	10	8	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97			0.97	1.00
Satd. Flow (prot)	1770	3478		1770	3539	1583		1743			1813	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97			0.97	1.00
Satd. Flow (perm)	1770	3478		1770	3539	1583		1743			1813	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	404	53	48	368	9	30	3	10	11	9	6
RTOR Reduction (vph)	0	6	0	0	0	4	0	9	0	0	0	5
Lane Group Flow (vph)	29	451	0	48	368	5	0	34	0	0	20	1
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	1.8	28.2		3.9	30.3	30.3		3.0			3.9	3.9
Effective Green, g (s)	2.8	31.2		4.9	33.3	31.3		4.0			4.9	4.9
Actuated g/C Ratio	0.05	0.55		0.09	0.59	0.55		0.07			0.09	0.09
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0			4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0			2.0	2.0
Lane Grp Cap (vph)	87	1914		153	2078	874		123			157	137
v/s Ratio Prot	0.02	c0.13		c0.03	0.10			c0.02			c0.01	
v/s Ratio Perm						0.00						0.00
v/c Ratio	0.33	0.24		0.31	0.18	0.01		0.27			0.13	0.00
Uniform Delay, d1	26.0	6.6		24.3	5.4	5.7		25.0			23.9	23.7
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.8	0.2		0.4	0.1	0.0		0.4			0.1	0.0
Delay (s)	26.9	6.8		24.8	5.5	5.7		25.4			24.1	23.7
Level of Service	C	A		C	A	A		C			C	C
Approach Delay (s)		8.0			7.7			25.4			24.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	11.7
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



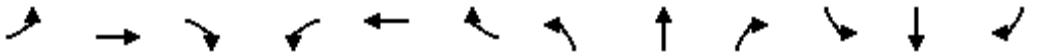
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	272	62	38	160	180	90	1003	29	222	936	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	108	302	69	42	178	200	100	1114	32	247	1040	170
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	108	302	69	42	178	200	100	1114	32	247	1040	170
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.5	24.6	120.0	8.2	20.3	120.0	13.4	47.5	120.0	20.3	54.4	120.0
Effective Green, g (s)	13.5	27.1	120.0	9.2	22.8	120.0	14.4	50.5	120.0	21.3	57.4	120.0
Actuated g/C Ratio	0.11	0.23	1.00	0.08	0.19	1.00	0.12	0.42	1.00	0.18	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	199	421	1583	136	672	1583	212	1489	1583	314	1693	1583
v/s Ratio Prot	c0.06	c0.16		0.02	0.05		0.06	c0.31		c0.14	0.29	
v/s Ratio Perm			0.04			0.13			0.02			0.11
v/c Ratio	0.54	0.72	0.04	0.31	0.26	0.13	0.47	0.75	0.02	0.79	0.61	0.11
Uniform Delay, d1	50.3	42.9	0.0	52.4	41.5	0.0	49.3	29.4	0.0	47.2	23.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	5.8	0.1	1.3	0.2	0.2	1.7	2.1	0.0	12.2	1.7	0.1
Delay (s)	53.3	48.7	0.1	53.7	41.7	0.2	50.9	31.5	0.0	59.4	24.8	0.1
Level of Service	D	D	A	D	D	A	D	C	A	E	C	A
Approach Delay (s)		42.7			23.1			32.2			27.8	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	320	0	0	495	267	1	1	0	217	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0			3.0	3.0
Lane Util. Factor		0.95			1.00	1.00		1.00			1.00	1.00
Frt		1.00			1.00	0.85		1.00			1.00	0.85
Flt Protected		1.00			1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)		3539			1863	1583		1817			1770	1583
Flt Permitted		1.00			1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)		3539			1863	1583		1863			1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	356	0	0	550	297	1	1	0	241	0	14
RTOR Reduction (vph)	0	0	0	0	0	51	0	0	0	0	0	11
Lane Group Flow (vph)	0	356	0	0	550	246	0	2	0	0	241	3
Turn Type						pt+ov	Perm			Split		Perm
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases							3					4
Actuated Green, G (s)		68.0			58.8	81.8		1.0			18.1	18.1
Effective Green, g (s)		69.0			59.8	82.8		2.0			19.1	19.1
Actuated g/C Ratio		0.69			0.60	0.83		0.02			0.19	0.19
Clearance Time (s)		4.9			4.9			4.0			4.0	4.0
Vehicle Extension (s)		3.1			3.1			2.0			2.0	2.0
Lane Grp Cap (vph)		2442			1114	1311		37			338	302
v/s Ratio Prot		c0.10			c0.30	0.16					c0.14	
v/s Ratio Perm								c0.00				0.00
v/c Ratio		0.15			0.49	0.19		0.05			0.71	0.01
Uniform Delay, d1		5.3			11.5	1.8		48.1			37.9	32.8
Progression Factor		1.00			0.79	1.88		1.00			1.00	1.00
Incremental Delay, d2		0.1			0.3	0.1		0.2			5.8	0.0
Delay (s)		5.5			9.4	3.4		48.3			43.7	32.8
Level of Service		A			A	A		D			D	C
Approach Delay (s)		5.5			7.3			48.3			43.1	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

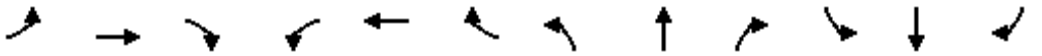


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	580	9	3	730	0	19	0	19	57	5	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9	2.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00			0.93		1.00	0.90	
Flt Protected		1.00	1.00	0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1695		1770	1667	
Flt Permitted		1.00	1.00	0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1695		1770	1667	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	644	10	3	811	0	21	0	21	63	6	14
RTOR Reduction (vph)	0	0	3	0	0	0	0	20	0	0	13	0
Lane Group Flow (vph)	0	644	7	3	811	0	0	22	0	63	7	0
Turn Type			Perm	Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases			2									
Actuated Green, G (s)		70.2	70.2	1.6	74.8			4.8		7.5	7.5	
Effective Green, g (s)		71.2	71.2	2.6	75.8			5.8		8.5	8.5	
Actuated g/C Ratio		0.71	0.71	0.03	0.76			0.06		0.08	0.08	
Clearance Time (s)		4.9	4.9	3.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1	3.1	2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		2520	1127	46	2683			98		150	142	
v/s Ratio Prot		0.18		0.00	c0.23			c0.01		c0.04	0.00	
v/s Ratio Perm			0.00									
v/c Ratio		0.26	0.01	0.07	0.30			0.23		0.42	0.05	
Uniform Delay, d1		5.1	4.2	47.5	3.8			45.0		43.4	42.0	
Progression Factor		1.97	2.01	1.05	0.81			1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0	0.2	0.3			0.4		0.7	0.1	
Delay (s)		10.1	8.4	50.1	3.4			45.4		44.1	42.1	
Level of Service		B	A	D	A			D		D	D	
Approach Delay (s)		10.0			3.5			45.4			43.6	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

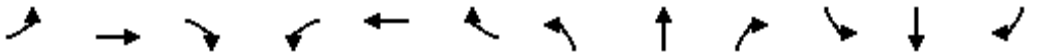
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	650	15	110	291	38	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		2.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3527		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3527		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	722	17	122	323	42	139
RTOR Reduction (vph)	2	0	0	0	0	122
Lane Group Flow (vph)	737	0	122	323	42	17
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	26.1		6.9	36.0	5.1	5.1
Effective Green, g (s)	27.1		7.9	37.0	6.1	6.1
Actuated g/C Ratio	0.54		0.16	0.74	0.12	0.12
Clearance Time (s)	4.9		3.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	1912		280	2619	216	193
v/s Ratio Prot	c0.21		c0.07	0.09	c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.39		0.44	0.12	0.19	0.09
Uniform Delay, d1	6.6		19.0	1.9	19.7	19.5
Progression Factor	1.57		0.99	0.99	1.00	1.00
Incremental Delay, d2	0.1		0.3	0.1	0.2	0.1
Delay (s)	10.5		19.2	1.9	19.9	19.6
Level of Service	B		B	A	B	B
Approach Delay (s)	10.5			6.6	19.6	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



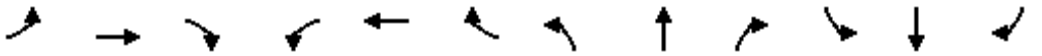
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	726	4	16	1040	112	5	4	12	293	4	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3537		1770	3488			1698		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3537		1770	3488			1698		1681	1687	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	807	4	18	1156	124	6	4	13	326	4	54
RTOR Reduction (vph)	0	0	0	0	6	0	0	13	0	0	0	45
Lane Group Flow (vph)	50	811	0	18	1274	0	0	10	0	166	164	9
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	6.4	60.3		4.8	58.7			2.6		14.8	14.8	14.8
Effective Green, g (s)	7.4	61.3		5.8	59.7			3.6		15.8	15.8	15.8
Actuated g/C Ratio	0.07	0.61		0.06	0.60			0.04		0.16	0.16	0.16
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	131	2168		103	2082			61		266	267	250
v/s Ratio Prot	0.03	c0.23		0.01	c0.37			c0.01		c0.10	0.10	
v/s Ratio Perm												0.01
v/c Ratio	0.38	0.37		0.17	0.61			0.17		0.62	0.61	0.03
Uniform Delay, d1	44.1	9.7		44.8	12.8			46.8		39.3	39.3	35.6
Progression Factor	1.04	1.40		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.5		0.3	0.6			0.5		3.9	3.6	0.0
Delay (s)	46.4	14.0		45.1	13.4			47.2		43.2	42.8	35.7
Level of Service	D	B		D	B			D		D	D	D
Approach Delay (s)		15.9			13.8			47.2			42.0	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



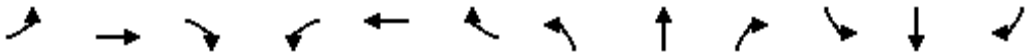
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	977	153	0	1446	1315	0	0	0	258	524	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3			2.9	3.9				3.7	4.3	3.7
Lane Util. Factor		0.95			0.91	0.91				0.95	*0.90	1.00
Frt		0.98			0.96	0.85				1.00	1.00	0.85
Flt Protected		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3467			3265	1441				1681	1673	1583
Flt Permitted		1.00			1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3467			3265	1441				1681	1673	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1086	170	0	1607	1461	0	0	0	287	582	189
RTOR Reduction (vph)	0	0	0	0	29	373	0	0	0	0	0	0
Lane Group Flow (vph)	0	1256	0	0	2104	562	0	0	0	258	611	189
Turn Type						Perm				Split		custom
Protected Phases		2			6					4	4	4
Permitted Phases						6						6
Actuated Green, G (s)		59.1			59.1	59.1				30.7	30.7	89.8
Effective Green, g (s)		60.7			61.1	60.1				32.3	31.7	93.0
Actuated g/C Ratio		0.61			0.61	0.60				0.32	0.32	0.93
Clearance Time (s)		4.9			4.9	4.9				5.3	5.3	5.3
Vehicle Extension (s)		3.8			3.8	3.8				2.0	2.0	2.0
Lane Grp Cap (vph)		2104			1995	866				543	530	1531
v/s Ratio Prot		0.36			c0.64					0.15	c0.37	0.04
v/s Ratio Perm						0.39						0.08
v/c Ratio		0.60			1.05	0.65				0.48	1.15	0.12
Uniform Delay, d1		12.1			19.4	13.0				27.1	34.1	0.3
Progression Factor		1.00			1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		1.3			36.3	1.8				0.2	88.6	0.0
Delay (s)		13.4			55.8	14.9				27.3	122.8	0.3
Level of Service		B			E	B				C	F	A
Approach Delay (s)		13.4			43.3			0.0			77.6	
Approach LOS		B			D			A			E	

Intersection Summary			
HCM Average Control Delay	43.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



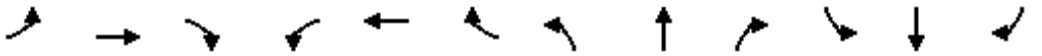
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	1065	0	0	2323	313	0	0	944	0	0	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.9			3.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4796	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4796	1362			1611			2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	189	1183	0	0	2581	348	0	0	1049	0	0	487
RTOR Reduction (vph)	0	0	0	0	2	106	0	0	0	0	0	4
Lane Group Flow (vph)	189	1183	0	0	2614	207	0	0	1049	0	0	483
Turn Type	Prot					Perm			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						6			Free			
Actuated Green, G (s)	13.5	60.0			37.6	37.6			60.0			13.5
Effective Green, g (s)	15.5	60.0			39.6	39.6			60.0			15.5
Actuated g/C Ratio	0.26	1.00			0.66	0.66			1.00			0.26
Clearance Time (s)	4.0	4.9			4.9	4.9						4.0
Vehicle Extension (s)	2.0	3.9			3.8	3.8						2.0
Lane Grp Cap (vph)	457	3539			3165	899			1611			720
v/s Ratio Prot	0.11	0.33			c0.55							0.17
v/s Ratio Perm						0.15			c0.65			
v/c Ratio	0.41	0.33			0.83	0.23			0.65			0.67
Uniform Delay, d1	18.5	0.0			7.6	4.1			0.0			20.0
Progression Factor	1.00	1.00			2.05	1.78			1.00			1.00
Incremental Delay, d2	0.2	0.1			0.9	0.2			2.1			1.9
Delay (s)	18.7	0.1			16.5	7.5			2.1			21.9
Level of Service	B	A			B	A			A			C
Approach Delay (s)		2.6			15.6			2.1			21.9	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	2.9
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	313	1527	308	305	1220	199	475	879	195	216	646	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	5.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3319	5085	1545	3319	5085	1560	3319	5085	1560	3319	5015	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3319	5085	1545	3319	5085	1560	3319	5085	1560	3319	5015	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	348	1697	342	339	1356	221	528	977	217	240	718	60
RTOR Reduction (vph)	0	0	180	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	348	1697	162	339	1356	221	528	977	217	240	770	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	15.9	37.8	37.8	16.0	39.9	120.0	22.0	31.3	120.0	13.2	22.5	
Effective Green, g (s)	16.9	40.8	38.8	17.0	42.9	120.0	23.0	34.3	120.0	14.2	25.5	
Actuated g/C Ratio	0.14	0.34	0.32	0.14	0.36	1.00	0.19	0.29	1.00	0.12	0.21	
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.1	4.1	2.0	3.3		2.0	4.2		2.0	4.5	
Lane Grp Cap (vph)	467	1729	500	470	1818	1560	636	1453	1560	393	1066	
v/s Ratio Prot	0.10	c0.33		0.10	c0.27		c0.16	c0.19		0.07	0.15	
v/s Ratio Perm			0.10			0.14			0.14			
v/c Ratio	0.75	0.98	0.32	0.72	0.75	0.14	0.83	0.67	0.14	0.61	0.72	
Uniform Delay, d1	49.5	39.2	30.7	49.2	33.8	0.0	46.6	37.9	0.0	50.3	44.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.6	17.7	1.7	4.6	1.7	0.2	8.6	1.4	0.2	2.0	2.8	
Delay (s)	55.1	56.9	32.4	53.8	35.5	0.2	55.3	39.3	0.2	52.2	46.7	
Level of Service	E	E	C	D	D	A	E	D	A	D	D	
Approach Delay (s)		53.1			34.7			39.3			48.0	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	44.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

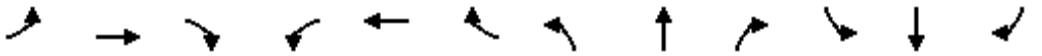


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	1003	58	155	1235	4	26	6	435	8	2	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1762	3616		1711	3538			1791	1583		1790	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (perm)	1762	3616		1711	3538			1791	1583		1790	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	1114	64	172	1372	4	29	7	483	9	2	17
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	208	0	0	16
Lane Group Flow (vph)	19	1176	0	172	1376	0	0	36	275	0	11	1
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	2.9	71.4		19.7	89.9			6.0	25.7		3.5	3.5
Effective Green, g (s)	3.9	73.9		20.7	92.4			7.5	28.7		5.0	5.0
Actuated g/C Ratio	0.03	0.62		0.17	0.77			0.06	0.24		0.04	0.04
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	57	2227		295	2724			112	412		75	62
v/s Ratio Prot	0.01	c0.33		0.10	0.39			0.02	c0.12		c0.01	
v/s Ratio Perm									0.06			0.00
v/c Ratio	0.33	0.53		0.58	0.51			0.32	0.67		0.15	0.01
Uniform Delay, d1	56.8	13.1		45.7	5.2			53.8	41.3		55.4	55.1
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.3		1.9	0.7			0.6	3.1		0.3	0.0
Delay (s)	58.0	13.4		47.6	5.9			54.4	44.5		55.8	55.2
Level of Service	E	B		D	A			D	D		E	E
Approach Delay (s)		14.1			10.5			45.2			55.4	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

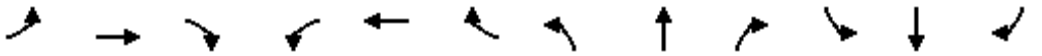
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1353	14	35	1367	23	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3534		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3534		1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1503	16	39	1519	26	40
RTOR Reduction (vph)	0	0	0	0	0	37
Lane Group Flow (vph)	1519	0	39	1519	26	3
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	86.7		5.0	95.7	5.8	5.8
Effective Green, g (s)	88.7		7.0	97.7	7.8	7.8
Actuated g/C Ratio	0.75		0.06	0.82	0.07	0.07
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2634		104	2906	116	104
v/s Ratio Prot	c0.43		0.02	c0.43	c0.01	
v/s Ratio Perm						0.00
v/c Ratio	0.58		0.38	0.52	0.22	0.03
Uniform Delay, d1	6.8		53.9	3.3	52.7	52.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4		0.8	0.7	0.7	0.1
Delay (s)	7.2		54.7	4.0	53.4	52.1
Level of Service	A		D	A	D	D
Approach Delay (s)	7.2			5.3	52.6	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	119.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	369	783	277	267	767	74	385	934	26	203	994	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3486		3433	3539	1551	3433	3539	1551
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3486		3433	3539	1551	3433	3539	1551
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	410	870	308	297	852	82	428	1038	29	226	1104	248
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	14	0	0	115
Lane Group Flow (vph)	410	870	308	297	928	0	428	1038	15	226	1104	133
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	17.7	31.3	120.0	18.0	32.0		15.8	33.3	33.3	18.0	35.9	35.9
Effective Green, g (s)	18.7	32.8	120.0	19.0	33.5		16.8	34.8	34.3	19.0	37.4	36.9
Actuated g/C Ratio	0.16	0.27	1.00	0.16	0.28		0.14	0.29	0.29	0.16	0.31	0.31
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	535	967	1561	544	973		481	1026	443	544	1103	477
v/s Ratio Prot	0.12	c0.25		0.09	c0.27		0.12	c0.29		0.07	c0.31	
v/s Ratio Perm			0.20						0.01			0.09
v/c Ratio	0.77	0.90	0.20	0.55	0.95		0.89	1.01	0.03	0.42	1.00	0.28
Uniform Delay, d1	48.6	42.0	0.0	46.5	42.5		50.7	42.6	30.9	45.5	41.3	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.15	1.28	1.87	1.00	1.00	1.00
Incremental Delay, d2	5.9	11.3	0.3	0.6	18.7		14.5	27.9	0.1	0.2	27.3	0.4
Delay (s)	54.4	53.3	0.3	47.1	61.2		72.6	82.6	57.9	45.7	68.6	31.9
Level of Service	D	D	A	D	E		E	F	E	D	E	C
Approach Delay (s)		43.3			57.8			79.2			59.6	
Approach LOS		D			E			E			E	

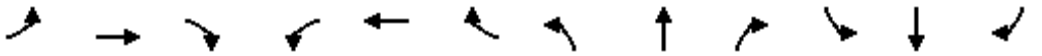
Intersection Summary			
HCM Average Control Delay	59.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	1044	11	46	1108	20	19	9	43	23	15	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3532		1770	3528			1802	1547		1808	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (perm)	1770	3532		1770	3528			1802	1547		1808	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	54	1160	12	51	1231	22	21	10	48	26	17	51
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	45	0	0	48
Lane Group Flow (vph)	54	1172	0	51	1252	0	0	31	3	0	43	3
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	7.1	82.5		6.9	82.3			7.0	7.0		6.3	6.3
Effective Green, g (s)	8.1	84.5		7.9	84.3			8.0	8.0		7.3	7.3
Actuated g/C Ratio	0.07	0.70		0.07	0.70			0.07	0.07		0.06	0.06
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	119	2487		117	2478			120	103		110	96
v/s Ratio Prot	c0.03	0.33		0.03	c0.36			c0.02			c0.02	
v/s Ratio Perm									0.00			0.00
v/c Ratio	0.45	0.47		0.44	0.51			0.26	0.03		0.39	0.03
Uniform Delay, d1	53.8	7.9		53.9	8.2			53.2	52.4		54.2	53.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	0.6		0.9	0.3			0.4	0.0		0.8	0.1
Delay (s)	54.8	8.5		54.9	8.6			53.6	52.4		55.0	53.1
Level of Service	D	A		D	A			D	D		E	D
Approach Delay (s)		10.5			10.4			52.9			54.0	
Approach LOS		B			B			D			D	

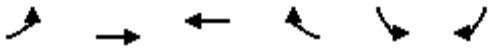
Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



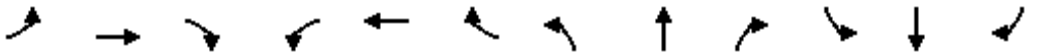
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	975	0	7	1141	14	10	0	5	19	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.8		2.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3533			1718			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.84			0.75	1.00
Satd. Flow (perm)	1770	3539		1770	3533			1492			1390	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	27	1083	0	8	1268	16	11	0	6	21	0	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	6	0	0	0	22
Lane Group Flow (vph)	27	1083	0	8	1284	0	0	11	0	0	21	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	4.4	98.3		1.2	95.1			8.2			8.2	8.2
Effective Green, g (s)	5.4	100.8		2.2	97.6			9.2			9.2	9.2
Actuated g/C Ratio	0.05	0.84		0.02	0.81			0.08			0.08	0.08
Clearance Time (s)	3.0	5.3		3.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	80	2973		32	2874			114			107	121
v/s Ratio Prot	c0.02	0.31		0.00	c0.36							
v/s Ratio Perm								0.01			c0.02	0.00
v/c Ratio	0.34	0.36		0.25	0.45			0.10			0.20	0.02
Uniform Delay, d1	55.6	2.2		58.1	3.3			51.5			51.9	51.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.9	0.3		1.5	0.5			0.3			0.7	0.0
Delay (s)	56.5	2.6		59.6	3.8			51.8			52.6	51.2
Level of Service	E	A		E	A			D			D	D
Approach Delay (s)		3.9			4.1			51.8			51.9	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	5.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.8
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	440	487	521	156	477	709
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	0.99	1.00		0.95	1.00
Satd. Flow (prot)	1610	3353	3417		3433	1583
Flt Permitted	0.95	0.99	1.00		0.95	1.00
Satd. Flow (perm)	1610	3353	3417		3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	489	541	579	173	530	788
RTOR Reduction (vph)	0	0	27	0	0	25
Lane Group Flow (vph)	333	697	725	0	530	763
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	47.0	47.0	26.7		21.0	68.0
Effective Green, g (s)	49.5	49.5	29.2		22.0	73.0
Actuated g/C Ratio	0.46	0.46	0.27		0.20	0.68
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	738	1537	924		699	1111
v/s Ratio Prot	0.21	0.21	c0.21		0.15	c0.31
v/s Ratio Perm						0.17
v/c Ratio	0.45	0.45	0.78		0.76	0.69
Uniform Delay, d1	20.0	20.0	36.5		40.5	10.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	1.0	4.1		4.2	1.4
Delay (s)	22.0	21.0	40.6		44.7	12.0
Level of Service	C	C	D		D	B
Approach Delay (s)		21.3	40.6		25.1	
Approach LOS		C	D		C	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	4.3
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	747	56	34	662	15	49	9	9	21	9	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3	4.3	3.0	3.3			3.0			3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96			0.97	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3527			1553			1800	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.78			0.84	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3527			1250			1562	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	73	830	62	38	736	17	54	10	10	23	10	84
RTOR Reduction (vph)	0	0	9	0	1	0	0	6	0	0	0	72
Lane Group Flow (vph)	73	830	53	38	752	0	0	68	0	0	33	12
Parking (#/hr)								4				
Turn Type	Prot		Perm	Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases			2				4			4		4
Actuated Green, G (s)	6.0	39.7	39.7	3.5	37.2			8.2			8.2	8.2
Effective Green, g (s)	7.0	41.7	40.7	4.5	39.2			9.2			9.2	9.2
Actuated g/C Ratio	0.11	0.64	0.63	0.07	0.61			0.14			0.14	0.14
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3			2.0			2.0	2.0
Lane Grp Cap (vph)	191	1201	996	123	2137			178			222	225
v/s Ratio Prot	c0.04	c0.45		0.02	0.21							
v/s Ratio Perm			0.03					c0.05			0.02	0.01
v/c Ratio	0.38	0.69	0.05	0.31	0.35			0.38			0.15	0.05
Uniform Delay, d1	26.8	7.4	4.6	28.6	6.4			25.2			24.3	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.5	2.0	0.0	0.5	0.2			0.5			0.1	0.0
Delay (s)	27.3	9.3	4.6	29.1	6.5			25.7			24.4	24.0
Level of Service	C	A	A	C	A			C			C	C
Approach Delay (s)		10.4			7.6			25.7			24.1	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

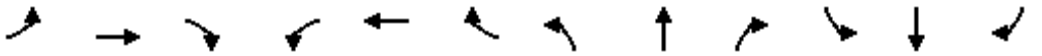
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	286	378	315	241	346	469
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	3.0	2.8	2.5	3.0	2.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	318	420	350	268	384	521
RTOR Reduction (vph)	0	112	0	86	0	0
Lane Group Flow (vph)	318	308	350	182	384	521
Turn Type		pm+ov		pm+ov	Prot	
Protected Phases	8	5	6	8	5	2
Permitted Phases		8		6		
Actuated Green, G (s)	19.0	40.4	21.6	40.6	21.4	47.0
Effective Green, g (s)	20.5	42.4	24.1	43.6	22.4	49.5
Actuated g/C Ratio	0.27	0.56	0.32	0.58	0.30	0.66
Clearance Time (s)	4.0	4.0	5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0	2.0	4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	482	954	596	917	527	1225
v/s Ratio Prot	c0.18	0.10	c0.19	0.05	c0.22	0.28
v/s Ratio Perm		0.10		0.06		
v/c Ratio	0.66	0.32	0.59	0.20	0.73	0.43
Uniform Delay, d1	24.3	8.8	21.4	7.5	23.7	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.1	1.9	0.0	4.3	0.4
Delay (s)	26.8	8.9	23.4	7.6	28.0	6.5
Level of Service	C	A	C	A	C	A
Approach Delay (s)	16.6		16.5			15.6
Approach LOS	B		B			B

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	8.3
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

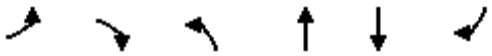
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	502	26	34	774	49	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	558	29	38	860	54	7
RTOR Reduction (vph)	0	12	0	0	0	6
Lane Group Flow (vph)	558	17	38	860	54	1
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	24.1	24.1	0.9	30.7	6.0	6.0
Effective Green, g (s)	27.5	27.5	1.9	34.1	7.0	7.0
Actuated g/C Ratio	0.59	0.59	0.04	0.73	0.15	0.15
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2097	938	72	2601	267	239
v/s Ratio Prot	0.16		c0.02	c0.24	c0.03	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.27	0.02	0.53	0.33	0.20	0.00
Uniform Delay, d1	4.6	3.9	21.8	2.2	17.3	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	3.2	0.1	0.1	0.0
Delay (s)	4.7	3.9	25.0	2.3	17.4	16.7
Level of Service	A	A	C	A	B	B
Approach Delay (s)	4.6			3.2	17.3	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	7.7
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



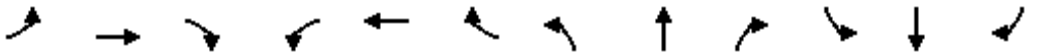
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	328	1	0	296	3	2	176	0	2	231	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0	6.0		5.0	5.0		4.0		3.0	4.0	3.0
Lane Util. Factor	1.00	0.95	1.00		0.95	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85		1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3185	1425		3185	1425		1676		1593	1676	1425
Flt Permitted	0.95	1.00	1.00		1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (perm)	1593	3185	1425		3185	1425		1672		1593	1676	1425
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	47	364	1	0	329	3	2	196	0	2	257	36
RTOR Reduction (vph)	0	0	1	0	0	2	0	0	0	0	0	21
Lane Group Flow (vph)	47	364	0	0	329	1	0	198	0	2	257	15
Turn Type	Prot		Perm	Perm		Perm	Perm			Prot		Perm
Protected Phases	5	2			6			8		7	4	
Permitted Phases			2	6		6	8					4
Actuated Green, G (s)	3.9	23.5	23.5		15.6	15.6		16.3		0.9	21.2	21.2
Effective Green, g (s)	4.9	24.5	23.5		16.6	16.6		16.3		1.9	21.2	22.2
Actuated g/C Ratio	0.09	0.45	0.43		0.30	0.30		0.30		0.03	0.39	0.41
Clearance Time (s)	4.0	6.0	6.0		6.0	6.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.7	4.7		4.7	4.7		2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	143	1427	612		967	432		498		55	650	578
v/s Ratio Prot	c0.03	0.11			c0.10					0.00	c0.15	
v/s Ratio Perm			0.00			0.00		0.12				0.01
v/c Ratio	0.33	0.26	0.00		0.34	0.00		0.40		0.04	0.40	0.03
Uniform Delay, d1	23.4	9.4	8.9		14.8	13.3		15.3		25.5	12.1	9.8
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.0		0.4	0.0		0.2		0.1	0.1	0.0
Delay (s)	23.8	9.6	8.9		15.2	13.3		15.5		25.6	12.3	9.8
Level of Service	C	A	A		B	B		B		C	B	A
Approach Delay (s)		11.2			15.2			15.5			12.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	54.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



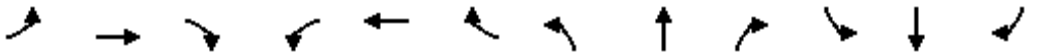
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	69	64	145	1091	733	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	71	161	1212	814	96
RTOR Reduction (vph)	0	60	0	0	0	47
Lane Group Flow (vph)	77	11	161	1212	814	49
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.6	8.6	10.5	42.7	28.2	28.2
Effective Green, g (s)	9.6	9.6	11.5	46.1	31.6	31.6
Actuated g/C Ratio	0.16	0.16	0.19	0.75	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	277	248	332	2661	1824	816
v/s Ratio Prot	c0.04		c0.09	c0.34	0.23	
v/s Ratio Perm		0.01				0.03
v/c Ratio	0.28	0.04	0.48	0.46	0.45	0.06
Uniform Delay, d1	22.8	22.0	22.3	2.9	9.3	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.4	0.2	0.3	0.1
Delay (s)	23.0	22.0	22.7	3.1	9.7	7.5
Level of Service	C	C	C	A	A	A
Approach Delay (s)	22.5			5.4	9.5	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	6.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



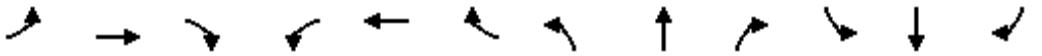
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	11	84	50	54	54	86	835	48	20	701	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9		3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583		1819	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583		1819	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	58	12	93	56	60	60	96	928	53	22	779	57
RTOR Reduction (vph)	0	0	82	0	0	53	0	0	25	0	0	30
Lane Group Flow (vph)	58	12	11	0	116	7	96	928	28	22	779	27
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	8.2	8.2	8.2		7.6	7.6	7.2	37.0	37.0	2.6	32.4	32.4
Effective Green, g (s)	9.8	9.8	9.2		9.2	9.2	8.2	40.4	40.4	3.6	35.8	35.8
Actuated g/C Ratio	0.13	0.13	0.12		0.12	0.12	0.11	0.53	0.53	0.05	0.47	0.47
Clearance Time (s)	4.9	4.9	4.9		5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1		2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	229	242	193		221	193	192	1891	846	84	1676	750
v/s Ratio Prot	c0.03	0.01			c0.06		c0.05	c0.26		0.01	0.22	
v/s Ratio Perm			0.01			0.00			0.02			0.02
v/c Ratio	0.25	0.05	0.06		0.52	0.04	0.50	0.49	0.03	0.26	0.46	0.04
Uniform Delay, d1	29.6	28.8	29.4		31.1	29.3	31.8	11.1	8.3	34.7	13.4	10.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	0.1		1.0	0.0	0.7	0.4	0.0	0.6	0.4	0.0
Delay (s)	30.2	28.9	29.5		32.2	29.3	32.5	11.5	8.4	35.3	13.8	10.7
Level of Service	C	C	C		C	C	C	B	A	D	B	B
Approach Delay (s)		29.7			31.2			13.2			14.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



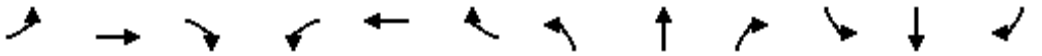
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	2	34	9	3	15	46	348	11	25	378	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4	3.4	3.0	3.4	3.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1776	1583		1794	1583	1770	1863	1583	1770	1863	1583
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1776	1583		1794	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	71	2	38	10	3	17	51	387	12	28	420	71
RTOR Reduction (vph)	0	0	31	0	0	16	0	0	3	0	0	17
Lane Group Flow (vph)	0	73	7	0	13	1	51	387	9	28	420	54
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)		9.9	9.9		2.6	2.6	4.0	28.8	28.8	2.0	26.8	26.8
Effective Green, g (s)		10.9	10.9		3.6	3.6	5.0	31.1	31.1	3.0	29.1	29.1
Actuated g/C Ratio		0.18	0.18		0.06	0.06	0.08	0.51	0.51	0.05	0.48	0.48
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8	3.8	2.0	3.8	3.8
Lane Grp Cap (vph)		317	283		106	93	145	950	807	87	889	755
v/s Ratio Prot		c0.04			c0.01		c0.03	0.21		0.02	c0.23	
v/s Ratio Perm			0.00			0.00			0.01			0.03
v/c Ratio		0.23	0.02		0.12	0.01	0.35	0.41	0.01	0.32	0.47	0.07
Uniform Delay, d1		21.5	20.7		27.2	27.0	26.5	9.2	7.4	28.0	10.8	8.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.0		0.2	0.0	0.5	0.4	0.0	0.8	0.5	0.1
Delay (s)		21.6	20.7		27.4	27.0	27.0	9.6	7.4	28.8	11.3	8.7
Level of Service		C	C		C	C	C	A	A	C	B	A
Approach Delay (s)		21.3			27.2			11.5			11.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



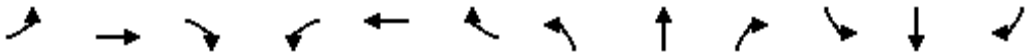
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	16	40	15	2	12	88	458	28	10	393	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.95		1.00	0.99		1.00	1.00	
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1583		1715		1770	1847		1770	1856	
Flt Permitted		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799	1583		1715		1770	1847		1770	1856	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	18	44	17	2	13	98	509	31	11	437	10
RTOR Reduction (vph)	0	0	38	0	13	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	62	6	0	19	0	98	539	0	11	446	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		9.2	9.2		2.6		7.3	37.6		0.7	31.0	
Effective Green, g (s)		9.2	9.2		2.6		7.3	37.6		0.7	31.0	
Actuated g/C Ratio		0.14	0.14		0.04		0.11	0.55		0.01	0.46	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		244	215		66		191	1024		18	849	
v/s Ratio Prot		c0.03			c0.01		c0.06	c0.29		0.01	0.24	
v/s Ratio Perm			0.00									
v/c Ratio		0.25	0.03		0.30		0.51	0.53		0.61	0.53	
Uniform Delay, d1		26.2	25.4		31.7		28.6	9.5		33.4	13.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.9		1.0	0.6		36.2	0.7	
Delay (s)		26.4	25.4		32.6		29.5	10.1		69.6	13.8	
Level of Service		C	C		C		C	B		E	B	
Approach Delay (s)		26.0			32.6			13.0			15.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	5	81	11	9	13	103	616	24	20	453	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1788	1583		1813	1583	1770	1852		1770	1854	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1788	1583		1813	1583	1770	1852		1770	1854	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	31	6	90	12	10	14	114	684	27	22	503	16
RTOR Reduction (vph)	0	0	80	0	0	13	0	1	0	0	0	0
Lane Group Flow (vph)	0	37	10	0	22	1	114	710	0	22	519	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		7.1	7.1		5.2	5.2	7.3	39.6		2.2	34.5	
Effective Green, g (s)		8.1	8.1		6.2	6.2	8.3	42.3		3.2	37.2	
Actuated g/C Ratio		0.11	0.11		0.09	0.09	0.12	0.59		0.04	0.52	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		202	179		157	137	205	1091		79	961	
v/s Ratio Prot		c0.02			c0.01		c0.06	c0.38		0.01	0.28	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.18	0.06		0.14	0.01	0.56	0.65		0.28	0.54	
Uniform Delay, d1		28.9	28.4		30.3	30.0	30.0	9.8		33.2	11.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.1		0.4	0.0	1.9	1.5		0.7	0.7	
Delay (s)		29.3	28.6		30.7	30.0	31.9	11.3		33.9	12.3	
Level of Service		C	C		C	C	C	B		C	B	
Approach Delay (s)		28.8			30.5			14.2			13.2	
Approach LOS		C			C			B			B	

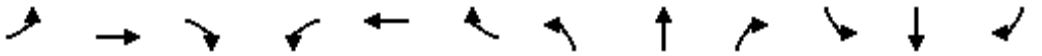
Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	71.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	6	11	37	10	168	25	590	18	93	649	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.97	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1541	1770	1863	1583	1770	3518		1770	3462	
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1797	1541	1770	1863	1583	1770	3518		1770	3462	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	7	12	41	11	187	28	656	20	103	721	90
RTOR Reduction (vph)	0	0	11	0	0	158	0	2	0	0	6	0
Lane Group Flow (vph)	0	26	1	41	11	29	28	674	0	103	805	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		6.9	6.9	9.2	9.2	9.2	2.2	24.0		6.8	28.6	
Effective Green, g (s)		7.9	7.9	10.2	10.2	10.2	4.2	26.0		8.8	30.6	
Actuated g/C Ratio		0.12	0.12	0.15	0.15	0.15	0.06	0.39		0.13	0.46	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		215	185	274	288	245	113	1388		236	1608	
v/s Ratio Prot		c0.01		c0.02	0.01		0.02	0.19		c0.06	c0.23	
v/s Ratio Perm			0.00			0.02						
v/c Ratio		0.12	0.01	0.15	0.04	0.12	0.25	0.49		0.44	0.50	
Uniform Delay, d1		25.9	25.5	24.1	23.7	24.0	29.3	14.9		26.3	12.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0	0.2	0.0	0.2	0.4	0.3		0.5	0.3	
Delay (s)		26.1	25.6	24.3	23.7	24.1	29.8	15.3		26.7	12.6	
Level of Service		C	C	C	C	C	C	B		C	B	
Approach Delay (s)		25.9			24.1			15.9			14.2	
Approach LOS		C			C			B			B	

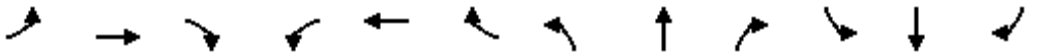
Intersection Summary				
HCM Average Control Delay	16.3	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.36			
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	9.3	
Intersection Capacity Utilization	53.1%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



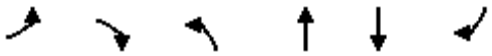
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	0	43	9	0	25	53	554	33	30	589	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3509		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3509		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	0	48	10	0	28	59	616	37	33	654	2
RTOR Reduction (vph)	0	0	40	0	0	27	0	3	0	0	0	1
Lane Group Flow (vph)	77	0	8	10	0	1	59	650	0	33	654	1
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	10.7		10.7	2.4		2.4	4.1	30.8		2.0	28.7	28.7
Effective Green, g (s)	10.7		10.7	3.4		3.4	4.1	31.8		3.0	29.7	28.7
Actuated g/C Ratio	0.17		0.17	0.05		0.05	0.06	0.50		0.05	0.47	0.45
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	298		266	95		85	114	1755		83	1653	714
v/s Ratio Prot	c0.04			c0.01			c0.03	c0.19		0.02	0.18	
v/s Ratio Perm			0.01			0.00						0.00
v/c Ratio	0.26		0.03	0.11		0.02	0.52	0.37		0.40	0.40	0.00
Uniform Delay, d1	23.0		22.1	28.7		28.5	28.8	9.8		29.4	11.1	9.6
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2		0.0	0.2		0.0	1.6	0.2		1.1	0.3	0.0
Delay (s)	23.2		22.1	28.8		28.5	30.4	10.0		30.6	11.4	9.6
Level of Service	C		C	C		C	C	A		C	B	A
Approach Delay (s)		22.8			28.6			11.7			12.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	11.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



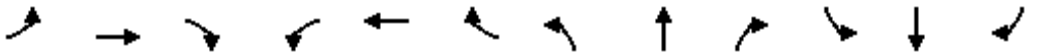
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	55	154	67	0	14	11	742	31	7	493	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1752	1583		1770	1583	1770	5085	1583	1770	3539	1583
Flt Permitted	0.95	0.99	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1752	1583		1770	1583	1770	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	88	61	171	74	0	16	12	824	34	8	548	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	3
Lane Group Flow (vph)	73	76	171	0	74	16	12	824	34	8	548	3
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	8.4	8.4	56.6		5.1	56.6	0.8	24.3	56.6	0.8	24.3	24.3
Effective Green, g (s)	9.4	9.4	56.6		6.1	56.6	1.8	27.7	56.6	1.8	27.7	27.7
Actuated g/C Ratio	0.17	0.17	1.00		0.11	1.00	0.03	0.49	1.00	0.03	0.49	0.49
Clearance Time (s)	4.0	4.0			4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5			3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	279	291	1583		191	1583	56	2489	1583	56	1732	775
v/s Ratio Prot	c0.04	0.04			c0.04		0.01	c0.16		0.00	0.15	
v/s Ratio Perm			c0.11			0.01			0.02			0.00
v/c Ratio	0.26	0.26	0.11		0.39	0.01	0.21	0.33	0.02	0.14	0.32	0.00
Uniform Delay, d1	20.6	20.6	0.0		23.5	0.0	26.7	8.8	0.0	26.6	8.7	7.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3	0.1		1.3	0.0	0.7	0.1	0.0	1.2	0.2	0.0
Delay (s)	20.9	20.9	0.1		24.8	0.0	27.4	8.9	0.0	27.8	8.9	7.4
Level of Service	C	C	A		C	A	C	A	A	C	A	A
Approach Delay (s)		9.8			20.4			8.9			9.2	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	56.6	Sum of lost time (s)	8.6
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



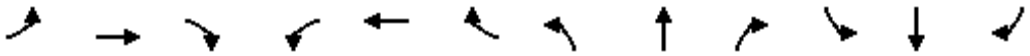
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	445	138	438	586	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	-0.4	0.6	
Lane Util. Factor		1.00	1.00	0.95	0.95	
Frt		0.85	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1583	1770	3539	3539	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1583	1770	3539	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	494	153	487	651	0
RTOR Reduction (vph)	0	386	0	0	0	0
Lane Group Flow (vph)	0	108	153	487	651	0
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)		7.3	6.8	23.6	11.8	
Effective Green, g (s)		8.3	7.8	27.0	15.2	
Actuated g/C Ratio		0.22	0.21	0.71	0.40	
Clearance Time (s)		4.0	4.0	3.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		347	364	2521	1419	
v/s Ratio Prot			c0.09	0.14	c0.18	
v/s Ratio Perm		c0.07				
v/c Ratio		0.31	0.42	0.19	0.46	
Uniform Delay, d1		12.4	13.1	1.8	8.3	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.8	0.0	0.2	
Delay (s)		12.9	13.9	1.9	8.6	
Level of Service		B	B	A	A	
Approach Delay (s)	12.9			4.7	8.6	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	37.9	Sum of lost time (s)	6.6
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	8	40	34	2	0	21	451	18	7	971	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0		3.0	2.6	2.6	2.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.91	
Frt		1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1799	1583	1681	1693		1770	3539	1583	1770	5080	
Flt Permitted		0.97	1.00	0.95	0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1799	1583	1681	1693		1770	3539	1583	1770	5080	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	9	44	38	2	0	23	501	20	8	1079	7
RTOR Reduction (vph)	0	0	40	0	0	0	0	0	8	0	0	0
Lane Group Flow (vph)	0	31	4	20	20	0	23	501	12	8	1086	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			
Actuated Green, G (s)		5.1	5.1	3.9	3.9		1.9	33.6	33.6	0.7	31.4	
Effective Green, g (s)		6.1	6.1	4.9	4.9		2.9	37.0	37.0	1.7	34.8	
Actuated g/C Ratio		0.10	0.10	0.08	0.08		0.05	0.61	0.61	0.03	0.58	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	6.0	6.0	3.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2		2.0	3.9	3.9	2.0	3.9	
Lane Grp Cap (vph)		182	160	137	138		85	2172	971	50	2932	
v/s Ratio Prot		c0.02		c0.01	0.01		c0.01	0.14		0.00	c0.21	
v/s Ratio Perm			0.00						0.01			
v/c Ratio		0.17	0.03	0.15	0.14		0.27	0.23	0.01	0.16	0.37	
Uniform Delay, d1		24.8	24.4	25.8	25.8		27.7	5.2	4.5	28.6	6.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.0	0.2	0.2		0.6	0.1	0.0	0.5	0.1	
Delay (s)		24.9	24.5	25.9	25.9		28.3	5.3	4.5	29.2	7.0	
Level of Service		C	C	C	C		C	A	A	C	A	
Approach Delay (s)		24.7			25.9			6.3			7.1	
Approach LOS		C			C			A			A	

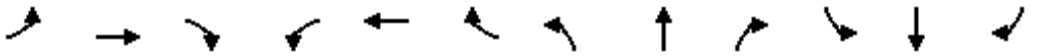
Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	11.6
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	6	82	63	7	21	152	1155	25	13	1444	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.96		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1778	1526		1783	1583	1770	5063		1770	5061	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1778	1526		1783	1583	1770	5063		1770	5061	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	7	91	70	8	23	169	1283	28	14	1604	38
RTOR Reduction (vph)	0	0	79	0	0	21	0	1	0	0	2	0
Lane Group Flow (vph)	0	135	12	0	78	2	169	1310	0	14	1640	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		13.0	13.0		8.4	8.4	14.8	76.7		2.6	65.5	
Effective Green, g (s)		15.3	15.3		10.7	10.7	15.8	79.7		3.6	68.5	
Actuated g/C Ratio		0.13	0.13		0.09	0.09	0.13	0.66		0.03	0.57	
Clearance Time (s)		5.3	5.3		4.0	4.0	3.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		227	195		159	141	233	3363		53	2889	
v/s Ratio Prot		c0.08			c0.04		c0.10	0.26		0.01	c0.32	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.59	0.06		0.49	0.01	0.73	0.39		0.26	0.57	
Uniform Delay, d1		49.4	46.0		52.1	49.8	50.0	9.1		56.9	16.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.8	0.0		0.9	0.0	9.1	0.2		1.0	0.8	
Delay (s)		52.2	46.1		52.9	49.9	59.1	9.3		57.9	17.2	
Level of Service		D	D		D	D	E	A		E	B	
Approach Delay (s)		49.7			52.2			15.0			17.5	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

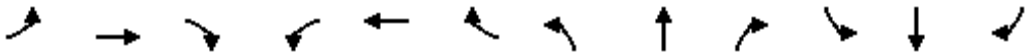
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	195	90	185	420	246	153	1014	132	212	1101	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1532	1770	3539	1534	1770	5085	1560	1770	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1532	1770	3539	1534	1770	5085	1560	1770	5085	1560
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	230	217	100	206	467	273	170	1127	147	236	1223	174
RTOR Reduction (vph)	0	0	81	0	0	223	0	0	0	0	0	0
Lane Group Flow (vph)	230	217	19	206	467	50	170	1127	147	236	1223	174
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	18.7	19.6	19.6	17.9	18.8	18.8	15.9	43.3	120.0	19.8	46.9	120.0
Effective Green, g (s)	19.7	22.6	22.6	18.9	21.8	21.8	16.9	46.3	120.0	20.8	49.9	120.0
Actuated g/C Ratio	0.16	0.19	0.19	0.16	0.18	0.18	0.14	0.39	1.00	0.17	0.42	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	291	667	289	279	643	279	249	1962	1560	307	2115	1560
v/s Ratio Prot	c0.13	0.06		0.12	c0.13		0.10	0.22		c0.13	c0.24	
v/s Ratio Perm			0.01			0.03			0.09			c0.11
v/c Ratio	0.79	0.33	0.07	0.74	0.73	0.18	0.68	0.57	0.09	0.77	0.58	0.11
Uniform Delay, d1	48.2	42.1	40.0	48.2	46.3	41.5	49.0	29.1	0.0	47.3	27.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.7	0.3	0.1	8.5	4.3	0.4	6.0	1.2	0.1	10.0	1.2	0.1
Delay (s)	60.9	42.5	40.1	56.7	50.5	41.9	55.0	30.3	0.1	57.3	28.1	0.1
Level of Service	E	D	D	E	D	D	E	C	A	E	C	A
Approach Delay (s)		49.8			49.4			30.1			29.3	
Approach LOS		D			D			C			C	

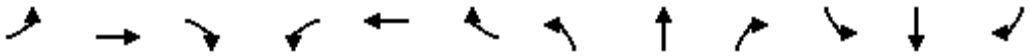
Intersection Summary			
HCM Average Control Delay	36.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1	26	26	1	15	47	1346	31	16	1355	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0	4.7	2.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.91	
Frt		0.93			0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1696			1719		1770	3539	1583	1770	5079	
Flt Permitted		0.84			0.87		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1457			1535		1770	3539	1583	1770	5079	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	1	29	29	1	17	52	1496	34	18	1506	12
RTOR Reduction (vph)	0	25	0	0	15	0	0	0	7	0	1	0
Lane Group Flow (vph)	0	33	0	0	32	0	52	1496	27	18	1517	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		6.2			6.2		4.0	39.6	39.6	1.0	35.6	
Effective Green, g (s)		7.2			7.2		5.0	42.3	40.6	2.0	38.3	
Actuated g/C Ratio		0.12			0.12		0.08	0.71	0.68	0.03	0.64	
Clearance Time (s)		4.0			4.0		4.0	5.7	5.7	3.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8	3.8	2.0	3.8	
Lane Grp Cap (vph)		176			186		149	2516	1080	59	3269	
v/s Ratio Prot							c0.03	c0.42		0.01	0.30	
v/s Ratio Perm		c0.02			0.02				0.02			
v/c Ratio		0.18			0.17		0.35	0.59	0.03	0.31	0.46	
Uniform Delay, d1		23.5			23.5		25.7	4.3	3.1	28.1	5.4	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5			0.4		0.5	0.4	0.0	1.1	0.1	
Delay (s)		24.0			23.9		26.2	4.7	3.1	29.1	5.5	
Level of Service		C			C		C	A	A	C	A	
Approach Delay (s)		24.0			23.9			5.4			5.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	37	68	154	79	112	140	1693	71	63	1396	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	1863	1562	1770	5085	1562	1770	5073	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	1863	1562	1770	5085	1562	1770	5073	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	94	41	76	171	88	124	156	1881	79	70	1551	22
RTOR Reduction (vph)	0	0	67	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	94	41	9	171	88	124	156	1881	79	70	1572	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	10.7	10.6	10.6	12.8	12.7	120.0	13.9	68.9	120.0	8.0	63.0	
Effective Green, g (s)	11.7	13.6	13.6	13.8	15.7	120.0	14.9	71.9	120.0	9.0	66.0	
Actuated g/C Ratio	0.10	0.11	0.11	0.12	0.13	1.00	0.12	0.60	1.00	0.08	0.55	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	173	401	175	395	244	1562	220	3047	1562	133	2790	
v/s Ratio Prot	c0.05	0.01		0.05	c0.05		c0.09	c0.37		0.04	0.31	
v/s Ratio Perm			0.01			c0.08			0.05			
v/c Ratio	0.54	0.10	0.05	0.43	0.36	0.08	0.71	0.62	0.05	0.53	0.56	
Uniform Delay, d1	51.6	47.7	47.4	49.5	47.6	0.0	50.5	15.3	0.0	53.4	17.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	0.1	0.2	0.3	1.2	0.1	8.3	0.9	0.1	1.7	0.3	
Delay (s)	53.5	47.9	47.6	49.7	48.7	0.1	58.7	16.2	0.1	55.2	17.9	
Level of Service	D	D	D	D	D	A	E	B	A	E	B	
Approach Delay (s)		50.3			33.4			18.8			19.5	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

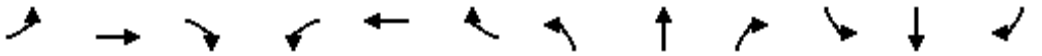
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	189	150	1797	192	94	1464
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	2.0	2.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	210	167	1997	213	104	1627
RTOR Reduction (vph)	0	0	0	18	0	0
Lane Group Flow (vph)	210	167	1997	195	104	1627
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	17.7	103.5	60.4	60.4	10.4	75.8
Effective Green, g (s)	18.7	103.5	62.4	62.4	11.4	77.8
Actuated g/C Ratio	0.18	1.00	0.60	0.60	0.11	0.75
Clearance Time (s)	6.0		6.0	6.0	3.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	320	1583	2134	954	195	2660
v/s Ratio Prot	c0.12		c0.56		0.06	c0.46
v/s Ratio Perm		0.11		0.12		
v/c Ratio	0.66	0.11	0.94	0.20	0.53	0.61
Uniform Delay, d1	39.4	0.0	18.7	9.3	43.5	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.1	8.5	0.1	1.4	0.4
Delay (s)	44.2	0.1	27.3	9.4	44.9	6.3
Level of Service	D	A	C	A	D	A
Approach Delay (s)	24.7		25.5			8.7
Approach LOS	C		C			A

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	103.5	Sum of lost time (s)	11.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	61	21	412	69	27	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	68	23	458	77	30	533
RTOR Reduction (vph)	0	19	0	28	0	0
Lane Group Flow (vph)	68	4	458	49	30	533
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.8	6.8	27.8	27.8	0.9	31.7
Effective Green, g (s)	8.3	8.3	30.8	30.8	1.9	34.7
Actuated g/C Ratio	0.17	0.17	0.64	0.64	0.04	0.72
Clearance Time (s)	4.0	4.0	6.0	6.0	3.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	303	271	2247	1005	69	1333
v/s Ratio Prot	c0.04		0.13		c0.02	c0.29
v/s Ratio Perm		0.00		0.03		
v/c Ratio	0.22	0.01	0.20	0.05	0.43	0.40
Uniform Delay, d1	17.3	16.7	3.7	3.3	22.8	2.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	0.1	0.0	1.6	0.4
Delay (s)	17.7	16.7	3.8	3.4	24.4	3.1
Level of Service	B	B	A	A	C	A
Approach Delay (s)	17.5		3.7			4.3
Approach LOS	B		A			A

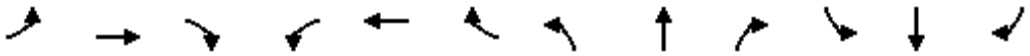
Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	4.5
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	3	9	89	3	144	11	790	75	137	757	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	2.7
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.93			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1703			1777	1557	1770	3486		1770	1863	1537
Flt Permitted		0.93			0.73	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1608			1355	1557	1770	3486		1770	1863	1537
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	3	10	99	3	160	12	878	83	152	841	30
RTOR Reduction (vph)	0	8	0	0	0	129	0	7	0	0	0	5
Lane Group Flow (vph)	0	11	0	0	102	31	12	954	0	152	841	25
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		Perm
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						6
Actuated Green, G (s)		11.6			11.6	11.6	0.9	28.2		10.9	38.2	38.2
Effective Green, g (s)		12.6			12.6	12.6	1.9	31.2		11.9	41.2	41.2
Actuated g/C Ratio		0.20			0.20	0.20	0.03	0.48		0.18	0.64	0.64
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)		315			265	305	52	1689		327	1192	983
v/s Ratio Prot							0.01	0.27		c0.09	c0.45	
v/s Ratio Perm		0.01			c0.08	0.02						0.02
v/c Ratio		0.03			0.38	0.10	0.23	0.56		0.46	0.71	0.03
Uniform Delay, d1		21.0			22.5	21.3	30.5	11.8		23.4	7.6	4.2
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.0			0.3	0.1	0.8	0.6		0.4	2.2	0.0
Delay (s)		21.0			22.9	21.3	31.4	12.4		23.8	9.8	4.3
Level of Service		C			C	C	C	B		C	A	A
Approach Delay (s)		21.0			21.9			12.6			11.7	
Approach LOS		C			C			B			B	

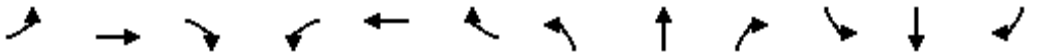
Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	8.7
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	0	37	48	5	38	54	822	22	14	782	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	1531		1783	1491	1770	3539	1544	1770	3514	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1770	1531		1783	1491	1770	3539	1544	1770	3514	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	0	41	53	6	42	60	913	24	16	869	36
RTOR Reduction (vph)	0	0	37	0	0	39	0	0	5	0	2	0
Lane Group Flow (vph)	0	57	4	0	59	4	60	913	19	16	903	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		7.6	7.6		6.5	6.5	6.6	55.7	55.7	2.5	51.6	
Effective Green, g (s)		8.6	8.6		7.5	7.5	7.6	58.7	56.7	3.5	54.6	
Actuated g/C Ratio		0.10	0.10		0.08	0.08	0.08	0.65	0.63	0.04	0.61	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		169	146		149	124	149	2308	973	69	2132	
v/s Ratio Prot		c0.03			c0.03		c0.03	0.26		0.01	c0.26	
v/s Ratio Perm			0.00			0.00			0.01			
v/c Ratio		0.34	0.03		0.40	0.03	0.40	0.40	0.02	0.23	0.42	
Uniform Delay, d1		38.0	36.9		39.1	37.9	39.0	7.3	6.2	41.9	9.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4	0.0		0.6	0.0	0.6	0.3	0.0	0.6	0.6	
Delay (s)		38.5	36.9		39.7	37.9	39.7	7.6	6.3	42.6	10.0	
Level of Service		D	D		D	D	D	A	A	D	A	
Approach Delay (s)		37.8			39.0			9.5			10.6	
Approach LOS		D			D			A			B	

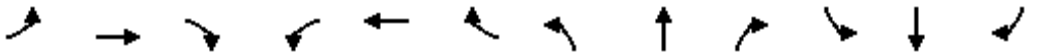
Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	258	0	241	5	4	3	610	635	0	8	572	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1743		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1743		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	287	0	268	6	4	3	678	706	0	9	636	296
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	174
Lane Group Flow (vph)	143	144	268	6	4	0	678	706	0	9	636	122
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	13.0	13.0	90.0	4.2	4.2		22.0	53.7		1.4	35.1	35.1
Effective Green, g (s)	15.0	15.0	90.0	6.2	6.2		24.0	55.7		3.4	37.1	37.1
Actuated g/C Ratio	0.17	0.17	1.00	0.07	0.07		0.27	0.62		0.04	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	280	280	1478	122	120		915	2190		67	1459	609
v/s Ratio Prot	0.09	c0.09		0.00	0.00		c0.20	0.20		0.01	c0.18	
v/s Ratio Perm			c0.18									0.08
v/c Ratio	0.51	0.51	0.18	0.05	0.04		0.74	0.32		0.13	0.44	0.20
Uniform Delay, d1	34.2	34.2	0.0	39.1	39.1		30.2	8.2		41.9	19.0	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.6	1.6	0.3	0.2	0.1		3.3	0.4		0.9	0.2	0.2
Delay (s)	35.7	35.8	0.3	39.3	39.2		33.4	8.6		42.8	19.2	17.1
Level of Service	D	D	A	D	D		C	A		D	B	B
Approach Delay (s)		18.6			39.3			20.7			18.7	
Approach LOS		B			D			C			B	

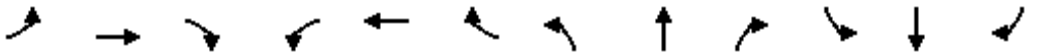
Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



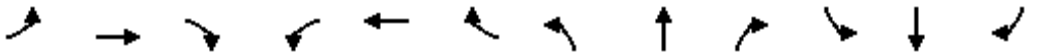
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	0	34	27	0	22	40	695	32	49	724	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583	1770	1583		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1583	1770	1583		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	70	0	38	30	0	24	44	772	36	54	804	24
RTOR Reduction (vph)	0	0	33	0	22	0	0	0	19	0	0	13
Lane Group Flow (vph)	35	35	5	30	2	0	44	772	17	54	804	11
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	8.4	8.4	8.4	4.4	4.4		3.7	30.5	30.5	3.9	30.7	30.7
Effective Green, g (s)	8.4	8.4	8.4	4.4	4.4		3.7	30.5	30.5	3.9	30.7	30.7
Actuated g/C Ratio	0.13	0.13	0.13	0.07	0.07		0.06	0.47	0.47	0.06	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	219	219	206	121	108		102	1673	749	107	1684	753
v/s Ratio Prot	c0.02	0.02		c0.02	0.00		0.02	0.22		c0.03	c0.23	
v/s Ratio Perm			0.00						0.01			0.01
v/c Ratio	0.16	0.16	0.02	0.25	0.02		0.43	0.46	0.02	0.50	0.48	0.02
Uniform Delay, d1	24.9	24.9	24.5	28.5	28.0		29.4	11.5	9.1	29.4	11.5	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0	0.4	0.0		1.1	0.3	0.0	1.4	0.3	0.0
Delay (s)	25.0	25.0	24.5	28.9	28.0		30.4	11.7	9.1	30.7	11.7	8.9
Level of Service	C	C	C	C	C		C	B	A	C	B	A
Approach Delay (s)		24.8			28.5			12.6			12.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	722	44	88	714	43	82	29	23	5	29	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.99	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1728	1583		1795	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.99	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1728	1583		1795	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	53	802	49	98	793	48	91	32	26	6	32	11
RTOR Reduction (vph)	0	0	26	0	0	13	0	0	23	0	10	0
Lane Group Flow (vph)	53	802	23	98	793	35	61	62	3	0	39	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	3.7	26.8	26.8	6.5	29.6	29.6	6.1	6.1	6.1		3.4	
Effective Green, g (s)	5.7	28.8	28.8	7.5	31.6	31.6	7.1	7.1	7.1		5.4	
Actuated g/C Ratio	0.09	0.48	0.48	0.12	0.52	0.52	0.12	0.12	0.12		0.09	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	167	1685	754	219	1848	827	197	203	186		160	
v/s Ratio Prot	0.03	c0.23		c0.06	c0.22		c0.04	0.04			c0.02	
v/s Ratio Perm			0.01			0.02			0.00			
v/c Ratio	0.32	0.48	0.03	0.45	0.43	0.04	0.31	0.31	0.02		0.24	
Uniform Delay, d1	25.6	10.7	8.4	24.6	8.9	7.1	24.5	24.4	23.6		25.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.3	0.0	0.5	0.2	0.0	0.3	0.3	0.0		0.3	
Delay (s)	26.0	11.0	8.5	25.1	9.1	7.1	24.8	24.8	23.6		25.9	
Level of Service	C	B	A	C	A	A	C	C	C		C	
Approach Delay (s)		11.8			10.7			24.6			25.9	
Approach LOS		B			B			C			C	

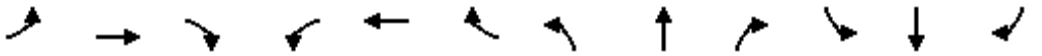
Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	15.4
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	692	133	129	884	39	128	33	75	23	27	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1719	1478	1681	1762	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1719	1478	1681	1762	1478
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	71	769	148	143	982	43	142	37	83	26	30	70
RTOR Reduction (vph)	0	0	82	0	0	22	0	0	73	0	0	62
Lane Group Flow (vph)	71	769	66	143	982	21	88	91	10	23	33	8
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	4.8	26.3	26.3	8.1	29.6	29.6	6.6	6.6	6.6	5.8	5.8	5.8
Effective Green, g (s)	5.8	29.0	29.0	9.1	32.3	32.3	7.6	7.6	7.6	6.8	7.7	7.7
Actuated g/C Ratio	0.09	0.45	0.45	0.14	0.50	0.50	0.12	0.12	0.12	0.10	0.12	0.12
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	158	1577	658	247	1756	733	196	201	173	176	208	175
v/s Ratio Prot	0.04	c0.22		0.08	c0.28		0.05	c0.05		0.01	c0.02	
v/s Ratio Perm			0.04			0.01			0.01			0.01
v/c Ratio	0.45	0.49	0.10	0.58	0.56	0.03	0.45	0.45	0.06	0.13	0.16	0.05
Uniform Delay, d1	28.1	12.8	10.5	26.2	11.4	8.4	26.8	26.8	25.6	26.5	25.8	25.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.3	0.1	2.0	0.5	0.0	0.6	0.6	0.0	0.5	0.5	0.2
Delay (s)	28.9	13.1	10.6	28.2	11.9	8.4	27.4	27.4	25.6	26.9	26.3	25.6
Level of Service	C	B	B	C	B	A	C	C	C	C	C	C
Approach Delay (s)		13.9			13.8			26.8			26.0	
Approach LOS		B			B			C			C	

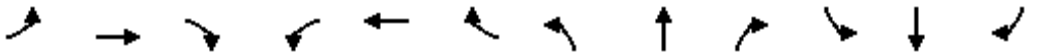
Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	8.7
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



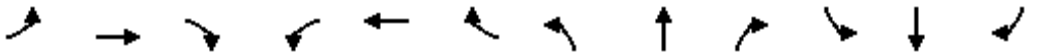
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	760	65	48	695	4	156	33	7	3	20	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			2.0	2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97			0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1700			1852	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97			0.99	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1700			1852	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	844	72	53	772	4	173	37	8	3	22	23
RTOR Reduction (vph)	0	0	49	0	0	3	0	2	0	0	0	22
Lane Group Flow (vph)	42	844	23	53	772	1	109	107	0	0	25	1
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8						1
Actuated Green, G (s)	4.6	26.9	26.9	5.1	27.4	27.4	38.1	38.1			3.9	3.9
Effective Green, g (s)	5.6	28.9	28.9	6.1	29.4	29.4	39.1	39.1			4.9	4.9
Actuated g/C Ratio	0.06	0.32	0.32	0.07	0.33	0.33	0.43	0.43			0.05	0.05
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0			3.0	3.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3	3.5	3.5			2.0	2.0
Lane Grp Cap (vph)	110	1136	508	120	1156	517	730	739			101	86
v/s Ratio Prot	0.02	c0.24		0.03	c0.22		c0.06	0.06			c0.01	
v/s Ratio Perm			0.01			0.00						0.00
v/c Ratio	0.38	0.74	0.05	0.44	0.67	0.00	0.15	0.14			0.25	0.01
Uniform Delay, d1	40.5	27.2	21.0	40.3	26.1	20.4	15.4	15.4			40.8	40.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.8	2.9	0.1	0.9	1.7	0.0	0.4	0.4			0.5	0.0
Delay (s)	41.3	30.2	21.1	41.3	27.8	20.4	15.8	15.8			41.3	40.3
Level of Service	D	C	C	D	C	C	B	B			D	D
Approach Delay (s)		30.0			28.6			15.8			40.8	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	409	371	31	313	29	337	57	32	12	54	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1709	1583		1846	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.99	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1709	1583		1846	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	31	454	412	34	348	32	374	63	36	13	60	40
RTOR Reduction (vph)	0	0	120	0	0	16	0	0	28	0	0	36
Lane Group Flow (vph)	31	454	292	34	348	16	217	220	8	0	73	4
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	4.2	43.0	61.8	4.3	43.1	43.1	18.8	18.8	18.8		6.9	6.9
Effective Green, g (s)	5.2	45.0	63.8	5.3	45.1	45.1	19.8	19.8	19.8		7.9	7.9
Actuated g/C Ratio	0.06	0.50	0.71	0.06	0.50	0.50	0.22	0.22	0.22		0.09	0.09
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	102	1770	1122	104	1773	793	370	376	348		162	139
v/s Ratio Prot	0.02	c0.13	c0.06	c0.02	0.10		c0.13	0.13			c0.04	
v/s Ratio Perm			0.13			0.01			0.01			0.00
v/c Ratio	0.30	0.26	0.26	0.33	0.20	0.02	0.59	0.59	0.02		0.45	0.03
Uniform Delay, d1	40.7	12.9	4.7	40.6	12.4	11.3	31.4	31.4	27.5		39.0	37.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	0.1	0.1	0.7	0.2	0.0	2.5	2.5	0.0		0.7	0.0
Delay (s)	41.3	13.0	4.8	41.3	12.7	11.4	34.0	33.9	27.5		39.7	37.6
Level of Service	D	B	A	D	B	B	C	C	C		D	D
Approach Delay (s)		10.2			14.9			33.4			39.0	
Approach LOS		B			B			C			D	

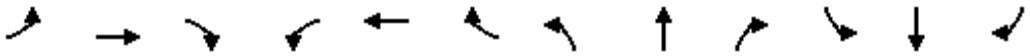
Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	16	44	18	7	4	47	999	8	7	762	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	2.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1632		3433	1761		1676	4984	1413	1745	5187	1472
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1632		3433	1761		1676	4984	1413	1745	5187	1472
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	103	18	49	20	8	4	52	1110	9	8	847	112
RTOR Reduction (vph)	0	43	0	0	4	0	0	0	3	0	0	45
Lane Group Flow (vph)	103	24	0	20	8	0	52	1110	6	8	847	67
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	9.2	8.6		3.2	3.9		4.4	48.3	48.3	0.8	43.7	43.7
Effective Green, g (s)	10.2	9.6		4.2	4.9		5.4	51.7	51.7	1.8	47.1	47.1
Actuated g/C Ratio	0.13	0.12		0.05	0.06		0.07	0.65	0.65	0.02	0.59	0.59
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	227	198		182	109		114	3253	922	40	3085	875
v/s Ratio Prot	c0.06	0.01		c0.01	0.00		c0.03	c0.22		0.00	0.16	
v/s Ratio Perm									0.00			0.05
v/c Ratio	0.45	0.12		0.11	0.08		0.46	0.34	0.01	0.20	0.27	0.08
Uniform Delay, d1	31.9	31.0		35.7	35.0		35.5	6.1	4.8	38.0	7.8	6.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2		0.1	0.1		1.1	0.1	0.0	0.9	0.1	0.1
Delay (s)	32.4	31.3		35.8	35.1		36.5	6.3	4.8	38.9	7.9	6.9
Level of Service	C	C		D	D		D	A	A	D	A	A
Approach Delay (s)		32.0			35.6			7.6			8.0	
Approach LOS		C			D			A			A	

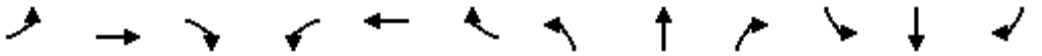
Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



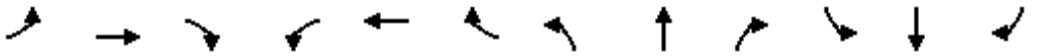
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	36	33	21	19	21	124	225	0	43	235	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.96			0.95		1.00	1.00		1.00	0.93	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1753			1746		1770	3539		1770	1723	
Flt Permitted		0.87			0.72		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1549			1274		1770	3539		1770	1723	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	40	37	23	21	23	138	250	0	48	261	261
RTOR Reduction (vph)	0	17	0	0	21	0	0	0	0	0	32	0
Lane Group Flow (vph)	0	97	0	0	46	0	138	250	0	48	490	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		8.5			6.1		10.3	34.9		3.9	28.5	
Effective Green, g (s)		8.5			6.1		10.3	34.9		3.9	28.5	
Actuated g/C Ratio		0.12			0.09		0.15	0.50		0.06	0.41	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		190			112		263	1780		99	708	
v/s Ratio Prot							c0.08	0.07		0.03	c0.28	
v/s Ratio Perm		c0.06			c0.04							
v/c Ratio		0.51			0.41		0.52	0.14		0.48	0.69	
Uniform Delay, d1		28.5			29.9		27.3	9.2		31.8	16.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0			0.9		0.9	0.0		1.4	2.9	
Delay (s)		29.5			30.8		28.2	9.3		33.1	19.7	
Level of Service		C			C		C	A		C	B	
Approach Delay (s)		29.5			30.8			16.0			20.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	0	142	10	2	6	129	1403	6	35	1044	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1787	1583	1770	3537		1770	3539	1583
Flt Permitted		0.95	1.00		0.90	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1678	1583	1770	3537		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	68	0	158	11	2	7	143	1559	7	39	1160	113
RTOR Reduction (vph)	0	0	133	0	0	7	0	0	0	0	0	38
Lane Group Flow (vph)	0	68	25	0	13	0	143	1566	0	39	1160	75
Turn Type	Split		Perm	Perm		Perm	Prot			Prot		Perm
Protected Phases	4	4			3		5	2		1	6	
Permitted Phases			4	3		3						6
Actuated Green, G (s)		11.9	11.9		3.1	3.1	10.8	42.3		4.0	35.5	35.5
Effective Green, g (s)		12.9	12.9		4.1	4.1	13.8	44.3		5.0	38.5	38.5
Actuated g/C Ratio		0.16	0.16		0.05	0.05	0.17	0.55		0.06	0.48	0.48
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		285	255		86	81	305	1954		110	1699	760
v/s Ratio Prot		c0.04					c0.08	c0.44		0.02	0.33	
v/s Ratio Perm			0.02		c0.01	0.00						0.05
v/c Ratio		0.24	0.10		0.15	0.00	0.47	0.80		0.35	0.68	0.10
Uniform Delay, d1		29.4	28.7		36.4	36.1	29.9	14.4		36.1	16.1	11.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2	0.1		0.3	0.0	0.4	2.6		0.7	1.3	0.1
Delay (s)		29.5	28.8		36.7	36.1	30.3	17.0		36.8	17.4	11.5
Level of Service		C	C		D	D	C	B		D	B	B
Approach Delay (s)		29.0			36.5			18.2			17.5	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.2	Sum of lost time (s)	11.9
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	293	5	194	8	9	9	198	1234	4	3	855	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		2.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1688	1583		1820	1583	3433	3538		1770	3539	1583
Flt Permitted	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1688	1583		1820	1583	3433	3538		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	326	6	216	9	10	10	220	1371	4	3	950	387
RTOR Reduction (vph)	0	0	146	0	0	10	0	0	0	0	0	111
Lane Group Flow (vph)	166	166	70	0	19	0	220	1375	0	3	950	277
Turn Type	Split		pm+ov	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4	5	3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)	15.6	15.6	26.1		3.1	3.1	10.5	50.4		0.8	39.7	39.7
Effective Green, g (s)	16.6	16.6	28.1		4.1	4.1	11.5	52.9		1.8	42.2	42.2
Actuated g/C Ratio	0.19	0.19	0.33		0.05	0.05	0.13	0.61		0.02	0.49	0.49
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.5		3.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	323	324	570		86	75	457	2166		37	1729	773
v/s Ratio Prot	c0.10	0.10	0.02		c0.01		c0.06	c0.39		0.00	0.27	
v/s Ratio Perm			0.03			0.00						0.17
v/c Ratio	0.51	0.51	0.12		0.22	0.01	0.48	0.63		0.08	0.55	0.36
Uniform Delay, d1	31.3	31.3	20.5		39.6	39.2	34.7	10.6		41.5	15.5	13.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	1.4	0.0		0.5	0.0	0.3	0.9		0.3	0.7	0.6
Delay (s)	32.7	32.6	20.5		40.1	39.2	35.0	11.5		41.8	16.1	14.3
Level of Service	C	C	C		D	D	C	B		D	B	B
Approach Delay (s)		27.9			39.8			14.7			15.6	
Approach LOS		C			D			B			B	

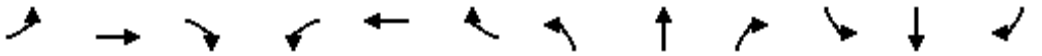
Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	437	823	576	248	447	674
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	2.0
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	486	914	640	276	497	749
RTOR Reduction (vph)	0	21	0	190	0	0
Lane Group Flow (vph)	486	893	640	86	497	749
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	18.6	57.8	28.9	28.9	39.2	74.4
Effective Green, g (s)	19.6	62.4	31.2	31.2	41.5	75.4
Actuated g/C Ratio	0.20	0.62	0.31	0.31	0.42	0.75
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	3.0
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	673	1015	1104	494	1425	2668
v/s Ratio Prot	0.14	c0.36	c0.18		0.14	0.21
v/s Ratio Perm		0.20		0.05		
v/c Ratio	0.72	0.88	0.58	0.17	0.35	0.28
Uniform Delay, d1	37.6	15.7	28.9	25.0	20.0	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	8.6	0.9	0.2	0.1	0.3
Delay (s)	40.9	24.2	29.8	25.3	20.1	4.1
Level of Service	D	C	C	C	C	A
Approach Delay (s)	30.0		28.4			10.5
Approach LOS	C		C			B

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.7
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

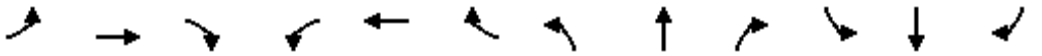
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	21	68	623	8	30	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	76	692	9	33	720
RTOR Reduction (vph)	0	61	0	4	0	0
Lane Group Flow (vph)	23	15	692	5	33	720
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.7	6.7	22.6	22.6	0.8	27.4
Effective Green, g (s)	8.7	8.7	25.3	25.3	2.8	30.1
Actuated g/C Ratio	0.20	0.20	0.58	0.58	0.06	0.69
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	682	314	2937	914	113	3494
v/s Ratio Prot	0.01		c0.14		c0.02	0.14
v/s Ratio Perm		c0.01		0.00		
v/c Ratio	0.03	0.05	0.24	0.01	0.29	0.21
Uniform Delay, d1	14.2	14.2	4.5	3.9	19.6	2.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.1	0.0	0.5	0.1
Delay (s)	14.2	14.2	4.6	3.9	20.1	2.5
Level of Service	B	B	A	A	C	A
Approach Delay (s)	14.2		4.6			3.3
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	4.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	43.8	Sum of lost time (s)	7.0
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	325	27	170	528	157	171	8	69	191	3	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5027		1770	5085	1583		1778	1583	1681	1688	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5027		1770	5085	1583		1778	1583	1681	1688	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	86	361	30	189	587	174	190	9	77	212	3	83
RTOR Reduction (vph)	0	10	0	0	0	116	0	0	62	0	0	68
Lane Group Flow (vph)	86	381	0	189	587	58	0	199	15	108	107	15
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	7.4	17.0		12.2	21.8	21.8		13.3	13.3	12.1	12.1	12.1
Effective Green, g (s)	8.4	19.3		13.2	24.1	24.1		14.3	14.3	13.1	13.1	13.1
Actuated g/C Ratio	0.12	0.27		0.18	0.34	0.34		0.20	0.20	0.18	0.18	0.18
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	207	1349		325	1704	531		354	315	306	308	288
v/s Ratio Prot	0.05	0.08		c0.11	c0.12			c0.11		c0.06	0.06	
v/s Ratio Perm						0.04			0.01			0.01
v/c Ratio	0.42	0.28		0.58	0.34	0.11		0.56	0.05	0.35	0.35	0.05
Uniform Delay, d1	29.5	20.8		26.8	18.0	16.5		26.0	23.3	25.7	25.7	24.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2		1.7	0.2	0.2		1.2	0.0	0.3	0.2	0.0
Delay (s)	30.0	21.1		28.5	18.2	16.7		27.2	23.3	26.0	25.9	24.3
Level of Service	C	C		C	B	B		C	C	C	C	C
Approach Delay (s)		22.7			20.0			26.1			25.5	
Approach LOS		C			B			C			C	

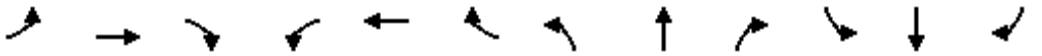
Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	302	267	195	572	125	474	526	63	107	597	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3482		1832	3663	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3482		1832	3663	1639
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	112	336	297	217	636	139	527	584	70	119	663	170
RTOR Reduction (vph)	0	0	245	0	0	93	0	7	0	0	0	126
Lane Group Flow (vph)	112	336	52	217	636	46	527	647	0	119	663	44
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	11.3	17.0	17.0	14.9	20.2	20.2	33.2	47.0		11.8	25.6	25.6
Effective Green, g (s)	12.3	19.0	19.0	15.9	22.9	22.9	34.2	49.3		12.8	27.9	27.9
Actuated g/C Ratio	0.11	0.17	0.17	0.15	0.21	0.21	0.31	0.45		0.12	0.26	0.26
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	200	617	276	258	744	333	556	1576		215	938	420
v/s Ratio Prot	0.06	0.09		c0.12	c0.18		c0.30	0.19		0.06	c0.18	
v/s Ratio Perm			0.03			0.03						0.03
v/c Ratio	0.56	0.54	0.19	0.84	0.85	0.14	0.95	0.41		0.55	0.71	0.10
Uniform Delay, d1	45.7	41.0	38.4	45.3	41.4	35.0	36.5	20.0		45.4	36.8	30.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	1.7	0.7	20.4	10.0	0.3	25.3	0.3		1.7	2.7	0.2
Delay (s)	47.9	42.7	39.0	65.7	51.4	35.3	61.7	20.3		47.1	39.5	31.1
Level of Service	D	D	D	E	D	D	E	C		D	D	C
Approach Delay (s)		42.0			52.3			38.8			39.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

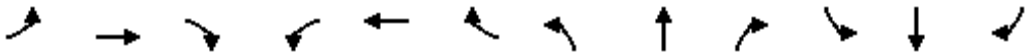


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	12	71	148	13	343	63	626	32	199	788	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1786	1583		1807	1597	1770	3736		1832	4029	1639
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1786	1583		1807	1597	1770	3736		1832	4029	1639
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	82	13	79	164	14	381	70	696	36	221	876	73
RTOR Reduction (vph)	0	0	68	0	0	152	0	3	0	0	0	44
Lane Group Flow (vph)	0	95	11	0	178	229	70	729	0	221	876	29
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		10.5	10.5		12.9	27.2	6.6	23.2		14.3	30.9	30.9
Effective Green, g (s)		10.5	10.5		12.9	29.2	6.6	25.5		15.3	33.2	30.9
Actuated g/C Ratio		0.13	0.13		0.16	0.37	0.08	0.33		0.20	0.42	0.40
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		240	213		298	658	149	1218		358	1711	648
v/s Ratio Prot		c0.05			c0.10	0.07	0.04	c0.20		c0.12	0.22	
v/s Ratio Perm			0.01			0.08						0.02
v/c Ratio		0.40	0.05		0.60	0.35	0.47	0.60		0.62	0.51	0.04
Uniform Delay, d1		30.9	29.5		30.2	17.6	34.1	22.1		28.8	16.5	14.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4	0.0		2.1	0.1	0.9	1.2		2.2	0.5	0.1
Delay (s)		31.3	29.5		32.4	17.8	35.0	23.3		31.0	17.1	14.6
Level of Service		C	C		C	B	C	C		C	B	B
Approach Delay (s)		30.5			22.4			24.3			19.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

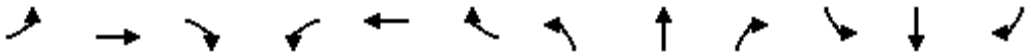
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	31	49	750	14	19	700
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	1.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3529		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3529		1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	34	54	833	16	21	778
RTOR Reduction (vph)	0	46	1	0	0	0
Lane Group Flow (vph)	34	8	848	0	21	778
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	5.8	5.8	26.0		0.9	32.7
Effective Green, g (s)	6.8	6.8	28.0		1.9	34.7
Actuated g/C Ratio	0.15	0.15	0.62		0.04	0.76
Clearance Time (s)	4.0	4.0	4.8		4.0	3.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	265	237	2172		74	2699
v/s Ratio Prot	c0.02		c0.24		0.01	c0.22
v/s Ratio Perm		0.01				
v/c Ratio	0.13	0.03	0.39		0.28	0.29
Uniform Delay, d1	16.8	16.5	4.4		21.1	1.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.1	0.1		2.1	0.1
Delay (s)	17.0	16.6	4.5		23.2	1.7
Level of Service	B	B	A		C	A
Approach Delay (s)	16.8		4.5			2.3
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	4.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	6.8
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	18	0	25	0	1423	27	22	1574	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		2.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3529		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3529		1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	20	0	28	0	1581	30	24	1749	0
RTOR Reduction (vph)	0	0	0	0	0	26	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	20	0	2	0	1610	0	24	1749	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				3.2		3.2		52.7		2.3	58.0	
Effective Green, g (s)				4.2		4.2		54.7		3.3	60.0	
Actuated g/C Ratio				0.05		0.05		0.70		0.04	0.77	
Clearance Time (s)				4.0		4.0		4.9		3.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				96		86		2484		75	2733	
v/s Ratio Prot				c0.01				0.46		0.01	c0.49	
v/s Ratio Perm						0.00						
v/c Ratio				0.21		0.02		0.65		0.32	0.64	
Uniform Delay, d1				35.2		34.8		6.3		36.1	4.0	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.4		0.0		0.9		0.9	0.7	
Delay (s)				35.6		34.8		7.1		37.0	4.7	
Level of Service				D		C		A		D	A	
Approach Delay (s)		0.0			35.1			7.1			5.1	
Approach LOS		A			D			A			A	

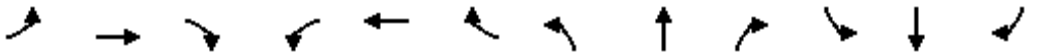
Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	17	23	45	8	67	27	1391	39	90	1492	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.87		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1701		1770	1571		1770	3519		1770	3529	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1701		1770	1571		1770	3519		1770	3529	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	19	26	50	9	74	30	1546	43	100	1658	24
RTOR Reduction (vph)	0	24	0	0	68	0	0	1	0	0	1	0
Lane Group Flow (vph)	57	21	0	50	15	0	30	1588	0	100	1681	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split			Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	6.8	6.8		7.2	7.2		4.0	57.8		8.1	62.3	
Effective Green, g (s)	7.8	7.8		8.2	8.2		5.0	59.8		9.1	64.3	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.05	0.62		0.09	0.66	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7		2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	142	137		149	133		91	2165		166	2335	
v/s Ratio Prot	c0.03	0.01		c0.03	0.01		0.02	0.45		c0.06	c0.48	
v/s Ratio Perm												
v/c Ratio	0.40	0.15		0.34	0.11		0.33	0.73		0.60	0.72	
Uniform Delay, d1	42.5	41.6		41.9	41.1		44.5	13.1		42.3	10.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.4		1.1	0.3		0.8	1.5		4.2	1.2	
Delay (s)	44.0	42.1		43.1	41.5		45.3	14.6		46.5	11.8	
Level of Service	D	D		D	D		D	B		D	B	
Approach Delay (s)		43.2			42.1			15.1			13.8	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

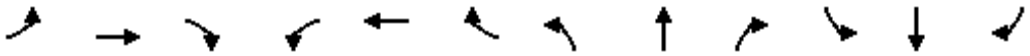
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	21	11	99	29	49	3	1349	12	44	1406	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.99	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		2043	1551		2032	1560	1770	3466		1770	3471	1539
Flt Permitted		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		2043	1551		2032	1560	1770	3466		1770	3471	1539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	47	23	12	110	32	54	3	1499	13	49	1562	60
RTOR Reduction (vph)	0	0	11	0	0	48	0	0	0	0	0	13
Lane Group Flow (vph)	0	70	1	0	142	6	3	1512	0	49	1562	47
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases			1			2						8
Actuated Green, G (s)		7.5	7.5		12.4	12.4	3.6	75.6		6.8	78.8	78.8
Effective Green, g (s)		8.5	8.5		13.4	13.4	4.6	78.3		7.8	81.5	81.5
Actuated g/C Ratio		0.07	0.07		0.11	0.11	0.04	0.65		0.06	0.68	0.68
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	3.8
Lane Grp Cap (vph)		145	110		227	174	68	2262		115	2357	1045
v/s Ratio Prot		c0.03			c0.07		0.00	c0.44		0.03	c0.45	
v/s Ratio Perm			0.00			0.00						0.03
v/c Ratio		0.48	0.01		0.63	0.03	0.04	0.67		0.43	0.66	0.05
Uniform Delay, d1		53.6	51.8		50.9	47.5	55.6	12.8		53.9	11.2	6.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.23	0.40	0.35
Incremental Delay, d2		0.9	0.0		3.8	0.0	0.1	0.8		0.6	0.9	0.1
Delay (s)		54.6	51.8		54.7	47.6	55.7	13.7		67.0	5.4	2.3
Level of Service		D	D		D	D	E	B		E	A	A
Approach Delay (s)		54.2			52.8			13.7			7.1	
Approach LOS		D			D			B			A	

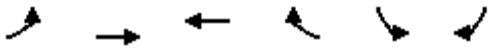
Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



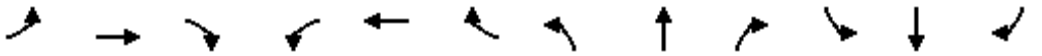
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	0	17	34	0	12	18	1404	17	21	1478	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00		0.97	1.00		0.96	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1535	1770		1524	1770	3531		1770	3536	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1535	1770		1524	1770	3531		1770	3536	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	0	19	38	0	13	20	1560	19	23	1642	9
RTOR Reduction (vph)	0	0	18	0	0	12	0	0	0	0	0	0
Lane Group Flow (vph)	14	0	1	38	0	1	20	1579	0	23	1651	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	6.8		6.8	6.8		6.8	2.9	94.5		4.2	95.8	
Effective Green, g (s)	7.8		7.8	7.8		7.8	3.9	96.0		6.2	97.3	
Actuated g/C Ratio	0.06		0.06	0.06		0.06	0.03	0.77		0.05	0.78	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	110		96	110		95	55	2712		88	2752	
v/s Ratio Prot	0.01			c0.02			c0.01	0.45		0.01	c0.47	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.13		0.01	0.35		0.01	0.36	0.58		0.26	0.60	
Uniform Delay, d1	55.4		55.0	56.2		55.0	59.3	6.1		57.2	5.8	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2		0.0	0.7		0.0	1.5	0.9		0.6	0.4	
Delay (s)	55.6		55.0	56.8		55.0	60.8	7.0		57.8	6.2	
Level of Service	E		E	E		D	E	A		E	A	
Approach Delay (s)		55.2			56.4			7.7			6.9	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



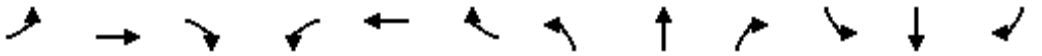
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	20	327	341	9	35	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	3.9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	363	379	10	39	41
RTOR Reduction (vph)	0	0	0	4	0	36
Lane Group Flow (vph)	22	363	379	6	39	5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.8	29.6	24.8	24.8	5.0	5.0
Effective Green, g (s)	1.8	30.6	25.8	25.8	6.0	6.0
Actuated g/C Ratio	0.04	0.68	0.57	0.57	0.13	0.13
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	2.0
Lane Grp Cap (vph)	70	2396	2020	904	235	210
v/s Ratio Prot	c0.01	0.10	c0.11		c0.02	
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.31	0.15	0.19	0.01	0.17	0.03
Uniform Delay, d1	21.1	2.6	4.7	4.2	17.4	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	0.1	0.0	0.1	0.0
Delay (s)	22.0	2.7	4.7	4.2	17.5	17.1
Level of Service	C	A	A	A	B	B
Approach Delay (s)		3.8	4.7		17.3	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	11.6
Intersection Capacity Utilization	26.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



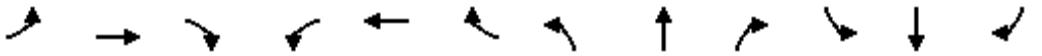
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	209	269	119	310	37	371	500	85	10	458	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	40	232	299	132	344	41	412	556	94	11	509	130
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	40	232	299	132	344	41	412	556	94	11	509	130
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	4.4	15.5	100.3	11.8	23.3	100.3	28.5	52.9	100.3	1.1	25.5	100.3
Effective Green, g (s)	5.4	18.2	100.3	12.8	26.0	100.3	29.5	55.2	100.3	2.1	27.8	100.3
Actuated g/C Ratio	0.05	0.18	1.00	0.13	0.26	1.00	0.29	0.55	1.00	0.02	0.28	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	95	642	1583	226	917	1583	521	1948	1583	37	981	1583
v/s Ratio Prot	0.02	0.07		c0.07	c0.10		c0.23	0.16		0.01	c0.14	
v/s Ratio Perm			0.19			0.03			0.06			0.08
v/c Ratio	0.42	0.36	0.19	0.58	0.38	0.03	0.79	0.29	0.06	0.30	0.52	0.08
Uniform Delay, d1	45.9	36.0	0.0	41.2	30.5	0.0	32.6	12.0	0.0	48.4	30.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.6	0.3	2.5	0.5	0.0	7.5	0.2	0.1	1.6	0.9	0.1
Delay (s)	47.0	36.5	0.3	43.7	31.0	0.0	40.1	12.2	0.1	50.0	31.5	0.1
Level of Service	D	D	A	D	C	A	D	B	A	D	C	A
Approach Delay (s)		18.3			31.8			21.9			25.5	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	21	162	163	34	166	46	636	18	43	1022	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1789	1583	1770	3525		1770	3530	
Flt Permitted		0.93	1.00		0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1736	1583		1384	1583	1770	3525		1770	3530	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	23	180	181	38	184	51	707	20	48	1136	21
RTOR Reduction (vph)	0	0	139	0	0	142	0	3	0	0	2	0
Lane Group Flow (vph)	0	29	41	0	219	42	51	724	0	48	1155	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		12.2	12.2		12.2	12.2	6.2	29.0		4.2	28.0	
Effective Green, g (s)		13.8	13.8		13.8	13.8	7.2	31.7		5.2	30.7	
Actuated g/C Ratio		0.23	0.23		0.23	0.23	0.12	0.53		0.09	0.51	
Clearance Time (s)		4.9	4.9		4.9	4.9	3.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		399	364		318	364	212	1862		153	1806	
v/s Ratio Prot							0.03	c0.21		0.03	c0.33	
v/s Ratio Perm		0.02	0.03		c0.16	0.03						
v/c Ratio		0.07	0.11		0.69	0.12	0.24	0.39		0.31	0.64	
Uniform Delay, d1		18.1	18.3		21.1	18.3	23.9	8.4		25.7	10.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.1		5.6	0.1	0.2	0.2		0.4	1.7	
Delay (s)		18.1	18.4		26.7	18.4	24.1	8.6		26.2	12.4	
Level of Service		B	B		C	B	C	A		C	B	
Approach Delay (s)		18.3			22.9			9.6			12.9	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.3
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

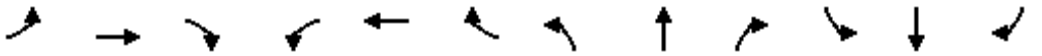


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	2	4	46	4	56	5	659	20	42	1220	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.97			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1745			1780	1583	1770	3524		1770	3533	
Flt Permitted		0.87			0.76	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1564			1413	1583	1770	3524		1770	3533	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	2	4	51	4	62	6	732	22	47	1356	16
RTOR Reduction (vph)	0	3	0	0	0	53	0	1	0	0	0	0
Lane Group Flow (vph)	0	13	0	0	55	9	6	753	0	47	1372	0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4		4						
Actuated Green, G (s)		11.9			11.9	11.9	1.1	59.0		5.4	63.3	
Effective Green, g (s)		12.9			12.9	12.9	2.1	62.0		6.4	66.3	
Actuated g/C Ratio		0.14			0.14	0.14	0.02	0.69		0.07	0.74	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0			3.0	3.0	2.0	4.3		3.0	4.3	
Lane Grp Cap (vph)		224			203	227	41	2428		126	2603	
v/s Ratio Prot							0.00	0.21		c0.03	c0.39	
v/s Ratio Perm		0.01			c0.04	0.01						
v/c Ratio		0.06			0.27	0.04	0.15	0.31		0.37	0.53	
Uniform Delay, d1		33.3			34.4	33.2	43.1	5.5		39.9	5.1	
Progression Factor		1.00			1.00	1.00	1.05	1.04		1.00	1.00	
Incremental Delay, d2		0.1			0.7	0.1	0.6	0.1		1.9	0.8	
Delay (s)		33.4			35.1	33.3	45.9	5.9		41.7	5.9	
Level of Service		C			D	C	D	A		D	A	
Approach Delay (s)		33.4			34.1			6.2			7.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

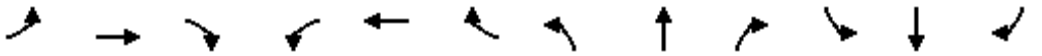
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	23	71	634	10	95	1179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3531		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3531		1770	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	79	704	11	106	1310
RTOR Reduction (vph)	0	69	1	0	0	0
Lane Group Flow (vph)	26	10	714	0	106	1310
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	10.1	10.1	57.5		8.7	70.2
Effective Green, g (s)	11.1	11.1	60.5		9.7	73.2
Actuated g/C Ratio	0.12	0.12	0.67		0.11	0.81
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	218	195	2374		191	2878
v/s Ratio Prot	c0.01		0.20		c0.06	c0.37
v/s Ratio Perm		0.01				
v/c Ratio	0.12	0.05	0.30		0.55	0.46
Uniform Delay, d1	35.1	34.8	6.1		38.1	2.5
Progression Factor	1.00	1.00	1.00		0.83	1.62
Incremental Delay, d2	0.1	0.0	0.1		1.8	0.5
Delay (s)	35.2	34.8	6.1		33.3	4.5
Level of Service	D	C	A		C	A
Approach Delay (s)	34.9		6.1			6.7
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



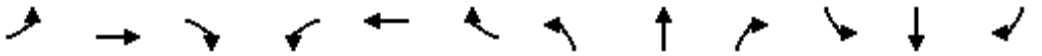
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	166	0	179	1	3	2	233	887	1	1	654	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5	3.5		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1665	1665	1437		1764		1660	3417	1544	1814	3491	1500
Flt Permitted	0.95	0.95	1.00		0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1665	1665	1437		1764		1660	3417	1544	1814	3491	1500
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	184	0	199	1	3	2	259	986	1	1	727	134
RTOR Reduction (vph)	0	0	161	0	2	0	0	0	0	0	0	84
Lane Group Flow (vph)	92	92	38	0	4	0	259	986	1	1	727	50
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.7	11.7	11.7		1.2		17.4	40.9	40.9	1.1	24.6	24.6
Effective Green, g (s)	14.2	14.2	14.2		2.2		18.4	44.3	44.3	2.1	28.0	28.0
Actuated g/C Ratio	0.19	0.19	0.19		0.03		0.24	0.59	0.59	0.03	0.37	0.37
Clearance Time (s)	6.0	6.0	6.0		4.0		4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)	4.1	4.1	4.1		2.0		2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	314	314	271		52		406	2010	908	51	1298	558
v/s Ratio Prot	c0.06	0.06			c0.00		c0.16	0.29		0.00	c0.21	
v/s Ratio Perm			0.03						0.00			0.03
v/c Ratio	0.29	0.29	0.14		0.08		0.64	0.49	0.00	0.02	0.56	0.09
Uniform Delay, d1	26.2	26.2	25.5		35.6		25.5	9.0	6.4	35.6	18.8	15.4
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.7	0.3		0.2		2.4	0.3	0.0	0.1	0.7	0.1
Delay (s)	27.0	27.0	25.8		35.8		27.9	9.3	6.4	35.7	19.5	15.5
Level of Service	C	C	C		D		C	A	A	D	B	B
Approach Delay (s)		26.4			35.8			13.1			18.9	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	12.5
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



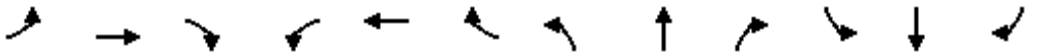
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	0	8	2	0	2	6	1108	2	5	825	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4	6.4	4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	9	2	0	2	7	1231	2	6	917	6
RTOR Reduction (vph)	0	0	9	0	0	2	0	0	0	0	0	1
Lane Group Flow (vph)	0	6	0	0	2	0	7	1231	2	6	917	5
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)		1.1	1.1		3.1	3.1	0.6	44.0	44.0	0.6	44.0	44.0
Effective Green, g (s)		1.1	2.1		3.1	3.1	1.6	45.0	44.0	0.6	45.0	45.0
Actuated g/C Ratio		0.02	0.03		0.05	0.05	0.02	0.67	0.65	0.01	0.67	0.67
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)		29	49		82	73	42	2370	1036	16	2370	1060
v/s Ratio Prot		c0.00			c0.00		c0.00	c0.35		0.00	0.26	
v/s Ratio Perm			0.00			0.00			0.00			0.00
v/c Ratio		0.21	0.01		0.02	0.00	0.17	0.52	0.00	0.38	0.39	0.00
Uniform Delay, d1		32.6	31.5		30.6	30.6	32.1	5.6	4.0	33.1	4.9	3.7
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.3	0.0		0.0	0.0	0.7	0.3	0.0	5.3	0.2	0.0
Delay (s)		33.9	31.6		30.6	30.6	32.8	5.9	4.0	38.4	5.1	3.7
Level of Service		C	C		C	C	C	A	A	D	A	A
Approach Delay (s)		32.5			30.6			6.1			5.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	67.2	Sum of lost time (s)	16.4
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



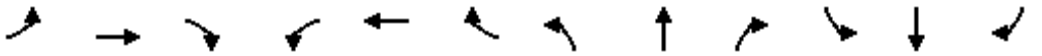
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	2	242	13	9	2	243	1012	19	6	799	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1688	1583	1610	3282		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1688	1583	1610	3282		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	121	2	269	14	10	2	270	1124	21	7	888	38
RTOR Reduction (vph)	0	0	218	0	2	0	0	0	8	0	0	25
Lane Group Flow (vph)	62	61	51	9	15	0	270	1124	13	7	888	13
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.4	11.4	11.4	2.7	2.7		16.6	38.3	38.3	0.8	22.1	22.1
Effective Green, g (s)	14.1	14.1	14.1	3.7	3.7		17.6	41.7	41.7	1.8	25.5	25.5
Actuated g/C Ratio	0.19	0.19	0.19	0.05	0.05		0.24	0.56	0.56	0.02	0.34	0.34
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	318	319	299	80	163		418	1978	885	43	1738	541
v/s Ratio Prot	c0.04	0.04		c0.01	0.00		c0.15	c0.32		0.00	0.17	
v/s Ratio Perm			0.03						0.01			0.01
v/c Ratio	0.19	0.19	0.17	0.11	0.09		0.65	0.57	0.01	0.16	0.51	0.02
Uniform Delay, d1	25.5	25.5	25.3	33.9	33.8		25.7	10.6	7.3	35.7	19.6	16.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.4	1.0	0.4		2.6	0.6	0.0	0.7	0.4	0.0
Delay (s)	25.9	25.9	25.8	34.9	34.2		28.3	11.2	7.3	36.3	20.0	16.3
Level of Service	C	C	C	C	C		C	B	A	D	B	B
Approach Delay (s)		25.8			34.5			14.4			19.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	74.6	Sum of lost time (s)	10.7
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



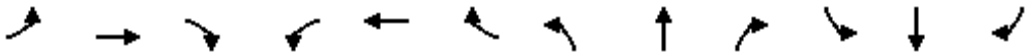
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	215	4	175	109	7	83	121	1162	48	89	1040	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1688	1583		1779	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1688	1583		1779	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	239	4	194	121	8	92	134	1291	53	99	1156	68
RTOR Reduction (vph)	0	0	169	0	0	81	0	0	20	0	0	31
Lane Group Flow (vph)	122	121	25	0	129	11	134	1291	33	99	1156	37
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	14.2	14.2	14.2		13.7	13.7	13.4	62.6	62.6	11.8	61.7	61.7
Effective Green, g (s)	15.2	15.2	15.2		14.7	14.7	14.4	65.6	63.6	12.8	64.7	64.7
Actuated g/C Ratio	0.13	0.13	0.13		0.12	0.12	0.12	0.55	0.53	0.11	0.54	0.54
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	5.3
Lane Grp Cap (vph)	213	214	201		218	194	212	2780	839	189	2742	854
v/s Ratio Prot	c0.07	0.07			c0.07		c0.08	c0.25		c0.06	0.23	
v/s Ratio Perm			0.02			0.01			0.02			0.02
v/c Ratio	0.57	0.57	0.12		0.59	0.06	0.63	0.46	0.04	0.52	0.42	0.04
Uniform Delay, d1	49.3	49.3	46.5		49.8	46.5	50.3	16.5	13.5	50.7	16.5	13.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	2.0	0.1		2.9	0.0	4.5	0.6	0.1	1.2	0.2	0.0
Delay (s)	51.6	51.3	46.6		52.7	46.6	54.7	17.1	13.6	51.9	16.7	13.1
Level of Service	D	D	D		D	D	D	B	B	D	B	B
Approach Delay (s)		49.3			50.1			20.4			19.2	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



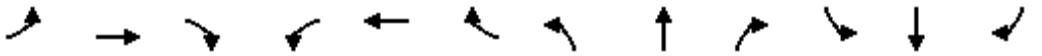
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	130	211	31	84	3	296	1318	67	22	1347	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	190	144	234	34	93	3	329	1464	74	24	1497	317
RTOR Reduction (vph)	0	0	179	0	0	3	0	0	20	0	0	97
Lane Group Flow (vph)	190	144	55	34	93	0	329	1464	54	24	1497	220
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.2	25.7	25.7	6.0	14.5	14.5	15.8	63.2	63.2	5.4	52.8	52.8
Effective Green, g (s)	18.2	28.4	28.4	7.0	17.2	17.2	16.8	66.2	66.2	6.4	55.8	55.8
Actuated g/C Ratio	0.15	0.24	0.24	0.06	0.14	0.14	0.14	0.55	0.55	0.05	0.46	0.46
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3	2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	268	441	375	103	267	227	481	1952	873	94	1646	736
v/s Ratio Prot	c0.11	c0.08		0.02	0.05		c0.10	0.41		0.01	c0.42	
v/s Ratio Perm			0.03			0.00			0.03			0.14
v/c Ratio	0.71	0.33	0.15	0.33	0.35	0.00	0.68	0.75	0.06	0.26	0.91	0.30
Uniform Delay, d1	48.4	37.9	36.2	54.2	46.3	44.0	49.1	20.6	12.5	54.5	29.8	19.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	0.7	0.3	0.7	1.2	0.0	3.2	2.7	0.1	0.5	8.1	0.4
Delay (s)	55.2	38.6	36.5	54.9	47.6	44.0	52.3	23.3	12.6	55.0	37.9	20.4
Level of Service	E	D	D	D	D	D	D	C	B	E	D	C
Approach Delay (s)		43.3			49.4			28.0			35.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	33.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



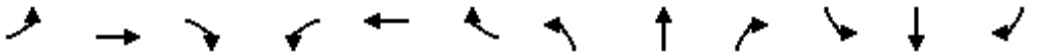
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	314	20	1	211	7	18	2	0	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			1.00			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.98	
Satd. Flow (prot)	1770	3508		1770	3522			1782			1695	
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.98	
Satd. Flow (perm)	1770	3508		1770	3522			1782			1695	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	349	22	1	234	8	20	2	0	6	0	6
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	0	0	6	0
Lane Group Flow (vph)	7	369	0	1	241	0	0	22	0	0	6	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.9	26.3		0.6	26.0			4.1			1.0	
Effective Green, g (s)	1.9	29.0		1.6	28.7			5.1			2.0	
Actuated g/C Ratio	0.04	0.58		0.03	0.58			0.10			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	68	2047		57	2034			183			68	
v/s Ratio Prot	c0.00	c0.11		0.00	0.07			c0.01			c0.00	
v/s Ratio Perm												
v/c Ratio	0.10	0.18		0.02	0.12			0.12			0.09	
Uniform Delay, d1	23.1	4.8		23.3	4.8			20.3			23.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.1		0.0	0.0			0.1			0.2	
Delay (s)	23.3	4.9		23.3	4.8			20.4			23.2	
Level of Service	C	A		C	A			C			C	
Approach Delay (s)		5.2			4.9			20.4			23.2	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	49.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



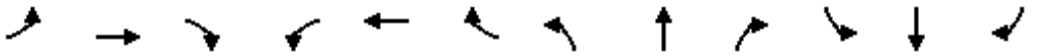
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	328	18	16	251	29	5	1	12	25	0	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.91			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1674			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1674			1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	214	364	20	18	279	32	6	1	13	28	0	114
RTOR Reduction (vph)	0	0	9	0	0	21	0	13	0	0	0	93
Lane Group Flow (vph)	214	364	11	18	279	11	0	7	0	0	28	21
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	11.8	28.3	28.3	0.8	17.3	17.3		1.0			8.6	8.6
Effective Green, g (s)	12.8	31.3	31.3	1.8	20.3	20.3		2.0			10.6	10.6
Actuated g/C Ratio	0.22	0.54	0.54	0.03	0.35	0.35		0.03			0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	388	1897	848	55	1230	550		57			321	287
v/s Ratio Prot	c0.12	0.10		0.01	c0.08			c0.00			c0.02	
v/s Ratio Perm			0.01			0.01						0.01
v/c Ratio	0.55	0.19	0.01	0.33	0.23	0.02		0.13			0.09	0.07
Uniform Delay, d1	20.3	7.0	6.3	27.7	13.5	12.5		27.4			19.9	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	1.0	0.1	0.0	1.3	0.1	0.0		0.4			0.0	0.0
Delay (s)	21.2	7.1	6.3	29.0	13.6	12.5		27.7			19.9	19.9
Level of Service	C	A	A	C	B	B		C			B	B
Approach Delay (s)		12.1			14.3			27.7			19.9	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	12.7
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



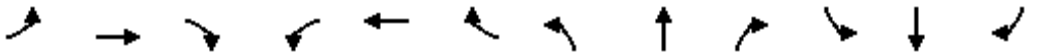
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	212	10	10	156	141	1	9	7	92	9	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1854	1583		1782	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1854	1583		1782	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	236	11	11	173	157	1	10	8	102	10	44
RTOR Reduction (vph)	0	0	6	0	0	97	0	0	8	0	0	34
Lane Group Flow (vph)	57	236	5	11	173	60	0	11	0	0	112	10
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	2.4	17.0	17.0	0.6	14.2	14.2		1.0	1.0		9.7	9.7
Effective Green, g (s)	3.4	20.0	20.0	1.6	17.2	17.2		2.0	2.0		10.7	10.7
Actuated g/C Ratio	0.08	0.44	0.44	0.04	0.38	0.38		0.04	0.04		0.24	0.24
Clearance Time (s)	4.0	6.0	6.0	3.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	133	1562	699	63	1344	601		82	70		421	374
v/s Ratio Prot	c0.03	c0.07		0.01	0.05			c0.01			c0.06	
v/s Ratio Perm			0.00			0.04			0.00			0.01
v/c Ratio	0.43	0.15	0.01	0.17	0.13	0.10		0.13	0.01		0.27	0.03
Uniform Delay, d1	20.0	7.6	7.1	21.2	9.2	9.1		20.8	20.7		14.1	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	0.1	0.0	0.5	0.0	0.1		0.3	0.0		0.1	0.0
Delay (s)	20.8	7.6	7.1	21.7	9.2	9.1		21.1	20.7		14.2	13.3
Level of Service	C	A	A	C	A	A		C	C		B	B
Approach Delay (s)		10.1			9.6			20.9			14.0	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



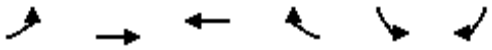
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	184	22	56	279	155	38	246	79	83	291	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	2.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	204	24	62	310	172	42	273	88	92	323	298
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	269	204	24	62	310	172	42	273	88	92	323	298
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.7	25.7	69.8	4.2	18.2	69.8	4.2	15.0	69.8	6.2	17.3	69.8
Effective Green, g (s)	11.7	28.7	69.8	5.2	21.2	69.8	5.2	17.7	69.8	7.2	20.0	69.8
Actuated g/C Ratio	0.17	0.41	1.00	0.07	0.30	1.00	0.07	0.25	1.00	0.10	0.29	1.00
Clearance Time (s)	4.0	5.7		3.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	575	1455	1583	256	1075	1583	256	897	1583	354	1014	1583
v/s Ratio Prot	c0.08	0.06		0.02	c0.09		0.01	0.08		0.03	c0.09	
v/s Ratio Perm			0.02			0.11			0.06			c0.19
v/c Ratio	0.47	0.14	0.02	0.24	0.29	0.11	0.16	0.30	0.06	0.26	0.32	0.19
Uniform Delay, d1	26.2	12.8	0.0	30.4	18.5	0.0	30.3	21.1	0.0	28.8	19.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.0	0.2	0.3	0.1	0.1	0.3	0.1	0.1	0.3	0.3
Delay (s)	26.5	12.9	0.0	30.6	18.8	0.1	30.4	21.3	0.1	29.0	19.9	0.3
Level of Service	C	B	A	C	B	A	C	C	A	C	B	A
Approach Delay (s)		19.6			14.2			17.6			12.8	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	69.8	Sum of lost time (s)	5.7
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



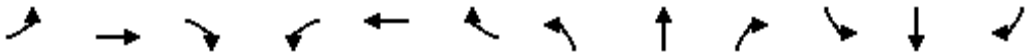
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	333	20	25	442	44	42	172	21	49	54	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3509		1770	3491		1770	1833		1770	1745	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3509		1770	3491		1770	1833		1770	1745	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	370	22	28	491	49	47	191	23	54	60	44
RTOR Reduction (vph)	0	4	0	0	6	0	0	4	0	0	21	0
Lane Group Flow (vph)	22	388	0	28	534	0	47	210	0	54	83	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.8	17.5		2.0	17.7		4.1	14.0		4.1	14.0	
Effective Green, g (s)	2.8	20.2		3.0	20.4		5.1	16.3		5.1	16.3	
Actuated g/C Ratio	0.05	0.36		0.05	0.36		0.09	0.29		0.09	0.29	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	88	1261		94	1267		161	532		161	506	
v/s Ratio Prot	0.01	0.11		c0.02	c0.15		0.03	c0.11		c0.03	0.05	
v/s Ratio Perm												
v/c Ratio	0.25	0.31		0.30	0.42		0.29	0.40		0.34	0.16	
Uniform Delay, d1	25.7	13.0		25.6	13.5		23.9	16.0		24.0	14.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.2		0.6	0.3		0.4	0.6		0.5	0.2	
Delay (s)	26.2	13.1		26.2	13.8		24.2	16.6		24.4	15.1	
Level of Service	C	B		C	B		C	B		C	B	
Approach Delay (s)		13.8			14.4			18.0			18.3	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	56.2	Sum of lost time (s)	8.6
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



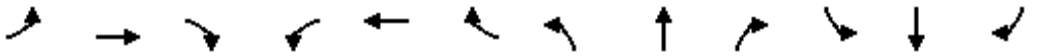
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	431	634	34	39	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3512		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3512		1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	479	704	38	43	1
RTOR Reduction (vph)	0	0	3	0	0	1
Lane Group Flow (vph)	11	479	739	0	43	0
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	0.8	33.7	28.9		5.7	5.7
Effective Green, g (s)	1.8	36.4	31.6		6.7	6.7
Actuated g/C Ratio	0.04	0.74	0.64		0.14	0.14
Clearance Time (s)	4.0	5.7	5.7		4.0	4.0
Vehicle Extension (s)	2.0	3.8	3.8		2.0	2.0
Lane Grp Cap (vph)	65	2624	2260		242	216
v/s Ratio Prot	0.01	c0.14	c0.21		c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.17	0.18	0.33		0.18	0.00
Uniform Delay, d1	22.9	1.9	4.0		18.8	18.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.5	0.0	0.1		0.1	0.0
Delay (s)	23.4	1.9	4.1		18.9	18.3
Level of Service	C	A	A		B	B
Approach Delay (s)		2.4	4.1		18.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	49.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



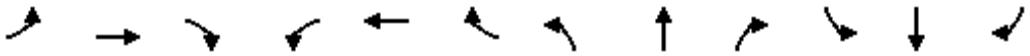
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	417	52	64	680	0	59	0	48	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7		2.0	2.7			2.0	2.0			
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00			
Frt		0.98		1.00	1.00			1.00	0.85			
Flt Protected		1.00		0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3480		1770	3539			1770	1583			
Flt Permitted		1.00		0.95	1.00			0.95	1.00			
Satd. Flow (perm)		3480		1770	3539			1770	1583			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	463	58	71	756	0	66	0	53	0	0	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	41	0	0	0
Lane Group Flow (vph)	0	514	0	71	756	0	0	66	12	0	0	0
Turn Type	Prot			Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)		19.3		4.6	27.9			8.3	8.3			
Effective Green, g (s)		22.3		6.6	30.9			10.3	10.3			
Actuated g/C Ratio		0.49		0.14	0.67			0.22	0.22			
Clearance Time (s)		5.7		4.0	5.7			4.0	4.0			
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		1691		255	2382			397	355			
v/s Ratio Prot		0.15		0.04	c0.21			c0.04				
v/s Ratio Perm									0.01			
v/c Ratio		0.30		0.28	0.32			0.17	0.03			
Uniform Delay, d1		7.1		17.5	3.1			14.3	13.9			
Progression Factor		1.00		1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.1		0.6	0.1			0.2	0.0			
Delay (s)		7.2		18.1	3.2			14.5	13.9			
Level of Service		A		B	A			B	B			
Approach Delay (s)		7.2			4.5			14.3			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	4.7
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



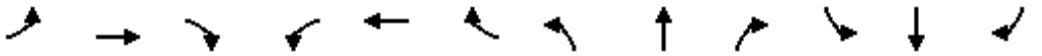
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	435	12	100	783	32	34	17	101	19	9	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3525		1770	3518			1803	1583		1802	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.82	1.00		0.83	1.00
Satd. Flow (perm)	1770	3525		1770	3518			1536	1583		1553	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	483	13	111	870	36	38	19	112	21	10	27
RTOR Reduction (vph)	0	2	0	0	2	0	0	0	90	0	0	22
Lane Group Flow (vph)	20	494	0	111	904	0	0	57	22	0	31	5
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	0.9	22.1		6.7	27.9			9.0	9.0		9.0	9.0
Effective Green, g (s)	1.9	24.8		7.7	30.6			10.0	10.0		10.0	10.0
Actuated g/C Ratio	0.04	0.48		0.15	0.59			0.19	0.19		0.19	0.19
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	65	1697		265	2090			298	307		302	307
v/s Ratio Prot	0.01	0.14		c0.06	c0.26							
v/s Ratio Perm								c0.04	0.01		0.02	0.00
v/c Ratio	0.31	0.29		0.42	0.43			0.19	0.07		0.10	0.02
Uniform Delay, d1	24.2	8.1		19.9	5.7			17.4	17.0		17.1	16.8
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	0.1		0.4	0.2			0.1	0.0		0.1	0.0
Delay (s)	25.1	8.2		20.3	5.9			17.5	17.0		17.1	16.8
Level of Service	C	A		C	A			B	B		B	B
Approach Delay (s)		8.8			7.5			17.2			17.0	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	292	5	4	397	20	5	0	12	36	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99			0.91		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	1858		1770	1849			1664		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)	1770	1858		1770	1849			1664		1770	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	18	324	6	4	441	22	6	0	13	40	0	28
RTOR Reduction (vph)	0	0	0	0	1	0	0	13	0	0	24	0
Lane Group Flow (vph)	18	330	0	4	462	0	0	6	0	40	4	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	0.9	29.3		0.7	29.1			0.9		6.0	6.0	
Effective Green, g (s)	1.9	32.0		1.7	31.8			1.9		7.0	7.0	
Actuated g/C Ratio	0.03	0.59		0.03	0.58			0.03		0.13	0.13	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	62	1089		55	1077			58		227	203	
v/s Ratio Prot	c0.01	0.18		0.00	c0.25			c0.00		c0.02	0.00	
v/s Ratio Perm												
v/c Ratio	0.29	0.30		0.07	0.43			0.11		0.18	0.02	
Uniform Delay, d1	25.7	5.7		25.7	6.3			25.5		21.2	20.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.2		0.2	0.4			0.6		0.1	0.0	
Delay (s)	26.6	5.9		25.9	6.7			26.2		21.4	20.8	
Level of Service	C	A		C	A			C		C	C	
Approach Delay (s)		7.0			6.9			26.2			21.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



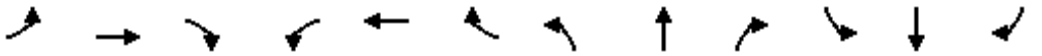
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	6	8	384	7	19	71	339	354	84	304	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	6	8	404	7	20	75	357	373	88	320	1
RTOR Reduction (vph)	0	0	7	0	0	14	0	0	285	0	0	1
Lane Group Flow (vph)	2	6	1	404	7	6	75	357	88	88	320	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.7	3.7	3.7	11.1	14.1	14.1	3.6	11.8	11.8	3.7	11.9	11.9
Effective Green, g (s)	0.7	3.7	3.7	11.1	14.1	14.1	3.6	11.8	11.8	3.7	11.9	11.9
Actuated g/C Ratio	0.01	0.07	0.07	0.22	0.28	0.28	0.07	0.23	0.23	0.07	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	48	137	116	758	522	444	246	1193	371	253	1203	375
v/s Ratio Prot	0.00	c0.00		c0.12	0.00		0.02	c0.07		c0.03	0.06	
v/s Ratio Perm			0.00			0.00			0.06			0.00
v/c Ratio	0.04	0.04	0.01	0.53	0.01	0.01	0.30	0.30	0.24	0.35	0.27	0.00
Uniform Delay, d1	24.5	21.7	21.6	17.3	13.1	13.1	22.2	15.8	15.6	22.2	15.6	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.0	0.7	0.0	0.0	0.7	0.1	0.3	0.8	0.1	0.0
Delay (s)	24.8	21.8	21.6	18.0	13.1	13.1	22.9	16.0	15.9	23.0	15.8	14.7
Level of Service	C	C	C	B	B	B	C	B	B	C	B	B
Approach Delay (s)		22.1			17.7			16.6			17.3	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	50.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	0	9	0	0	0	7	10	0	0	12	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Lane Util. Factor	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770		1583				1770	1863			1863	1583
Flt Permitted	1.00		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	1863		1583				1770	1863			1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	68	0	10	0	0	0	8	11	0	0	13	63
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	0	0	0	55
Lane Group Flow (vph)	68	0	2	0	0	0	8	11	0	0	13	8
Turn Type	Perm		Perm	Prot		Perm	Split	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8		2	2			6	
Permitted Phases	4		4			8			2	6		6
Actuated Green, G (s)	3.7		3.7				1.8	1.8			2.8	2.8
Effective Green, g (s)	3.7		3.7				1.8	1.8			2.8	2.8
Actuated g/C Ratio	0.16		0.16				0.08	0.08			0.12	0.12
Clearance Time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	295		251				136	143			223	190
v/s Ratio Prot							0.00	c0.01			c0.01	
v/s Ratio Perm	c0.04		0.00									0.00
v/c Ratio	0.23		0.01				0.06	0.08			0.06	0.04
Uniform Delay, d1	8.6		8.3				10.0	10.0			9.1	9.1
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	0.4		0.0				0.2	0.2			0.1	0.1
Delay (s)	9.0		8.3				10.1	10.2			9.2	9.1
Level of Service	A		A				B	B			A	A
Approach Delay (s)		8.9			0.0			10.2			9.2	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	23.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	17.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

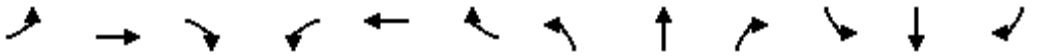


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	20	110	93	30	43	120	854	225	89	497	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	21	116	98	32	45	126	899	237	94	523	95
RTOR Reduction (vph)	0	0	102	0	0	41	0	0	156	0	0	63
Lane Group Flow (vph)	105	21	14	98	32	4	126	899	81	94	523	32
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.8	7.2	7.2	6.7	5.1	5.1	7.0	20.9	20.9	6.5	20.4	20.4
Effective Green, g (s)	8.8	7.2	7.2	6.7	5.1	5.1	7.0	20.9	20.9	6.5	20.4	20.4
Actuated g/C Ratio	0.14	0.12	0.12	0.11	0.08	0.08	0.11	0.34	0.34	0.11	0.33	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	254	219	186	193	155	132	202	1734	540	188	1692	527
v/s Ratio Prot	c0.06	0.01		0.06	c0.02		c0.07	c0.18		0.05	0.10	
v/s Ratio Perm			0.01			0.00			0.05			0.02
v/c Ratio	0.41	0.10	0.07	0.51	0.21	0.03	0.62	0.52	0.15	0.50	0.31	0.06
Uniform Delay, d1	23.9	24.1	24.1	25.7	26.2	25.8	25.9	16.2	14.0	25.9	15.2	13.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.2	0.2	2.1	0.7	0.1	5.9	0.3	0.1	2.1	0.1	0.0
Delay (s)	25.0	24.3	24.2	27.8	26.9	25.9	31.8	16.4	14.2	28.0	15.3	14.0
Level of Service	C	C	C	C	C	C	C	B	B	C	B	B
Approach Delay (s)		24.6			27.2			17.5			16.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

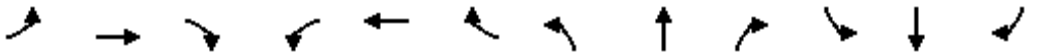
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	0	8	0	0	0	10	4	0	0	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Lane Util. Factor	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770		1583				1770	1863			1863	1583
Flt Permitted	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	1770		1583				1770	1863			1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	8	0	9	0	0	0	11	4	0	0	6	11
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	10
Lane Group Flow (vph)	8	0	3	0	0	0	11	4	0	0	6	1
Turn Type	Prot		Perm	Prot		Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5		7.2				0.5	7.2			1.7	1.7
Effective Green, g (s)	0.5		7.2				0.5	7.2			1.7	1.7
Actuated g/C Ratio	0.02		0.30				0.02	0.30			0.07	0.07
Clearance Time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	36		467				36	549			129	110
v/s Ratio Prot	c0.00						c0.01	0.00			c0.00	
v/s Ratio Perm			c0.00									0.00
v/c Ratio	0.22		0.01				0.31	0.01			0.05	0.01
Uniform Delay, d1	11.8		6.1				11.8	6.1			10.6	10.6
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	3.1		0.0				4.8	0.0			0.1	0.0
Delay (s)	14.9		6.1				16.5	6.1			10.7	10.6
Level of Service	B		A				B	A			B	B
Approach Delay (s)		10.2			0.0			13.8			10.6	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.08		
Actuated Cycle Length (s)	24.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	18.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



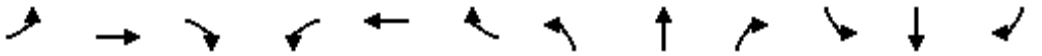
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	5	136	40	6	0	377	955	107	0	652	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00		0.97	0.91	1.00		0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863		3433	5085	1583		5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863		3433	5085	1583		5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	5	143	42	6	0	397	1005	113	0	686	2
RTOR Reduction (vph)	0	0	126	0	0	0	0	0	49	0	0	1
Lane Group Flow (vph)	2	5	17	42	6	0	397	1005	64	0	686	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	6.4	6.4	2.1	7.7		10.8	30.2	30.2		14.4	14.4
Effective Green, g (s)	0.8	6.4	6.4	2.1	7.7		10.8	30.2	30.2		14.4	14.4
Actuated g/C Ratio	0.01	0.12	0.12	0.04	0.14		0.20	0.56	0.56		0.27	0.27
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	51	222	189	134	267		690	2860	890		1364	424
v/s Ratio Prot	0.00	0.00		c0.01	0.00		c0.12	0.20			c0.13	
v/s Ratio Perm			c0.01						0.04			0.00
v/c Ratio	0.04	0.02	0.09	0.31	0.02		0.58	0.35	0.07		0.50	0.00
Uniform Delay, d1	26.1	20.9	21.1	25.1	19.8		19.4	6.4	5.4		16.6	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.0	0.2	1.3	0.0		1.2	0.1	0.0		0.3	0.0
Delay (s)	26.4	20.9	21.3	26.4	19.8		20.5	6.5	5.4		16.9	14.4
Level of Service	C	C	C	C	B		C	A	A		B	B
Approach Delay (s)		21.3			25.6			10.1			16.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



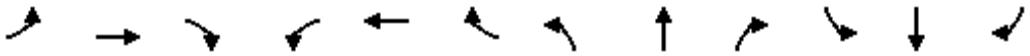
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	38	47	127	15	24	66	476	165	20	438	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	4.3	4.3	2.0	3.2	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1823	1583		1783	1583	1770	1863	1583	1770	3535	
Flt Permitted		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1823	1583		1783	1583	1770	1863	1583	1770	3535	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	42	52	141	17	27	73	529	183	22	487	4
RTOR Reduction (vph)	0	0	46	0	0	21	0	0	98	0	1	0
Lane Group Flow (vph)	0	75	6	0	158	6	73	529	85	22	490	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			
Actuated Green, G (s)		7.2	7.2		14.9	14.9	6.6	30.1	30.1	2.0	25.6	
Effective Green, g (s)		8.2	8.2		15.9	15.9	7.6	31.1	31.1	3.0	26.6	
Actuated g/C Ratio		0.12	0.12		0.23	0.23	0.11	0.44	0.44	0.04	0.38	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3	5.3	3.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		212	184		402	357	191	822	698	75	1334	
v/s Ratio Prot		c0.04			c0.09		c0.04	c0.28		0.01	0.14	
v/s Ratio Perm			0.00			0.00			0.05			
v/c Ratio		0.35	0.03		0.39	0.02	0.38	0.64	0.12	0.29	0.37	
Uniform Delay, d1		28.7	27.6		23.2	21.2	29.3	15.4	11.6	32.7	15.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4	0.0		0.2	0.0	0.5	1.3	0.0	0.8	0.2	
Delay (s)		29.1	27.7		23.4	21.2	29.7	16.7	11.7	33.5	16.0	
Level of Service		C	C		C	C	C	B	B	C	B	
Approach Delay (s)		28.5			23.1			16.7			16.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	13.3
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



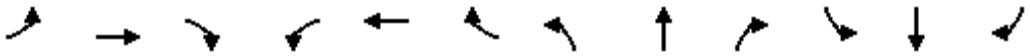
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	88	1	230	249	4	0	263	261	0	223	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1770	1860		1770	1859			1863	1583		1863	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1770	1860		1770	1859			1863	1583		1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	160	98	1	256	277	4	0	292	290	0	248	232
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	221	0	0	0
Lane Group Flow (vph)	160	99	0	256	281	0	0	292	69	0	248	232
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	15.2	15.2		23.7	23.7			22.7	22.7		19.6	99.8
Effective Green, g (s)	16.2	16.2		24.7	24.7			23.7	23.7		20.6	99.8
Actuated g/C Ratio	0.16	0.16		0.25	0.25			0.24	0.24		0.21	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		5.0	5.0			3.0	3.0		2.5	
Lane Grp Cap (vph)	287	302		438	460			442	376		385	1583
v/s Ratio Prot	c0.09	0.05		0.14	c0.15			c0.16			c0.13	
v/s Ratio Perm									0.04			0.15
v/c Ratio	0.56	0.33		0.58	0.61			0.66	0.18		0.64	0.15
Uniform Delay, d1	38.5	37.0		33.0	33.3			34.4	30.3		36.2	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.9	0.5		3.1	3.4			3.7	0.2		3.3	0.2
Delay (s)	40.4	37.4		36.1	36.7			38.1	30.6		39.5	0.2
Level of Service	D	D		D	D			D	C		D	A
Approach Delay (s)		39.3			36.4			34.3			20.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	99.8	Sum of lost time (s)	14.6
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



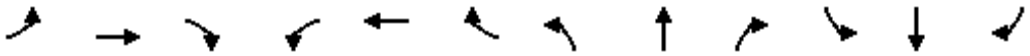
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	357	156	28	296	26	94	29	33	7	36	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00		1.00			0.96	1.00		0.99	
Satd. Flow (prot)		1858	1583		1837			1794	1583		1781	
Flt Permitted		0.98	1.00		0.96			0.81	1.00		0.96	
Satd. Flow (perm)		1821	1583		1766			1504	1583		1722	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	21	397	173	31	329	29	104	32	37	8	40	19
RTOR Reduction (vph)	0	0	47	0	3	0	0	0	31	0	16	0
Lane Group Flow (vph)	0	418	126	0	386	0	0	136	6	0	51	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		42.6	42.6		42.6			9.2	9.2		9.2	
Effective Green, g (s)		43.6	43.6		43.6			10.2	10.2		10.2	
Actuated g/C Ratio		0.73	0.73		0.73			0.17	0.17		0.17	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1323	1150		1283			256	269		293	
v/s Ratio Prot												
v/s Ratio Perm		c0.23	0.08		0.22			c0.09	0.00		0.03	
v/c Ratio		0.32	0.11		0.30			0.53	0.02		0.17	
Uniform Delay, d1		2.9	2.4		2.9			22.7	20.7		21.3	
Progression Factor		1.00	1.00		0.66			1.00	1.00		1.00	
Incremental Delay, d2		0.6	0.2		0.6			1.1	0.0		0.1	
Delay (s)		3.5	2.6		2.5			23.8	20.8		21.4	
Level of Service		A	A		A			C	C		C	
Approach Delay (s)		3.3			2.5			23.1			21.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



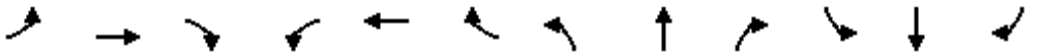
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	399	12	15	435	10	19	7	28	11	7	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2			3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.99	
Flt Protected		1.00			1.00			0.97	1.00		0.97	
Satd. Flow (prot)		1855			1854			1798	1583		1799	
Flt Permitted		1.00			0.98			0.79	1.00		0.84	
Satd. Flow (perm)		1852			1828			1475	1583		1551	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	443	13	17	483	11	21	8	31	12	8	1
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	28	0	1	0
Lane Group Flow (vph)	0	458	0	0	510	0	0	29	3	0	20	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		48.2			48.2			5.6	5.6		5.6	
Effective Green, g (s)		49.2			49.2			6.6	6.6		6.6	
Actuated g/C Ratio		0.79			0.79			0.11	0.11		0.11	
Clearance Time (s)		4.2			4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.5			2.5			2.0	2.0		2.0	
Lane Grp Cap (vph)		1470			1451			157	169		165	
v/s Ratio Prot												
v/s Ratio Perm		0.25			c0.28			c0.02	0.00		0.01	
v/c Ratio		0.31			0.35			0.18	0.02		0.12	
Uniform Delay, d1		1.8			1.8			25.2	24.8		25.1	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.6			0.7			0.2	0.0		0.1	
Delay (s)		2.3			2.5			25.5	24.8		25.2	
Level of Service		A			A			C	C		C	
Approach Delay (s)		2.3			2.5			25.1			25.2	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	4.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



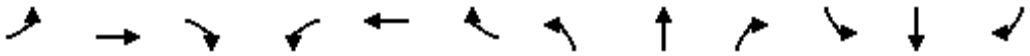
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	285	25	259	321	9	35	10	215	24	69	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0			3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.89			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1840		1770	1855			1644			1817	
Flt Permitted	0.95	1.00		0.95	1.00			0.95			0.74	
Satd. Flow (perm)	1770	1840		1770	1855			1580			1365	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	317	28	288	357	10	39	11	239	27	77	11
RTOR Reduction (vph)	0	5	0	0	1	0	0	200	0	0	7	0
Lane Group Flow (vph)	29	340	0	288	366	0	0	89	0	0	108	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.7	26.1		12.9	36.3			8.8			8.8	
Effective Green, g (s)	3.7	27.1		13.9	37.3			9.8			9.8	
Actuated g/C Ratio	0.06	0.45		0.23	0.62			0.16			0.16	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0			4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0			2.0	
Lane Grp Cap (vph)	109	831		410	1153			258			223	
v/s Ratio Prot	0.02	c0.18		c0.16	0.20							
v/s Ratio Perm								0.06			c0.08	
v/c Ratio	0.27	0.41		0.70	0.32			0.35			0.49	
Uniform Delay, d1	26.9	11.1		21.2	5.3			22.3			22.8	
Progression Factor	0.81	1.01		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.3		4.4	0.7			0.3			0.6	
Delay (s)	22.3	11.4		25.6	6.1			22.5			23.4	
Level of Service	C	B		C	A			C			C	
Approach Delay (s)		12.2			14.6			22.5			23.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



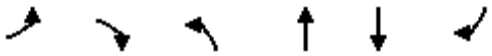
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	79	127	91	109	30	341	949	21	24	624	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	2.0	2.6	3.9	3.0	1.6	2.9
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1820	1583		1821	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1820	1583		1821	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	88	141	101	121	33	379	1054	23	27	693	2
RTOR Reduction (vph)	0	0	118	0	0	22	0	0	11	0	0	1
Lane Group Flow (vph)	0	166	23	0	222	11	379	1054	12	27	693	1
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)		15.6	15.6		16.7	16.7	25.1	46.1	46.1	5.8	28.8	28.8
Effective Green, g (s)		16.6	16.6		17.7	17.7	26.1	48.4	47.1	6.8	31.1	29.8
Actuated g/C Ratio		0.16	0.16		0.18	0.18	0.26	0.48	0.47	0.07	0.31	0.29
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.9	4.9	4.0	3.9	3.9
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)		299	260		319	277	457	1694	737	119	1089	467
v/s Ratio Prot		c0.09			c0.12		c0.21	c0.30		0.02	c0.20	
v/s Ratio Perm			0.01			0.01			0.01			0.00
v/c Ratio		0.56	0.09		0.70	0.04	0.83	0.62	0.02	0.23	0.64	0.00
Uniform Delay, d1		38.9	35.8		39.2	34.6	35.4	19.6	14.5	44.7	30.1	25.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.3	0.1		5.2	0.0	11.3	0.8	0.0	0.4	1.4	0.0
Delay (s)		40.1	35.9		44.4	34.7	46.7	20.4	14.5	45.0	31.5	25.2
Level of Service		D	D		D	C	D	C	B	D	C	C
Approach Delay (s)		38.2			43.2			27.1			32.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	101.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	555	0	0	360	145	0	0	0	201	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Lane Util. Factor	1.00	0.95			1.00	1.00				0.95	0.95	
Frt	1.00	1.00			1.00	0.85				1.00	0.97	
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.96	
Satd. Flow (prot)	1770	3539			1863	1583				1681	1655	
Flt Permitted	0.95	1.00			1.00	1.00				0.76	0.76	
Satd. Flow (perm)	1770	3539			1863	1583				1340	1315	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	617	0	0	400	161	0	0	0	223	0	21
RTOR Reduction (vph)	0	0	0	0	0	110	0	0	0	0	8	0
Lane Group Flow (vph)	23	617	0	0	400	51	0	0	0	123	113	0
Turn Type	Prot			Perm		Perm	Perm			Perm		
Protected Phases	7	4			8			5			6	
Permitted Phases				8		8	5			6		
Actuated Green, G (s)	2.2	23.8			17.6	17.6				12.1	12.1	
Effective Green, g (s)	2.2	23.8			17.6	17.6				12.1	12.1	
Actuated g/C Ratio	0.04	0.43			0.32	0.32				0.22	0.22	
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0	3.0	
Lane Grp Cap (vph)	70	1515			590	501				292	286	
v/s Ratio Prot	0.01	c0.17			c0.21							
v/s Ratio Perm						0.03				c0.09	0.09	
v/c Ratio	0.33	0.41			0.68	0.10				0.42	0.40	
Uniform Delay, d1	26.0	11.0			16.5	13.4				18.7	18.6	
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2	2.7	0.2			3.1	0.1				1.0	0.9	
Delay (s)	28.7	11.2			19.6	13.5				19.7	19.5	
Level of Service	C	B			B	B				B	B	
Approach Delay (s)		11.8			17.9			0.0			19.6	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	23.7
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	233	397	530	252	51	371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.98	1.00	1.00
Satd. Flow (prot)	1770	1583	1681	1737	1863	1583
Flt Permitted	0.95	1.00	0.72	0.86	1.00	1.00
Satd. Flow (perm)	1770	1583	1274	1525	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	259	441	589	280	57	412
RTOR Reduction (vph)	0	307	0	0	0	209
Lane Group Flow (vph)	259	134	418	451	57	203
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	12.0	12.0	19.5	19.5	19.5	19.5
Effective Green, g (s)	12.0	12.0	19.5	19.5	19.5	19.5
Actuated g/C Ratio	0.30	0.30	0.49	0.49	0.49	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	538	481	629	753	920	781
v/s Ratio Prot	c0.15				0.03	
v/s Ratio Perm		0.08	c0.33	0.30		0.13
v/c Ratio	0.48	0.28	0.66	0.60	0.06	0.26
Uniform Delay, d1	11.2	10.5	7.5	7.2	5.2	5.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.3	2.7	1.3	0.0	0.2
Delay (s)	11.9	10.8	10.2	8.5	5.3	6.0
Level of Service	B	B	B	A	A	A
Approach Delay (s)	11.2			9.3	5.9	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	39.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection 13 **New Meadow Dr/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	31	30	98.1%	36.9	5.8	D
	Through						
	Right Turn	6	6	103.3%	21.7	10.0	C
	Subtotal	**37**	**37**	**98.9%**	**34.5**	**5.4**	**C**
EB	Left Turn	9	9	96.7%	53.5	10.6	D
	Through	360	360	100.1%	7.9	1.8	A
	Right Turn						
	Subtotal	**369**	**369**	**100.0%**	**8.9**	**1.7**	**A**
WB	Left Turn						
	Through	578	558	96.5%	21.6	4.3	C
	Right Turn	60	54	90.5%	20.1	2.6	C
	Subtotal	**638**	**612**	**95.9%**	**21.5**	**4.1**	**C**
Total		**1,044**	**1,017**	**97.4%**	**17.4**	**2.8**	**B**

Intersection 10 **Diamond Creek Blvd/Blue Oaks Blvd-North Drwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	3	3	90.0%	94.2	28.8	F
	Through	2	2	120.0%	94.4	19.2	F
	Right Turn	13	11	86.9%	56.1	10.0	E
	Subtotal	**18**	**16**	**91.1%**	**69.6**	**12.7**	**E**
SB	Left Turn	52	52	100.2%	33.9	5.4	C
	Through	7	7	94.3%	28.3	11.6	C
	Right Turn	4	4	87.5%	32.2	20.6	C
	Subtotal	**63**	**62**	**98.7%**	**33.1**	**5.3**	**C**
EB	Left Turn	7	7	95.7%	45.0	10.5	D
	Through	256	242	94.3%	16.5	4.1	B
	Right Turn	9	9	95.6%	4.7	0.9	A
	Subtotal	**272**	**257**	**94.4%**	**16.8**	**3.7**	**B**
WB	Left Turn	14	13	89.3%	53.7	17.5	D
	Through	347	322	92.9%	21.0	5.8	C
	Right Turn	72	68	94.2%	13.3	1.8	B
	Subtotal	**433**	**403**	**93.0%**	**20.8**	**5.4**	**C**
Total		**786**	**738**	**93.9%**	**21.5**	**3.0**	**C**

Intersection 15 **Foothills Blvd-Northridge Dr/Blue Oaks Blvd-Douglas Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	100	91	91.2%	163.2	53.6	F
	Through	14	14	100.0%	92.4	16.8	F
	Right Turn	147	157	106.8%	58.6	9.0	E
	Subtotal	**261**	**262**	**100.5%**	**96.2**	**22.0**	**F**
SB	Left Turn	99	93	94.1%	47.7	9.7	D
	Through	46	47	102.2%	47.6	7.0	D
	Right Turn	29	31	105.9%	26.1	5.4	C
	Subtotal	**174**	**171**	**98.2%**	**43.9**	**7.4**	**D**
EB	Left Turn	10	11	108.0%	54.0	4.0	D
	Through	330	329	99.5%	34.0	4.2	C
	Right Turn	52	52	99.2%	15.0	1.9	B
	Subtotal	**392**	**391**	**99.7%**	**32.1**	**3.6**	**C**
WB	Left Turn	45	42	94.0%	51.2	6.0	D
	Through	509	497	97.6%	28.2	3.2	C
	Right Turn	23	21	92.2%	1.5	0.5	A
	Subtotal	**577**	**561**	**97.1%**	**28.9**	**2.9**	**C**
Total		**1,404**	**1,385**	**98.6%**	**44.3**	**3.7**	**D**

Intersection 11 **Woodcreek Oaks Blvd/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	48	48	100.0%	89.8	12.3	F
	Through	32	28	86.9%	89.4	10.5	F
	Right Turn	52	53	101.7%	71.4	6.6	E
	Subtotal	**132**	**129**	**97.5%**	**82.1**	**8.8**	**F**
SB	Left Turn	55	57	104.4%	41.5	4.2	D
	Through	23	23	98.7%	40.7	5.3	D
	Right Turn	8	8	97.5%	14.7	6.6	B
	Subtotal	**86**	**88**	**102.2%**	**39.0**	**2.8**	**D**
EB	Left Turn	36	32	89.7%	47.6	7.4	D
	Through	261	261	99.9%	38.5	9.2	D
	Right Turn	24	24	98.3%	12.8	4.5	B
	Subtotal	**321**	**317**	**98.6%**	**37.5**	**7.8**	**D**
WB	Left Turn	116	118	101.6%	44.7	6.1	D
	Through	468	448	95.6%	28.9	5.3	C
	Right Turn						
	Subtotal	**584**	**565**	**96.8%**	**32.2**	**4.0**	**C**
Total		**1,123**	**1,099**	**97.8%**	**40.2**	**1.8**	**D**

SimTraffic Post-Processor **Amoruso Ranch Specific Plan EIR**
Average Results from 10 Runs **Existing Plus Project Condition**
Volume and Delay by Movement **PM Peak Hour**

Intersection 17 **Washington Blvd/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	121	115	94.7%	129.1	36.4	F
	Through						
	Right Turn	112	108	96.2%	101.1	11.9	F
	Subtotal	**233**	**222**	**95.4%**	**116.0**	**23.4**	**F**
SB	Left Turn	35	33	95.4%	48.1	8.2	D
	Through	65	66	101.2%	44.8	5.7	D
	Right Turn	44	44	100.0%	3.4	0.6	A
	Subtotal	**144**	**143**	**99.4%**	**33.0**	**4.8**	**C**
EB	Left Turn						
	Through	516	449	87.1%	52.7	5.0	D
	Right Turn	66	56	84.1%	16.0	3.8	B
	Subtotal	**582**	**505**	**86.7%**	**48.8**	**4.7**	**D**
WB	Left Turn	65	57	88.3%	50.0	4.6	D
	Through	169	159	94.0%	19.4	2.8	B
	Right Turn	103	101	97.7%	4.0	0.5	A
	Subtotal	**337**	**317**	**94.0%**	**20.0**	**2.1**	**B**
Total		**1,296**	**1,187**	**91.6%**	**51.6**	**5.3**	**D**

Intersection 12 **Woodmeadow Dr/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	3	2	66.7%	51.1	30.9	D
	Through						
	Right Turn	3	2	70.0%	24.6	26.7	C
	Subtotal	**6**	**4**	**68.3%**	**41.6**	**26.3**	**D**
EB	Left Turn	3	3	106.7%	59.0	28.3	E
	Through	366	360	98.3%	5.8	0.8	A
	Right Turn						
	Subtotal	**369**	**363**	**98.3%**	**6.2**	**0.8**	**A**
WB	Left Turn						
	Through	581	549	94.5%	17.0	3.9	B
	Right Turn	3	3	83.3%	16.3	9.5	B
	Subtotal	**584**	**552**	**94.5%**	**17.0**	**3.9**	**B**
Total		**959**	**919**	**95.8%**	**12.9**	**2.4**	**B**

Intersection 90 **Eureka Rd/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	420	414	98.6%	48.3	4.7	D
	Through	472	457	96.9%	52.5	8.7	D
	Right Turn	20	17	86.0%	17.0	4.3	B
	Subtotal	**912**	**888**	**97.4%**	**50.0**	**6.8**	**D**
SB	Left Turn	460	456	99.2%	47.7	4.0	D
	Through	492	501	101.9%	56.4	7.4	E
	Right Turn	136	141	103.5%	8.0	2.8	A
	Subtotal	**1,088**	**1,098**	**101.0%**	**46.7**	**5.2**	**D**
EB	Left Turn	176	168	95.2%	59.1	12.4	E
	Through	1,280	1,182	92.4%	39.4	9.6	D
	Right Turn	484	442	91.2%	34.3	5.3	C
	Subtotal	**1,940**	**1,792**	**92.4%**	**40.0**	**8.5**	**D**
WB	Left Turn	80	81	101.5%	67.9	10.8	E
	Through	1,424	1,423	99.9%	51.8	8.9	D
	Right Turn	464	453	97.6%	27.1	6.7	C
	Subtotal	**1,968**	**1,957**	**99.5%**	**46.7**	**8.1**	**D**
Total		**5,908**	**5,736**	**97.1%**	**45.1**	**3.8**	**D**

Intersection 105 **Rocky Ridge Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	340	324	95.2%	64.2	6.7	E
	Through	436	426	97.6%	51.6	5.8	D
	Right Turn	176	176	99.8%	25.6	3.6	C
	Subtotal	**952**	**925**	**97.1%**	**51.0**	**3.3**	**D**
SB	Left Turn	224	202	90.2%	57.1	7.8	E
	Through	612	614	100.3%	63.9	15.5	E
	Right Turn	132	136	103.3%	30.4	11.2	C
	Subtotal	**968**	**952**	**98.4%**	**57.7**	**12.7**	**E**
EB	Left Turn	196	192	97.8%	58.8	8.2	E
	Through	1,440	1,368	95.0%	54.7	8.5	D
	Right Turn	148	132	89.2%	36.8	8.2	D
	Subtotal	**1,784**	**1,692**	**94.8%**	**53.8**	**8.0**	**D**
WB	Left Turn	376	379	100.9%	62.0	9.4	E
	Through	1,712	1,673	97.7%	67.7	25.5	E
	Right Turn	132	133	100.6%	45.8	25.6	D
	Subtotal	**2,220**	**2,185**	**98.4%**	**65.5**	**22.4**	**E**
Total		**5,924**	**5,754**	**97.1%**	**58.4**	**8.7**	**E**

SimTraffic Post-Processor **Amoruso Ranch Specific Plan EIR**
Average Results from 10 Runs **Existing Plus Project Condition**
Volume and Delay by Movement **PM Peak Hour**

Intersection 103 **Santa Clara Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	40	38	95.0%	42.0	9.7	D
	Through	20	18	88.0%	34.7	14.9	C
	Right Turn	72	74	102.2%	16.9	3.7	B
	Subtotal	**132**	**129**	**97.9%**	**26.8**	**5.2**	**C**
SB	Left Turn	188	176	93.8%	34.0	4.6	C
	Through	56	58	102.9%	35.0	5.6	C
	Right Turn	184	174	94.3%	18.6	2.6	B
	Subtotal	**428**	**408**	**95.2%**	**27.6**	**3.2**	**C**
EB	Left Turn	152	138	91.1%	51.5	3.8	D
	Through	1,740	1,756	100.9%	30.7	4.6	C
	Right Turn	32	32	98.8%	29.1	10.4	C
	Subtotal	**1,924**	**1,926**	**100.1%**	**32.1**	**4.4**	**C**
WB	Left Turn	52	60	115.4%	48.7	8.8	D
	Through	1,948	1,769	90.8%	24.1	4.1	C
	Right Turn	40	38	94.0%	14.3	5.3	B
	Subtotal	**2,040**	**1,867**	**91.5%**	**24.6**	**4.1**	**C**
Total		**4,524**	**4,330**	**95.7%**	**28.3**	**3.5**	**C**

Intersection 102 **Sierra Gardens Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	160	160	100.0%	42.9	4.9	D
	Through	32	27	85.0%	52.0	12.7	D
	Right Turn	28	28	101.4%	38.1	7.4	D
	Subtotal	**220**	**216**	**98.0%**	**43.3**	**3.9**	**D**
SB	Left Turn	216	211	97.6%	34.3	5.4	C
	Through	24	33	136.7%	35.1	6.0	D
	Right Turn	36	45	124.4%	26.8	5.3	C
	Subtotal	**276**	**288**	**104.5%**	**33.2**	**4.6**	**C**
EB	Left Turn	48	44	92.5%	57.2	18.0	E
	Through	1,820	1,782	97.9%	44.7	8.8	D
	Right Turn	44	47	107.3%	53.3	13.1	D
	Subtotal	**1,912**	**1,873**	**98.0%**	**45.1**	**8.8**	**D**
WB	Left Turn	40	42	106.0%	59.6	11.2	E
	Through	2,012	1,913	95.1%	38.8	9.1	D
	Right Turn						
	Subtotal	**2,052**	**1,956**	**95.3%**	**39.3**	**9.0**	**D**
Total		**4,460**	**4,333**	**97.1%**	**41.7**	**5.2**	**D**

Intersection 101 **N. Sunrise Ave/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	364	397	109.1%	51.8	5.9	D
	Through	496	485	97.7%	50.5	7.7	D
	Right Turn	136	148	109.1%	48.0	12.1	D
	Subtotal	**996**	**1,030**	**103.5%**	**50.8**	**6.9**	**D**
SB	Left Turn	132	125	94.8%	73.7	23.8	E
	Through	568	537	94.5%	75.6	25.5	E
	Right Turn	536	520	97.0%	39.1	16.9	D
	Subtotal	**1,236**	**1,182**	**95.6%**	**59.6**	**21.9**	**E**
EB	Left Turn	384	363	94.6%	68.2	7.2	E
	Through	1,624	1,556	95.8%	49.5	8.2	D
	Right Turn	156	158	101.0%	13.6	1.3	B
	Subtotal	**2,164**	**2,077**	**96.0%**	**50.0**	**7.2**	**D**
WB	Left Turn	272	238	87.4%	61.5	11.8	E
	Through	1,864	1,530	82.1%	74.4	18.2	E
	Right Turn	100	82	82.0%	56.1	12.8	E
	Subtotal	**2,236**	**1,850**	**82.7%**	**72.0**	**17.0**	**E**
Total		**6,632**	**6,139**	**92.6%**	**58.4**	**7.1**	**E**

Intersection 104 **Target Dwy/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	104	104	99.6%	56.9	18.2	E
	Through	24	27	111.7%	46.3	16.4	D
	Right Turn	68	70	103.5%	22.6	9.5	C
	Subtotal	**196**	**201**	**102.4%**	**44.0**	**12.9**	**D**
SB	Left Turn	88	93	105.5%	56.2	18.7	E
	Through	12	13	106.7%	50.4	28.9	D
	Right Turn	104	108	103.8%	32.9	9.7	C
	Subtotal	**204**	**214**	**104.7%**	**44.1**	**11.9**	**D**
EB	Left Turn	160	149	93.3%	75.9	13.4	E
	Through	1,708	1,599	93.6%	32.5	7.4	C
	Right Turn	40	33	82.0%	33.6	11.5	C
	Subtotal	**1,908**	**1,781**	**93.3%**	**36.2**	**7.4**	**D**
WB	Left Turn	84	76	90.5%	55.0	11.2	D
	Through	1,912	1,805	94.4%	30.6	7.6	C
	Right Turn	12	15	123.3%	30.7	14.4	C
	Subtotal	**2,008**	**1,896**	**94.4%**	**31.6**	**7.7**	**C**
Total		**4,316**	**4,091**	**94.8%**	**34.8**	**6.6**	**C**

Intersection 98 **Harding Blvd/Douglas Blvd** **Signal**

SimTraffic Post-Processor **Amoruso Ranch Specific Plan EIR**
Average Results from 10 Runs **Existing Plus Project Condition**
Volume and Delay by Movement **PM Peak Hour**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	28	25	90.0%	45.8	9.0	D
	Through	28	31	111.4%	34.4	15.0	C
	Right Turn	84	99	117.6%	18.7	4.9	B
	Subtotal	**140**	**155**	**110.9%**	**27.7**	**4.8**	**C**
SB	Left Turn	772	685	88.8%	108.2	39.2	F
	Through	12	12	96.7%	107.5	38.5	F
	Right Turn	244	236	96.7%	52.2	27.3	D
	Subtotal	**1,028**	**933**	**90.7%**	**94.1**	**36.2**	**F**
EB	Left Turn	188	192	102.3%	59.2	5.0	E
	Through	944	980	103.8%	30.3	3.5	C
	Right Turn	8	8	95.0%	17.7	9.2	B
	Subtotal	**1,140**	**1,180**	**103.5%**	**34.9**	**3.2**	**C**
WB	Left Turn	60	66	109.3%	62.1	13.1	E
	Through	1,156	1,138	98.5%	51.4	18.3	D
	Right Turn	468	468	99.9%	32.0	16.5	C
	Subtotal	**1,684**	**1,672**	**99.3%**	**46.4**	**17.7**	**D**
Total		**3,992**	**3,939**	**98.7%**	**53.4**	**9.5**	**D**

Intersection 178 **Harding Blvd/Estates Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	72	78	108.3%	35.6	6.6	D
	Through	656	665	101.3%	8.1	3.0	A
	Right Turn						
	Subtotal	**728**	**743**	**102.0%**	**10.9**	**2.4**	**B**
SB	Left Turn	36	37	103.3%	48.3	15.2	D
	Through	968	992	102.5%	27.7	19.4	C
	Right Turn	124	123	99.4%	32.9	28.3	C
	Subtotal	**1,128**	**1,153**	**102.2%**	**29.0**	**20.2**	**C**
EB	Left Turn	240	250	104.3%	39.8	4.3	D
	Through	4	3	80.0%	36.8	27.2	D
	Right Turn	24	26	110.0%	32.2	7.1	C
	Subtotal	**268**	**280**	**104.5%**	**39.3**	**4.0**	**D**
WB	Left Turn	20	22	110.0%	37.2	12.0	D
	Through	16	15	95.0%	38.6	19.6	D
	Right Turn	16	18	115.0%	18.1	12.4	B
	Subtotal	**52**	**56**	**106.9%**	**28.9**	**7.2**	**C**
Total		**2,176**	**2,231**	**102.5%**	**24.3**	**10.4**	**C**

Intersection 179 **N Sunrise Ave/Roseville Square** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn	132	136	103.3%	39.9	8.1	D
	Through	544	542	99.6%	13.9	2.3	B
	Right Turn	8	7	85.0%	5.3	8.1	A
	Subtotal	**684**	**685**	**100.1%**	**19.1**	**2.8**	**B**
SB	Left Turn	28	30	105.7%	49.6	14.2	D
	Through	808	797	98.7%	32.9	14.7	C
	Right Turn	36	36	101.1%	35.8	12.4	D
	Subtotal	**872**	**863**	**99.0%**	**33.5**	**14.1**	**C**
EB	Left Turn	164	168	102.4%	38.8	3.9	D
	Through	20	19	94.0%	34.6	15.6	C
	Right Turn	108	105	97.4%	22.6	9.6	C
	Subtotal	**292**	**292**	**100.0%**	**32.7**	**4.3**	**C**
WB	Left Turn	108	97	89.6%	87.4	76.0	F
	Through	8	7	85.0%	70.4	87.0	E
	Right Turn	40	44	110.0%	4.3	1.0	A
	Subtotal	**156**	**148**	**94.6%**	**57.7**	**43.6**	**E**
Total		**2,004**	**1,988**	**99.2%**	**30.1**	**8.8**	**C**

Intersection 87 **N. Sunrise Ave./Eureka Rd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	496	487	98.2%	86.7	32.2	F
	Through	408	387	94.8%	40.6	4.4	D
	Right Turn	180	198	110.2%	4.8	0.6	A
	Subtotal	**1084**	**1072**	**98.9%**	**55.3**	**15.2**	**E**
SB	Left Turn	172	170	98.6%	54.4	4.7	D
	Through	420	422	100.4%	44.6	3.3	D
	Right Turn	316	326	103.0%	26.1	3.7	C
	Subtotal	**908**	**917**	**101.0%**	**39.9**	**1.7**	**D**
EB	Left Turn	216	222	102.6%	58.2	10.4	E
	Through	1064	1110	104.3%	33.4	5.7	C
	Right Turn	380	360	94.6%	12.0	1.6	B
	Subtotal	**1660**	**1691**	**101.9%**	**32.1**	**5.3**	**C**
WB	Left Turn	132	128	97.0%	58.1	10.0	E
	Through	1688	1741	103.2%	44.0	8.8	D
	Right Turn	148	139	93.8%	15.0	7.8	B
	Subtotal	**1968**	**2008**	**102.0%**	**42.9**	**8.2**	**D**
Total		**5620**	**5688**	**101.2%**	**41.6**	**5.7**	**D**

Intersection 86 **I-80 WB Ramps/Atlantic St** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	800	814	101.8%	1.5	0.2	A
	Subtotal	**800**	**814**	**101.8%**	**1.5**	**0.2**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	716	730	101.9%	14.2	1.5	B
	Right Turn	280	268	95.6%	10.7	1.6	B
	Subtotal	**996**	**997**	**100.1%**	**13.2**	**1.4**	**B**
WB	Left Turn	728	682	93.7%	23.9	2.7	C
	Through	1048	1019	97.2%	3.1	0.3	A
	Right Turn						
	Subtotal	**1776**	**1701**	**95.8%**	**11.4**	**1.4**	**B**
Total		**3572**	**3512**	**98.3%**	**9.7**	**0.6**	**A**

Intersection 85 **I-80 EB Ramps/Eureka Rd-Atlantic St** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	196	190	96.7%	56.6	8.2	E
	Through	628	603	96.0%	51.1	8.9	D
	Right Turn	412	415	100.7%	7.6	0.8	A
	Subtotal	**1236**	**1207**	**97.7%**	**37.2**	**5.6**	**D**
SB	Left Turn	288	278	96.4%	55.7	3.7	E
	Through						
	Right Turn	576	537	93.2%	54.3	20.5	D
	Subtotal	**864**	**814**	**94.3%**	**55.1**	**13.5**	**E**
EB	Left Turn	208	196	94.0%	58.3	6.5	E
	Through	1052	1137	108.1%	30.7	3.5	C
	Right Turn	260	255	98.2%	9.0	0.8	A
	Subtotal	**1520**	**1588**	**104.4%**	**30.7**	**2.4**	**C**
WB	Left Turn						
	Through	1120	1132	101.1%	51.1	10.0	D
	Right Turn	1332	1312	98.5%	56.9	13.3	E
	Subtotal	**2452**	**2444**	**99.7%**	**54.1**	**11.5**	**D**
Total		**6072**	**6053**	**99.7%**	**44.8**	**4.9**	**D**

Intersection 88 **Rocky Ridge Dr/Eureka Rd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	384	388	100.9%	50.1	6.0	D
	Through	332	342	102.9%	27.2	3.8	C
	Right Turn	28	25	90.0%	3.6	0.7	A
	Subtotal	**744**	**754**	**101.4%**	**38.2**	**4.8**	**D**
SB	Left Turn	64	58	91.3%	51.9	9.7	D
	Through	308	316	102.7%	54.7	6.0	D
	Right Turn	120	124	103.0%	4.4	0.8	A
	Subtotal	**492**	**498**	**101.3%**	**41.9**	**5.4**	**D**
EB	Left Turn	144	138	95.6%	49.8	11.1	D
	Through	1004	1051	104.7%	24.8	4.9	C
	Right Turn	276	285	103.2%	3.1	0.2	A
	Subtotal	**1424**	**1473**	**103.5%**	**22.9**	**4.4**	**C**
WB	Left Turn	72	70	96.7%	60.6	9.3	E
	Through	1272	1254	98.6%	38.4	4.4	D
	Right Turn	40	36	89.0%	10.4	4.3	B
	Subtotal	**1384**	**1360**	**98.2%**	**38.8**	**4.2**	**D**
Total		**4044**	**4086**	**101.0%**	**33.4**	**2.3**	**C**

Intersection 77 **Roseville Pkwy-Roseville Rd/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	176	188	106.8%	80.9	27.4	F
	Through	564	585	103.8%	65.8	13.2	E
	Right Turn	52	58	112.3%	22.4	4.3	C
	Subtotal	**792**	**832**	**105.0%**	**67.0**	**9.9**	**E**
SB	Left Turn	748	631	84.3%	81.3	16.8	F
	Through	660	589	89.2%	47.0	8.3	D
	Right Turn	104	94	90.8%	8.9	3.8	A
	Subtotal	**1,512**	**1,314**	**86.9%**	**60.7**	**11.3**	**E**
EB	Left Turn	180	172	95.3%	52.4	4.7	D
	Through	1,556	1,523	97.9%	43.6	3.9	D
	Right Turn	196	209	106.7%	26.5	4.3	C
	Subtotal	**1,932**	**1,904**	**98.5%**	**42.5**	**3.7**	**D**
WB	Left Turn	108	104	95.9%	54.0	7.6	D
	Through	1,344	1,331	99.0%	40.4	2.9	D
	Right Turn	756	758	100.2%	18.9	2.2	B
	Subtotal	**2,208**	**2,192**	**99.3%**	**33.6**	**2.3**	**C**
Total		**6,444**	**6,241**	**96.9%**	**46.5**	**3.6**	**D**

Intersection 31 **Foothills Blvd/Pleasant Grove Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	324	305	94.2%	72.3	19.9	E
	Through	392	374	95.5%	44.8	3.8	D
	Right Turn	580	564	97.2%	9.1	0.9	A
	Subtotal	**1,296**	**1,244**	**96.0%**	**35.6**	**5.6**	**D**
SB	Left Turn	284	278	97.9%	62.2	5.4	E
	Through	688	679	98.7%	52.2	5.3	D
	Right Turn	144	136	94.2%	13.1	3.6	B
	Subtotal	**1,116**	**1,093**	**97.9%**	**50.0**	**4.5**	**D**
EB	Left Turn	108	91	84.4%	53.7	7.9	D
	Through	1,028	1,037	100.9%	46.2	6.6	D
	Right Turn	196	199	101.6%	11.6	2.5	B
	Subtotal	**1,332**	**1,328**	**99.7%**	**41.6**	**5.8**	**D**
WB	Left Turn	768	688	89.5%	55.2	5.9	E
	Through	1,572	1,350	85.9%	86.2	23.9	F
	Right Turn	140	111	79.1%	55.8	20.4	E
	Subtotal	**2,480**	**2,149**	**86.6%**	**74.5**	**16.9**	**E**
Total		**6,224**	**5,813**	**93.4%**	**54.1**	**5.6**	**D**

Intersection 174 **Galleria Blvd/Antelope Creek Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	124	107	86.1%	54.5	12.2	D
	Through	1,692	1,578	93.3%	51.9	14.7	D
	Right Turn	188	172	91.5%	3.0	1.8	A
	Subtotal	**2,004**	**1,857**	**92.7%**	**47.4**	**12.8**	**D**
SB	Left Turn	240	192	80.0%	58.0	5.6	E
	Through	1,124	1,034	92.0%	33.2	4.5	C
	Right Turn	144	136	94.7%	11.5	3.9	B
	Subtotal	**1,508**	**1,362**	**90.3%**	**34.5**	**3.8**	**C**
EB	Left Turn	384	361	94.0%	43.9	6.8	D
	Through	72	76	106.1%	38.7	10.8	D
	Right Turn	132	144	108.8%	6.9	0.5	A
	Subtotal	**588**	**581**	**98.8%**	**33.9**	**4.7**	**C**
WB	Left Turn	240	235	97.8%	46.6	4.6	D
	Through	92	100	109.1%	46.1	4.3	D
	Right Turn	388	380	97.8%	8.8	0.8	A
	Subtotal	**720**	**715**	**99.3%**	**26.4**	**2.1**	**C**
Total		**4,820**	**4,515**	**93.7%**	**38.5**	**5.1**	**D**

Intersection 68 **Galleria Blvd/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	552	490	88.8%	146.6	46.8	F
	Through	800	755	94.4%	68.5	12.2	E
	Right Turn	68	62	91.2%	6.8	3.5	A
	Subtotal	**1,420**	**1,307**	**92.1%**	**95.1**	**22.6**	**F**
SB	Left Turn	620	575	92.7%	67.8	15.1	E
	Through	612	602	98.3%	60.2	13.9	E
	Right Turn	352	322	91.6%	10.2	3.3	B
	Subtotal	**1,584**	**1,499**	**94.6%**	**52.4**	**10.4**	**D**
EB	Left Turn	464	411	88.5%	90.1	28.4	F
	Through	1,092	1,026	94.0%	42.1	8.9	D
	Right Turn	464	451	97.2%	2.3	0.4	A
	Subtotal	**2,020**	**1,888**	**93.5%**	**43.1**	**7.9**	**D**
WB	Left Turn	260	241	92.6%	76.8	17.7	E
	Through	2,208	1,916	86.8%	74.1	16.2	E
	Right Turn						
	Subtotal	**2,468**	**2,157**	**87.4%**	**74.9**	**18.8**	**E**
Total		**7,492**	**6,851**	**91.4%**	**65.0**	**8.5**	**E**

Intersection 38 **Pleasant Grove Blvd/Faiway Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	616	610	99.0%	73.5	17.7	E
	Through	976	922	94.5%	34.0	8.0	C
	Right Turn	496	462	93.1%	15.3	5.0	B
	Subtotal	**2,088**	**1,994**	**95.5%**	**41.9**	**8.1**	**D**
SB	Left Turn	104	100	96.2%	70.8	11.9	E
	Through	652	651	99.8%	58.6	8.8	E
	Right Turn	132	139	105.5%	18.7	3.6	B
	Subtotal	**888**	**890**	**100.2%**	**53.7**	**7.1**	**D**
EB	Left Turn	212	230	108.5%	58.3	7.9	E
	Through	408	385	94.3%	53.4	4.4	D
	Right Turn	344	348	101.3%	21.2	5.1	C
	Subtotal	**964**	**963**	**99.9%**	**43.2**	**3.8**	**D**
WB	Left Turn	608	598	98.4%	71.5	16.8	E
	Through	440	400	90.9%	37.9	2.0	D
	Right Turn	124	129	103.9%	9.9	2.7	A
	Subtotal	**1,172**	**1,127**	**96.1%**	**52.5**	**8.9**	**D**
Total		**5,112**	**4,974**	**97.3%**	**46.7**	**5.5**	**D**

Intersection 33 **Hallissy Dr/Pleasant Grove Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	52	42	81.5%	37.7	7.4	D
	Through	44	37	83.6%	36.6	10.2	D
	Right Turn	36	36	100.0%	8.5	3.8	A
	Subtotal	**132**	**115**	**87.3%**	**27.9**	**5.4**	**C**
SB	Left Turn	72	74	102.2%	40.8	6.1	D
	Through	4	5	120.0%	36.0	29.2	D
	Right Turn	24	22	90.0%	7.0	3.4	A
	Subtotal	**100**	**100**	**100.0%**	**34.2**	**6.2**	**C**
EB	Left Turn	20	18	88.0%	46.7	11.9	D
	Through	1,908	1,844	96.7%	23.1	4.6	C
	Right Turn	24	26	110.0%	11.1	2.8	B
	Subtotal	**1,952**	**1,888**	**96.7%**	**23.1**	**4.5**	**C**
WB	Left Turn	80	67	83.5%	38.0	8.8	D
	Through	2,076	1,871	90.1%	12.4	4.2	B
	Right Turn	104	105	100.8%	5.2	1.6	A
	Subtotal	**2,260**	**2,043**	**90.4%**	**12.9**	**3.9**	**B**
Total		**4,444**	**4,146**	**93.3%**	**18.5**	**3.2**	**B**

Intersection 34 **Roseville Pkwy/Pleasant Grove Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1,160	1,054	90.8%	66.6	13.8	E
	Through	652	616	94.5%	44.5	7.3	D
	Right Turn	864	818	94.6%	4.3	0.3	A
	Subtotal	**2,676**	**2,487**	**92.9%**	**40.7**	**7.3**	**D**
SB	Left Turn	260	260	100.0%	57.8	11.0	E
	Through	372	373	100.2%	54.2	5.5	D
	Right Turn	20	16	78.0%	8.1	3.4	A
	Subtotal	**652**	**648**	**99.4%**	**54.5**	**7.4**	**D**
EB	Left Turn	52	35	66.9%	121.8	50.9	F
	Through	1,068	902	84.5%	140.8	37.8	F
	Right Turn	792	712	89.9%	41.1	19.9	D
	Subtotal	**1,912**	**1,649**	**86.3%**	**97.3**	**30.2**	**F**
WB	Left Turn	684	616	90.0%	79.7	14.7	E
	Through	1,336	1,223	91.5%	43.2	9.3	D
	Right Turn	160	163	102.0%	6.4	1.2	A
	Subtotal	**2,180**	**2,002**	**91.8%**	**51.6**	**7.9**	**D**
Total		**7,420**	**6,786**	**91.5%**	**58.8**	**4.8**	**E**

Intersection 35 **Pleasant Grove Blvd/Highland Pointe Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	364	340	93.4%	42.5	9.7	D
	Through	1,804	1,618	89.7%	28.5	9.3	C
	Right Turn	4	3	80.0%	9.0	14.1	A
	Subtotal	**2,172**	**1,961**	**90.3%**	**30.9**	**8.8**	**C**
SB	Left Turn	140	115	82.3%	85.2	20.4	F
	Through	1,588	1,431	90.1%	67.9	19.8	E
	Right Turn	192	165	86.0%	11.4	3.6	B
	Subtotal	**1,920**	**1,711**	**89.1%**	**63.6**	**17.6**	**E**
EB	Left Turn	496	504	101.6%	60.8	10.4	E
	Through	4	5	120.0%	60.1	59.5	E
	Right Turn	360	376	104.6%	47.4	19.0	D
	Subtotal	**860**	**885**	**102.9%**	**55.3**	**13.6**	**E**
WB	Left Turn	160	175	109.3%	67.5	16.8	E
	Through	40	37	92.0%	50.2	12.3	D
	Right Turn	228	240	105.1%	16.8	3.2	B
	Subtotal	**428**	**451**	**105.4%**	**39.5**	**9.0**	**D**
Total		**5,380**	**5,009**	**93.1%**	**46.9**	**8.1**	**D**

Intersection 64 **Chase Dr/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn	60	59	98.7%	40.0	7.0	D
	Through						
	Right Turn	80	91	114.0%	1.2	0.3	A
	Subtotal	**140**	**150**	**107.4%**	**16.6**	**3.4**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,560	1,437	92.1%	12.5	2.4	B
	Right Turn	80	68	85.5%	5.7	1.4	A
	Subtotal	**1,640**	**1,506**	**91.8%**	**12.2**	**2.4**	**B**
WB	Left Turn	136	121	88.8%	55.5	6.1	E
	Through	2,152	1,940	90.1%	11.9	1.6	B
	Right Turn						
	Subtotal	**2,288**	**2,060**	**90.1%**	**14.5**	**1.4**	**B**
Total		**4,068**	**3,716**	**91.4%**	**13.7**	**1.4**	**B**

Intersection 69 **Creekside Ridge Dr/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	28	30	108.6%	68.3	13.5	E
	Through	12	12	103.3%	49.2	18.1	D
	Right Turn	24	20	83.3%	18.2	7.9	B
	Subtotal	**64**	**63**	**98.1%**	**49.9**	**10.6**	**D**
SB	Left Turn	384	386	100.5%	46.0	6.5	D
	Through	4	6	160.0%	34.9	22.1	C
	Right Turn	124	130	104.8%	31.0	13.1	C
	Subtotal	**512**	**522**	**102.0%**	**42.2**	**7.2**	**D**
EB	Left Turn	80	82	102.5%	57.3	12.6	E
	Through	1,628	1,512	92.9%	15.4	2.6	B
	Right Turn	16	11	67.5%	1.1	1.3	A
	Subtotal	**1,724**	**1,605**	**93.1%**	**17.4**	**2.8**	**B**
WB	Left Turn	44	37	83.6%	68.6	17.8	E
	Through	2,296	2,066	90.0%	53.8	15.7	D
	Right Turn	332	290	87.2%	44.3	14.6	D
	Subtotal	**2,672**	**2,393**	**89.6%**	**52.8**	**15.2**	**D**
Total		**4,972**	**4,583**	**92.2%**	**39.1**	**9.0**	**D**

Intersection 65 **Gibson Dr/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	4	1	20.0%	6.6	18.4	A
	Through						

NB	Right Turn	12	12	100.0%	7.0	5.7	A
	Subtotal	**16**	**13**	**80.0%**	**8.7**	**7.4**	**A**
SB	Left Turn	216	200	92.8%	48.3	6.7	D
	Through	4	3	70.0%	23.6	24.5	C
	Right Turn	36	35	96.7%	11.7	3.8	B
	Subtotal	**256**	**238**	**93.0%**	**42.8**	**6.5**	**D**
EB	Left Turn	12	13	110.0%	40.3	17.2	D
	Through	1,628	1,547	95.0%	9.9	2.9	A
	Right Turn						
	Subtotal	**1,640**	**1,560**	**95.1%**	**10.2**	**3.0**	**B**
WB	Left Turn	20	16	80.0%	64.5	31.3	E
	Through	2,252	2,054	91.2%	13.0	1.6	B
	Right Turn	188	166	88.1%	9.0	1.0	A
	Subtotal	**2,460**	**2,235**	**90.9%**	**13.0**	**1.4**	**B**
Total		**4,372**	**4,046**	**92.6%**	**13.7**	**1.5**	**B**

Intersection 71 **N Sunrise Ave/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	508	490	96.4%	52.4	6.4	D
	Through	76	88	115.3%	39.9	7.2	D
	Right Turn	228	238	104.4%	8.0	0.5	A
	Subtotal	**812**	**815**	**100.4%**	**38.2**	**4.3**	**D**
SB	Left Turn	56	52	92.9%	81.7	16.7	F
	Through	180	169	93.8%	57.0	6.1	E
	Right Turn	336	345	102.6%	26.8	4.5	C
	Subtotal	**572**	**566**	**98.9%**	**40.9**	**5.6**	**D**
EB	Left Turn	116	107	92.1%	70.7	14.3	E
	Through	1,740	1,628	93.5%	47.9	12.6	D
	Right Turn	320	294	91.8%	22.8	8.0	C
	Subtotal	**2,176**	**2,028**	**93.2%**	**45.5**	**11.9**	**D**
WB	Left Turn	188	183	97.2%	54.0	5.8	D
	Through	1,948	1,814	93.1%	34.2	6.4	C
	Right Turn	20	20	102.0%	9.4	3.2	A
	Subtotal	**2,156**	**2,018**	**93.6%**	**35.7**	**5.8**	**D**
Total		**5,716**	**5,426**	**94.9%**	**40.2**	**4.3**	**D**

Intersection 67 **Reserve Dr/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	324	331	102.1%	52.4	6.2	D
	Through	28	24	84.3%	57.0	17.9	E
	Right Turn	280	284	101.6%	8.7	2.0	A
	Subtotal	**632**	**639**	**101.1%**	**33.0**	**3.8**	**C**

SB	Left Turn	192	186	97.1%	53.0	8.8	D
	Through	24	25	105.0%	51.8	19.5	D
	Right Turn	88	88	100.5%	11.7	3.5	B
	Subtotal	**304**	**300**	**98.7%**	**40.8**	**7.2**	**D**
EB	Left Turn	36	37	102.2%	46.5	12.7	D
	Through	1,512	1,417	93.7%	42.5	5.9	D
	Right Turn	248	224	90.2%	17.2	4.1	B
	Subtotal	**1,796**	**1,677**	**93.4%**	**39.1**	**5.4**	**D**
WB	Left Turn	236	212	90.0%	77.3	23.0	E
	Through	1,952	1,703	87.2%	44.6	16.4	D
	Right Turn	196	175	89.2%	2.1	0.3	A
	Subtotal	**2,384**	**2,090**	**87.7%**	**44.4**	**15.9**	**D**
Total		**5,116**	**4,706**	**92.0%**	**40.7**	**8.0**	**D**

Intersection 72 **Secret Ravine Pkwy/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	124	118	95.5%	58.9	10.4	E
	Through						
	Right Turn	488	466	95.6%	28.5	5.6	C
	Subtotal	**612**	**585**	**95.6%**	**34.6**	**6.5**	**C**
EB	Left Turn	532	496	93.2%	46.6	10.9	D
	Through	1,516	1,449	95.6%	30.0	16.9	C
	Right Turn	4	4	90.0%	3.1	6.2	A
	Subtotal	**2,052**	**1,948**	**95.0%**	**34.2**	**14.5**	**C**
WB	Left Turn	12	16	133.3%	71.6	22.6	E
	Through	1,744	1,685	96.6%	36.7	6.6	D
	Right Turn	112	95	85.0%	17.0	4.5	B
	Subtotal	**1,868**	**1,796**	**96.1%**	**35.9**	**6.5**	**D**
Total		**4,532**	**4,329**	**95.5%**	**34.9**	**8.8**	**C**

Intersection 70 **Taylor Rd/Roseville Pkwy** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	576	548	95.2%	130.5	47.6	F
	Through	304	318	104.6%	101.1	43.9	F
	Right Turn	252	235	93.3%	68.7	32.6	E
	Subtotal	**1,132**	**1,102**	**97.3%**	**109.1**	**40.2**	**F**
SB	Left Turn	340	331	97.4%	73.2	8.4	E
	Through	156	145	92.8%	59.9	9.4	E

SB	Right Turn	144	145	100.8%	32.6	5.3	C
	Subtotal	**640**	**621**	**97.1%**	**60.5**	**5.7**	**E**
EB	Left Turn	180	149	82.7%	67.1	7.4	E
	Through	1,588	1,477	93.0%	41.1	5.2	D
	Right Turn	268	256	95.5%	20.1	4.5	C
	Subtotal	**2,036**	**1,882**	**92.4%**	**40.3**	**4.8**	**D**
WB	Left Turn	264	249	94.2%	64.0	12.5	E
	Through	1,952	1,826	93.5%	47.2	11.0	D
	Right Turn	572	538	94.1%	36.6	9.9	D
	Subtotal	**2,788**	**2,613**	**93.7%**	**46.6**	**11.0**	**D**
Total		**6,596**	**6,218**	**94.3%**	**57.7**	**8.5**	**E**

Intersection 66 **Roseville Pkwy/West Mall** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	40	33	82.0%	51.0	12.2	D
	Through	2,200	1,968	89.5%	34.0	9.4	C
	Right Turn	120	108	89.7%	8.6	1.1	A
	Subtotal	**2,360**	**2,109**	**89.4%**	**33.0**	**9.0**	**C**
SB	Left Turn	204	201	98.6%	49.0	6.0	D
	Through	1,628	1,526	93.7%	20.2	6.5	C
	Right Turn	24	21	86.7%	14.5	4.5	B
	Subtotal	**1,856**	**1,748**	**94.2%**	**23.4**	**6.1**	**C**
EB	Left Turn	24	29	120.0%	49.5	8.8	D
	Through	4	1	30.0%	8.5	18.5	A
	Right Turn	24	22	90.0%	10.1	5.0	B
	Subtotal	**52**	**52**	**99.2%**	**32.6**	**6.7**	**C**
WB	Left Turn	140	130	92.9%	32.4	3.8	C
	Through	4	3	70.0%	7.2	12.0	A
	Right Turn	240	246	102.7%	1.5	0.3	A
	Subtotal	**384**	**379**	**98.8%**	**12.4**	**2.3**	**B**
Total		**4,652**	**4,287**	**92.2%**	**27.3**	**4.9**	**C**

Intersection 73 **Roseville Pkwy/Alexandra Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1,804	1,728	95.8%	14.0	4.0	B
	Right Turn	128	123	95.9%	9.4	2.9	A
	Subtotal	**1,932**	**1,851**	**95.8%**	**13.7**	**3.9**	**B**
SB	Left Turn	128	121	94.7%	60.4	9.8	E
	Through	1,512	1,447	95.7%	19.7	6.5	B
	Right Turn						
	Subtotal	**1,640**	**1,568**	**95.6%**	**22.8**	**6.6**	**C**

EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	64	74	116.3%	45.6	4.4	D
	Through						
	Right Turn	64	64	100.6%	15.7	6.5	B
	Subtotal	**128**	**139**	**108.4%**	**31.4**	**3.1**	**C**
Total		**3,700**	**3,558**	**96.2%**	**18.5**	**4.3**	**B**

Intersection 75 **Roseville Pkwy/Orvietto Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	144	156	108.3%	43.6	6.2	D
	Through	1,576	1,540	97.7%	15.2	4.0	B
	Right Turn	4	4	90.0%	5.8	13.9	A
	Subtotal	**1,724**	**1,699**	**98.6%**	**17.8**	**3.6**	**B**
SB	Left Turn	20	17	84.0%	43.6	21.6	D
	Through	1,368	1,295	94.7%	39.4	15.5	D
	Right Turn	60	56	94.0%	16.2	4.9	B
	Subtotal	**1,448**	**1,368**	**94.5%**	**38.5**	**14.9**	**D**
EB	Left Turn	128	130	101.9%	45.8	7.4	D
	Through	24	26	110.0%	37.8	8.9	D
	Right Turn	200	196	98.2%	12.2	3.0	B
	Subtotal	**352**	**353**	**100.3%**	**26.5**	**3.0**	**C**
WB	Left Turn	4	1	30.0%	14.2	30.6	B
	Through	20	22	110.0%	50.2	12.1	D
	Right Turn						
	Subtotal	**24**	**23**	**96.7%**	**51.2**	**12.4**	**D**
Total		**3,548**	**3,444**	**97.1%**	**26.9**	**5.8**	**C**

Intersection 76 **Roseville Pkwy/Olympus Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	12	11	93.3%	47.9	16.6	D
	Through	1,360	1,353	99.5%	28.3	6.5	C
	Right Turn	128	135	105.3%	1.5	0.1	A
	Subtotal	**1,500**	**1,499**	**99.9%**	**26.1**	**5.8**	**C**
SB	Left Turn	260	234	90.0%	72.0	18.0	E
	Through	1,496	1,400	93.6%	31.8	12.6	C
	Right Turn	44	45	101.8%	19.3	6.4	B
	Subtotal	**1,800**	**1,679**	**93.3%**	**37.0**	**12.6**	**D**
EB	Left Turn	100	93	92.8%	56.8	20.1	E
	Through	52	50	96.2%	40.0	9.8	D

EB	Right Turn	108	94	87.0%	21.3	5.8	C
	Subtotal	**260**	**237**	**91.1%**	**38.3**	**7.4**	**D**
WB	Left Turn	40	44	111.0%	62.8	28.2	E
	Through	72	77	106.7%	40.3	4.4	D
	Right Turn	196	206	104.9%	7.9	1.2	A
	Subtotal	**308**	**327**	**106.1%**	**22.2**	**2.5**	**C**
Total		**3,868**	**3,741**	**96.7%**	**31.4**	**7.0**	**C**

Intersection 74 **Roseville Pkwy/Rocky Ridge Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	56	53	94.3%	61.1	11.8	E
	Through	1,648	1,597	96.9%	9.0	2.0	A
	Right Turn						
	Subtotal	**1,704**	**1,650**	**96.8%**	**10.7**	**1.9**	**B**
SB	Left Turn						
	Through	1,336	1,280	95.8%	18.1	3.9	B
	Right Turn	244	244	99.8%	13.9	4.3	B
	Subtotal	**1,580**	**1,524**	**96.5%**	**17.5**	**3.9**	**B**
EB	Left Turn	284	269	94.8%	44.4	2.8	D
	Through						
	Right Turn	112	104	92.9%	9.1	3.5	A
	Subtotal	**396**	**373**	**94.2%**	**34.5**	**2.6**	**C**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**3,680**	**3,547**	**96.4%**	**16.1**	**1.8**	**B**

Intersection 169 **Stanford Ranch Rd/Fairway Dr** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	176	174	98.9%	43.2	4.8	D
	Through	1,068	992	92.8%	22.8	3.9	C
	Right Turn	208	204	98.3%	5.5	2.0	A
	Subtotal	**1,452**	**1,370**	**94.4%**	**22.9**	**2.5**	**C**
SB	Left Turn	72	58	80.0%	55.2	7.1	E
	Through	804	800	99.5%	28.3	2.6	C
	Right Turn	52	53	101.5%	13.1	4.0	B
	Subtotal	**928**	**910**	**98.1%**	**29.1**	**2.9**	**C**
EB	Left Turn	88	88	100.5%	50.2	4.7	D
	Through	252	254	101.0%	34.3	4.8	C
	Right Turn	220	241	109.6%	14.2	2.2	B
	Subtotal	**560**	**584**	**104.3%**	**28.5**	**3.1**	**C**

WB	Left Turn	188	166	88.5%	46.9	9.7	D
	Through	148	139	94.1%	34.6	4.0	C
	Right Turn	20	18	90.0%	20.6	14.3	C
	Subtotal	**356**	**324**	**90.9%**	**40.2**	**4.3**	**D**
Total		**3,296**	**3,188**	**96.7%**	**27.4**	**1.8**	**C**

Intersection 170 **Stanford Ranch Rd/5 Star Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	576	539	93.6%	41.0	5.6	D
	Through	1,352	1,270	93.9%	25.9	6.4	C
	Right Turn	308	294	95.5%	3.7	1.1	A
	Subtotal	**2,236**	**2,103**	**94.0%**	**26.7**	**4.6**	**C**
SB	Left Turn	56	53	94.3%	70.9	16.8	E
	Through	1,144	1,066	93.1%	70.5	13.9	E
	Right Turn	120	108	90.3%	17.0	3.9	B
	Subtotal	**1,320**	**1,227**	**92.9%**	**65.7**	**11.9**	**E**
EB	Left Turn	120	114	94.7%	66.2	25.8	E
	Through	104	101	97.3%	65.7	25.2	E
	Right Turn	268	257	95.8%	14.1	8.0	B
	Subtotal	**492**	**472**	**95.9%**	**38.4**	**12.8**	**D**
WB	Left Turn	324	310	95.8%	53.5	23.3	D
	Through	88	87	98.6%	44.0	7.5	D
	Right Turn	40	36	90.0%	28.2	8.9	C
	Subtotal	**452**	**433**	**95.8%**	**48.0**	**12.1**	**D**
Total		**4,500**	**4,234**	**94.1%**	**41.3**	**4.3**	**D**

Intersection 32 **Washington Blvd/Pleasant Grove Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	236	235	99.7%	52.7	4.3	D
	Through	400	409	102.2%	39.2	4.2	D
	Right Turn	360	353	98.0%	10.3	1.4	B
	Subtotal	**996**	**997**	**100.1%**	**32.2**	**1.9**	**C**
SB	Left Turn	168	165	98.1%	61.6	6.9	E
	Through	472	447	94.7%	50.0	4.3	D
	Right Turn	340	352	103.6%	31.3	4.6	C
	Subtotal	**980**	**964**	**98.4%**	**45.2**	**3.7**	**D**
EB	Left Turn	172	172	100.0%	60.8	7.3	E
	Through	1,464	1,442	98.5%	45.8	12.1	D
	Right Turn	168	172	102.1%	31.6	8.7	C
	Subtotal	**1,804**	**1,786**	**99.0%**	**45.8**	**10.7**	**D**
WB	Left Turn	320	268	83.8%	58.1	8.2	E
	Through	1,756	1,561	88.9%	43.0	4.6	D

WB	Right Turn	56	50	90.0%	15.8	6.2	B
	Subtotal	**2,132**	**1,880**	**88.2%**	**44.3**	**4.5**	**D**
Total		**5,912**	**5,626**	**95.2%**	**42.9**	**3.8**	**D**

Intersection 37 **SR 65 NB Ramps/Pleasant Grove** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	480	444	92.6%	52.6	11.3	D
	Through						
	Right Turn	532	519	97.5%	23.2	2.8	C
	Subtotal	**1,012**	**963**	**95.2%**	**36.9**	**5.9**	**D**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,624	1,538	94.7%	37.2	8.4	D
	Right Turn	452	414	91.6%	15.3	4.6	B
	Subtotal	**2,076**	**1,952**	**94.0%**	**32.6**	**7.5**	**C**
WB	Left Turn	372	342	92.0%	68.0	13.6	E
	Through	1,556	1,505	96.7%	8.3	1.1	A
	Right Turn						
	Subtotal	**1,928**	**1,848**	**95.8%**	**19.5**	**3.9**	**B**
Total		**5,016**	**4,763**	**95.0%**	**28.4**	**4.2**	**C**

Intersection 36 **SR 65 SB Ramps/Pleasant Grove Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	120	111	92.3%	37.4	3.1	D
	Through						
	Right Turn	344	362	105.2%	26.2	6.6	C
	Subtotal	**464**	**473**	**101.9%**	**28.8**	**5.1**	**C**
EB	Left Turn						
	Through	1,956	1,810	92.5%	7.8	1.9	A
	Right Turn	12	16	130.0%	5.6	4.0	A
	Subtotal	**1,968**	**1,826**	**92.8%**	**7.8**	**1.9**	**A**
WB	Left Turn						
	Through	1,748	1,663	95.1%	13.6	7.0	B
	Right Turn	288	269	93.3%	8.2	1.8	A
	Subtotal	**2,036**	**1,932**	**94.9%**	**12.9**	**6.2**	**B**
Total		**4,468**	**4,230**	**94.7%**	**12.4**	**3.8**	**B**

Intersection 171 **Galleria Blvd/SR 65 NB Ramps** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	716	576	80.5%	73.9	37.8	E
	Through	1,480	1,399	94.5%	8.4	4.6	A
	Right Turn						
	Subtotal	**2,196**	**1,976**	**90.0%**	**27.4**	**14.8**	**C**
SB	Left Turn						
	Through	1,900	1,634	86.0%	72.0	29.5	E
	Right Turn	68	62	90.6%	45.7	22.0	D
	Subtotal	**1,968**	**1,696**	**86.2%**	**70.9**	**29.1**	**E**
EB	Left Turn						
	Through						
	Right Turn	376	366	97.4%	3.3	1.5	A
	Subtotal	**376**	**366**	**97.4%**	**3.3**	**1.5**	**A**
WB	Left Turn						
	Through						
	Right Turn	760	746	98.2%	1.9	0.4	A
	Subtotal	**760**	**746**	**98.2%**	**1.9**	**0.4**	**A**
Total		**5,300**	**4,784**	**90.3%**	**36.3**	**11.2**	**D**

Intersection 172 **Galleria Blvd/SR 65 SB Ramps** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	2,052	1,859	90.6%	17.0	9.7	B
	Right Turn	576	522	90.6%	13.4	3.4	B
	Subtotal	**2,628**	**2,381**	**90.6%**	**16.2**	**7.7**	**B**
SB	Left Turn	712	606	85.2%	78.0	24.2	E
	Through	1,564	1,353	86.5%	56.8	39.8	E
	Right Turn						
	Subtotal	**2,276**	**1,959**	**86.1%**	**63.4**	**34.7**	**E**
EB	Left Turn						
	Through						
	Right Turn	552	543	98.3%	18.4	19.4	B
	Subtotal	**552**	**543**	**98.3%**	**18.4**	**19.4**	**B**
WB	Left Turn						
	Through	144	135	93.9%	2.2	1.8	A
	Right Turn						
	Subtotal	**144**	**135**	**93.9%**	**2.2**	**1.8**	**A**
Total		**5,600**	**5,018**	**89.6%**	**33.8**	**12.2**	**C**

Intersection 107 **Foothills Blvd/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	102	96	94.4%	44.4	3.6	D
	Right Turn	54	56	103.5%	27.3	4.1	C
	Subtotal	**156**	**152**	**97.6%**	**38.2**	**3.8**	**D**
SB	Left Turn	341	355	104.0%	48.8	12.7	D
	Through	93	117	126.0%	32.1	11.1	C
	Right Turn						
	Subtotal	**434**	**472**	**108.8%**	**44.7**	**11.2**	**D**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	95	83	87.3%	69.1	8.6	E
	Through						
	Right Turn	421	374	88.9%	41.7	10.2	D
	Subtotal	**516**	**457**	**88.6%**	**46.7**	**9.4**	**D**
Total		**1,106**	**1,081**	**97.8%**	**44.8**	**6.2**	**D**

Intersection 110 **Melody Ln/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	59	58	98.8%	14.2	6.8	B
	Subtotal	**59**	**58**	**98.8%**	**14.2**	**6.8**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	407	401	98.6%	12.3	3.4	B
	Right Turn	3	3	83.3%	13.2	9.2	B
	Subtotal	**410**	**404**	**98.5%**	**12.3**	**3.3**	**B**
WB	Left Turn	63	56	88.9%	18.5	2.1	B
	Through	491	439	89.4%	3.0	0.2	A
	Right Turn						
	Subtotal	**554**	**495**	**89.3%**	**4.8**	**0.4**	**A**
Total		**1,023**	**957**	**93.5%**	**8.5**	**1.7**	**A**

Intersection 109 **Northridge Dr/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	5	5	90.0%	21.5	17.2	C
	Subtotal	**5**	**5**	**90.0%**	**21.5**	**17.2**	**C**
SB	Left Turn	9	12	130.0%	70.7	7.7	E
	Through						
	Right Turn	3	3	96.7%	41.9	19.3	D
	Subtotal	**12**	**15**	**121.7%**	**65.9**	**10.0**	**E**
EB	Left Turn	3	4	116.7%	54.8	16.8	D
	Through	397	397	100.0%	8.4	2.0	A
	Right Turn	5	5	92.0%	6.6	4.4	A
	Subtotal	**405**	**405**	**100.0%**	**8.8**	**2.0**	**A**
WB	Left Turn	4	4	97.5%	49.3	14.5	D
	Through	472	422	89.3%	3.2	1.6	A
	Right Turn	2	2	95.0%	1.3	2.3	A
	Subtotal	**478**	**427**	**89.4%**	**3.7**	**1.5**	**A**
Total		**900**	**852**	**94.6%**	**7.2**	**1.4**	**A**

Intersection 111 **Riverside Ave/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	278	238	85.6%	101.1	14.6	F
	Through	153	151	98.4%	28.4	3.7	C
	Right Turn	49	49	100.2%	12.1	2.2	B
	Subtotal	**480**	**438**	**91.2%**	**66.2**	**8.6**	**E**
SB	Left Turn	42	41	98.1%	75.3	13.0	E
	Through	133	138	103.8%	77.5	8.8	E
	Right Turn	36	32	88.6%	54.3	12.3	D
	Subtotal	**211**	**211**	**100.0%**	**73.7**	**9.1**	**E**
EB	Left Turn	43	37	86.5%	66.2	13.1	E
	Through	182	173	94.9%	59.6	10.9	E
	Right Turn	241	235	97.6%	3.8	0.4	A
	Subtotal	**466**	**445**	**95.6%**	**30.8**	**6.4**	**C**
WB	Left Turn	98	94	96.2%	90.4	25.7	F
	Through	263	249	94.5%	96.2	45.2	F
	Right Turn						
	Subtotal	**361**	**343**	**95.0%**	**94.9**	**37.5**	**F**
Total		**1,518**	**1,437**	**94.7%**	**62.9**	**7.5**	**E**

Intersection 108 **Vernon St/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	18	18	100.0%	51.3	9.8	D
	Through	18	16	88.3%	46.1	6.5	D
	Right Turn	33	33	99.4%	22.9	3.6	C
	Subtotal	**69**	**67**	**96.7%**	**36.0**	**4.6**	**D**
SB	Left Turn	23	21	90.4%	71.8	10.5	E
	Through	28	24	86.8%	59.1	9.1	E
	Right Turn	87	85	97.4%	50.3	10.7	D
	Subtotal	**138**	**130**	**94.1%**	**55.2**	**8.9**	**E**
EB	Left Turn	38	35	91.1%	59.1	10.1	E
	Through	351	361	102.8%	32.6	9.2	C
	Right Turn	6	7	118.3%	32.9	13.7	C
	Subtotal	**395**	**402**	**101.9%**	**34.8**	**9.1**	**C**
WB	Left Turn	22	19	88.2%	47.8	6.3	D
	Through	410	378	92.3%	26.9	5.0	C
	Right Turn	11	11	102.7%	14.1	6.3	B
	Subtotal	**443**	**409**	**92.3%**	**27.6**	**4.8**	**C**
Total		**1,045**	**1,008**	**96.5%**	**34.6**	**4.0**	**C**

Intersection 203 **Riverside Ave/I-80 WB Ramps** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	402	372	92.5%	35.6	20.5	D
	Right Turn	57	52	90.9%	12.1	8.5	B
	Subtotal	**459**	**424**	**92.3%**	**32.7**	**19.2**	**C**
SB	Left Turn						
	Through	220	210	95.6%	31.1	10.2	C
	Right Turn	252	254	100.6%	19.8	8.1	B
	Subtotal	**472**	**464**	**98.3%**	**24.9**	**8.7**	**C**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	127	120	94.3%	42.1	8.3	D
	Through						
	Right Turn	57	59	104.0%	15.7	6.0	B
	Subtotal	**184**	**179**	**97.3%**	**33.4**	**6.5**	**C**
Total		**1,115**	**1,067**	**95.7%**	**29.2**	**8.9**	**C**

Intersection 204 **Riverside Ave/I-80 EB Ramps** **Signal**

SimTraffic Post-Processor **Amoruso EIR**
Average Results from 10 Runs **Existing Plus Project Conditions**
Volume and Delay by Movement **PM Peak Hour**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	287	271	94.4%	34.1	3.6	C
	Right Turn	18	19	102.8%	28.6	4.9	C
	Subtotal	**305**	**290**	**94.9%**	**33.8**	**3.6**	**C**
SB	Left Turn	23	23	100.9%	72.1	8.9	E
	Through	260	241	92.8%	36.1	9.3	D
	Right Turn						
	Subtotal	**283**	**264**	**93.4%**	**39.3**	**8.5**	**D**
EB	Left Turn						
	Through	110	112	101.5%	43.2	3.7	D
	Right Turn	51	46	89.6%	21.9	4.1	C
	Subtotal	**161**	**157**	**97.7%**	**37.1**	**3.7**	**D**
WB	Left Turn	41	38	93.7%	45.3	5.5	D
	Through						
	Right Turn	52	47	90.6%	5.1	1.2	A
	Subtotal	**93**	**86**	**91.9%**	**23.0**	**3.5**	**C**
Total		**842**	**797**	**94.6%**	**35.1**	**2.4**	**D**

INTERSECTINS OUTSIDE OF ROSEVILLE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	194	4	52	647	19	6	5	22	13	1	1
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	204	4	57	703	21	6	5	23	14	1	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	211	780	35	16
Volume Left (vph)	2	57	6	14
Volume Right (vph)	4	21	23	1
Hadj (s)	0.02	0.03	-0.33	0.17
Departure Headway (s)	4.9	4.3	5.8	6.3
Degree Utilization, x	0.29	0.94	0.06	0.03
Capacity (veh/h)	725	824	593	537
Control Delay (s)	9.8	38.8	9.1	9.5
Approach Delay (s)	9.8	38.8	9.1	9.5
Approach LOS	A	E	A	A

Intersection Summary				
Delay		31.5		
HCM Level of Service		D		
Intersection Capacity Utilization		62.0%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	10	143	604	58	40	264
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	11	157	664	64	44	290

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total (vph)	168	664	64	334
Volume Left (vph)	11	0	0	44
Volume Right (vph)	0	0	64	290
Hadj (s)	0.05	0.03	-0.67	-0.46
Departure Headway (s)	6.1	5.8	5.1	5.6
Degree Utilization, x	0.28	1.07	0.09	0.52
Capacity (veh/h)	570	609	693	628
Control Delay (s)	11.4	80.0	7.4	14.6
Approach Delay (s)	11.4	73.6		14.6
Approach LOS	B	F		B

Intersection Summary			
Delay	49.1		
HCM Level of Service	E		
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	136	44	187	597	63	29
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	151	49	208	663	70	32

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total (vph)	151	49	871	102
Volume Left (vph)	0	0	208	70
Volume Right (vph)	0	49	0	32
Hadj (s)	0.03	-0.67	0.08	-0.02
Departure Headway (s)	5.5	4.8	4.7	6.1
Degree Utilization, x	0.23	0.06	1.13	0.17
Capacity (veh/h)	647	735	760	574
Control Delay (s)	8.9	6.9	93.7	10.4
Approach Delay (s)	8.4		93.7	10.4
Approach LOS	A		F	B

Intersection Summary			
Delay	71.9		
HCM Level of Service	F		
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	1	0	336	1	15	1	228	297	7	434	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	1	0	425	1	19	1	289	376	9	549	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	1	427	19	666	558
Volume Left (vph)	0	425	0	1	9
Volume Right (vph)	0	0	19	376	0
Hadj (s)	0.03	0.53	-0.67	-0.30	0.04
Departure Headway (s)	9.5	8.1	6.9	6.6	6.9
Degree Utilization, x	0.00	0.96	0.04	1.22	1.07
Capacity (veh/h)	367	439	512	554	529
Control Delay (s)	12.6	61.4	9.0	136.6	87.1
Approach Delay (s)	12.6	59.1		136.6	87.1
Approach LOS	B	F		F	F

Intersection Summary				
Delay	99.3			
HCM Level of Service	F			
Intersection Capacity Utilization	62.8%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	97	328	7	34	79	87	4	7	15	187	44	183
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	114	386	8	40	93	102	5	8	18	220	52	215

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	508	235	31	487
Volume Left (vph)	114	40	5	220
Volume Right (vph)	8	102	18	215
Hadj (s)	0.07	-0.19	-0.28	-0.14
Departure Headway (s)	6.2	6.5	7.3	6.1
Degree Utilization, x	0.87	0.42	0.06	0.83
Capacity (veh/h)	568	519	423	571
Control Delay (s)	37.6	14.2	10.8	31.9
Approach Delay (s)	37.6	14.2	10.8	31.9
Approach LOS	E	B	B	D

Intersection Summary			
Delay	30.4		
HCM Level of Service	D		
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	400	21	58	230	118	196
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	471	25	68	271	139	231
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	661	254	369			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	661	254	369			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	97	94			
cM capacity (veh/h)	403	785	1189			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	495	339	369
Volume Left	471	68	0
Volume Right	25	0	231
cSH	413	1189	1700
Volume to Capacity	1.20	0.06	0.22
Queue Length 95th (ft)	493	5	0
Control Delay (s)	140.8	2.1	0.0
Lane LOS	F	A	
Approach Delay (s)	140.8	2.1	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	58.5		
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	203	0	11	0	127	524	13	113	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	0	216	0	12	0	135	557	14	120	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	228	693	134
Volume Left (vph)	0	216	0	14
Volume Right (vph)	0	12	557	0
Hadj (s)	0.00	0.19	-0.45	0.05
Departure Headway (s)	6.4	6.0	4.4	5.5
Degree Utilization, x	0.00	0.38	0.84	0.21
Capacity (veh/h)	523	563	807	613
Control Delay (s)	9.4	12.6	26.2	10.0
Approach Delay (s)	0.0	12.6	26.2	10.0
Approach LOS	A	B	D	A

Intersection Summary				
Delay		21.2		
HCM Level of Service		C		
Intersection Capacity Utilization		57.6%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	287	145	9	197	60	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	302	153	9	207	63	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			455		528	302
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			455		528	302
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		88	96
cM capacity (veh/h)			1106		506	738

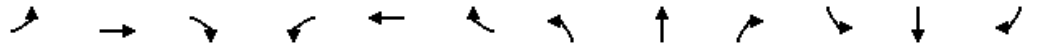
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	302	153	9	207	63	29
Volume Left	0	0	9	0	63	0
Volume Right	0	153	0	0	0	29
cSH	1700	1700	1106	1700	506	738
Volume to Capacity	0.18	0.09	0.01	0.12	0.12	0.04
Queue Length 95th (ft)	0	0	1	0	11	3
Control Delay (s)	0.0	0.0	8.3	0.0	13.1	10.1
Lane LOS			A		B	B
Approach Delay (s)	0.0		0.4		12.2	
Approach LOS					B	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	657	16	0	656	254	272	0	1016	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Lane Util. Factor		0.91	1.00		0.91	1.00	0.95	0.95	0.88			
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1681	1681	2787			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1681	1681	2787			
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	747	18	0	745	289	309	0	1155	0	0	0
RTOR Reduction (vph)	0	0	14	0	0	219	0	0	748	0	0	0
Lane Group Flow (vph)	0	747	4	0	745	70	154	155	407	0	0	0
Turn Type			Perm			Perm	Split		Perm			
Protected Phases		2			6		8	8				
Permitted Phases			2			6			8			
Actuated Green, G (s)		13.8	13.8		14.3	14.3	15.2	15.2	15.2			
Effective Green, g (s)		13.8	13.8		14.3	14.3	15.2	15.2	15.2			
Actuated g/C Ratio		0.23	0.23		0.24	0.24	0.26	0.26	0.26			
Clearance Time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Vehicle Extension (s)		1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Lane Grp Cap (vph)		1185	369		1228	382	432	432	716			
v/s Ratio Prot		c0.15			c0.15		0.09	0.09				
v/s Ratio Perm			0.00			0.04			c0.15			
v/c Ratio		0.63	0.01		0.61	0.18	0.36	0.36	0.57			
Uniform Delay, d1		20.4	17.5		20.0	17.8	18.0	18.0	19.1			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.8	0.0		0.6	0.1	0.2	0.2	0.6			
Delay (s)		21.2	17.5		20.5	17.9	18.2	18.2	19.8			
Level of Service		C	B		C	B	B	B	B			
Approach Delay (s)		21.1			19.8			19.4			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	59.2	Sum of lost time (s)	15.9
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	✣	↱
Volume (vph)	0	201	178	0	454	478	0	0	0	475	0	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1583		5085	1583				1681	1609	1504
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1583		5085	1583				1681	1609	1504
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	226	200	0	510	537	0	0	0	534	0	83
RTOR Reduction (vph)	0	0	163	0	0	396	0	0	0	0	1	55
Lane Group Flow (vph)	0	226	37	0	510	141	0	0	0	272	269	20
Turn Type			Perm			Perm				Split		Perm
Protected Phases		2			6					4	4	
Permitted Phases			2			6						4
Actuated Green, G (s)		9.5	9.5		13.7	13.7				13.6	13.6	13.6
Effective Green, g (s)		9.5	9.5		13.7	13.7				13.6	13.6	13.6
Actuated g/C Ratio		0.18	0.18		0.26	0.26				0.26	0.26	0.26
Clearance Time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Vehicle Extension (s)		1.0	1.0		1.0	1.0				1.0	1.0	1.0
Lane Grp Cap (vph)		929	289		1340	417				440	421	393
v/s Ratio Prot		c0.04			c0.10					0.16	c0.17	
v/s Ratio Perm			0.02			0.09						0.01
v/c Ratio		0.24	0.13		0.38	0.34				0.62	0.64	0.05
Uniform Delay, d1		18.2	17.8		15.7	15.5				16.9	17.0	14.4
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.0	0.1		0.1	0.2				1.8	2.3	0.0
Delay (s)		18.2	17.9		15.7	15.7				18.7	19.4	14.4
Level of Service		B	B		B	B				B	B	B
Approach Delay (s)		18.0			15.7			0.0			18.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	561	19	2	588	107	32	83	4	382	52	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.41	1.00	1.00	0.42	1.00	1.00	0.72	1.00	1.00	0.70	1.00	1.00
Satd. Flow (perm)	767	3539	1583	1532	3539	1583	2604	1863	1583	2527	1863	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	29	603	20	2	632	115	34	89	4	411	56	39
RTOR Reduction (vph)	0	0	13	0	0	74	0	0	3	0	0	26
Lane Group Flow (vph)	29	603	7	2	632	41	34	89	1	411	56	13
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	11.6	11.6	11.6	11.6	11.6	11.6	10.9	10.9	10.9	10.9	10.9	10.9
Effective Green, g (s)	11.6	11.6	11.6	11.6	11.6	11.6	10.9	10.9	10.9	10.9	10.9	10.9
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	0.36	0.34	0.34	0.34	0.34	0.34	0.34
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	274	1263	565	547	1263	565	873	625	531	848	625	531
v/s Ratio Prot		0.17			c0.18			0.05			0.03	
v/s Ratio Perm	0.04		0.00	0.00		0.03	0.01		0.00	c0.16		0.01
v/c Ratio	0.11	0.48	0.01	0.00	0.50	0.07	0.04	0.14	0.00	0.48	0.09	0.02
Uniform Delay, d1	7.0	8.1	6.8	6.7	8.2	6.9	7.3	7.5	7.2	8.6	7.4	7.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	0.0	0.0	0.3	0.1	0.0	0.1	0.0	0.4	0.1	0.0
Delay (s)	7.2	8.4	6.8	6.7	8.5	7.0	7.3	7.6	7.2	9.0	7.5	7.3
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		8.3			8.3			7.5			8.7	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	32.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	0	13	101	13	6	115
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	16	128	16	8	146

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	16	144	153
Volume Left (vph)	0	128	8
Volume Right (vph)	16	0	146
Hadj (s)	-0.57	0.21	-0.53
Departure Headway (s)	3.8	4.4	3.7
Degree Utilization, x	0.02	0.18	0.16
Capacity (veh/h)	897	785	919
Control Delay (s)	6.9	8.4	7.4
Approach Delay (s)	6.9	8.4	7.4
Approach LOS	A	A	A

Intersection Summary			
Delay	7.8		
HCM Level of Service	A		
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	38	680	194	35	41	269	480	42	64	220	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1598		1681	1710	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.67	1.00		0.25	0.22	1.00	0.59	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	1246	1598		448	381	1583	1103	5085	1583	1593	5085	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	18	43	764	218	39	46	302	539	47	72	247	4
RTOR Reduction (vph)	0	287	0	0	0	28	0	0	30	0	0	3
Lane Group Flow (vph)	18	520	0	126	131	18	302	539	17	72	247	1
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	15.8	15.8		15.8	15.8	15.8	14.2	14.2	14.2	14.2	14.2	14.2
Effective Green, g (s)	15.8	15.8		15.8	15.8	15.8	14.2	14.2	14.2	14.2	14.2	14.2
Actuated g/C Ratio	0.40	0.40		0.40	0.40	0.40	0.35	0.35	0.35	0.35	0.35	0.35
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	492	631		177	150	625	392	1805	562	566	1805	562
v/s Ratio Prot		0.33						0.11			0.05	
v/s Ratio Perm	0.01			0.28	c0.34	0.01	c0.27		0.01	0.05		0.00
v/c Ratio	0.04	0.82		0.71	0.87	0.03	0.77	0.30	0.03	0.13	0.14	0.00
Uniform Delay, d1	7.4	10.9		10.2	11.2	7.4	11.5	9.3	8.4	8.7	8.7	8.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	8.6		12.7	38.9	0.0	9.0	0.1	0.0	0.1	0.0	0.0
Delay (s)	7.5	19.5		22.9	50.1	7.4	20.5	9.4	8.4	8.8	8.8	8.3
Level of Service	A	B		C	D	A	C	A	A	A	A	A
Approach Delay (s)		19.2			32.3			13.1			8.8	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	253	63	34	128	16	227	208	73	53	189	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.65	1.00	1.00	0.56	1.00	1.00	0.61	1.00	1.00	0.59	1.00	1.00
Satd. Flow (perm)	1214	3539	1583	2032	3539	1583	2192	3539	1583	2142	3539	1583
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	46	312	78	42	158	20	280	257	90	65	233	22
RTOR Reduction (vph)	0	0	56	0	0	14	0	0	54	0	0	13
Lane Group Flow (vph)	46	312	22	42	158	6	280	257	36	65	233	9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	8.6	8.6	8.6	8.6	8.6	8.6	12.3	12.3	12.3	12.3	12.3	12.3
Effective Green, g (s)	8.6	8.6	8.6	8.6	8.6	8.6	12.3	12.3	12.3	12.3	12.3	12.3
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.28	0.28	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	338	985	441	566	985	441	873	1409	630	853	1409	630
v/s Ratio Prot		c0.09			0.04			0.07			0.07	
v/s Ratio Perm	0.04		0.01	0.02		0.00	c0.13		0.02	0.03		0.01
v/c Ratio	0.14	0.32	0.05	0.07	0.16	0.01	0.32	0.18	0.06	0.08	0.17	0.01
Uniform Delay, d1	8.4	8.8	8.2	8.2	8.4	8.1	6.4	6.0	5.7	5.8	6.0	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2	0.0	0.1	0.1	0.0	0.2	0.1	0.0	0.0	0.1	0.0
Delay (s)	8.5	9.0	8.2	8.3	8.5	8.1	6.6	6.1	5.8	5.8	6.0	5.6
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		8.8			8.4			6.3			6.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	30.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	236	85	351	542	59	50	149	263	46	158	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	130	311	112	462	713	78	66	196	346	61	208	136
RTOR Reduction (vph)	0	0	92	0	0	41	0	0	277	0	0	109
Lane Group Flow (vph)	130	311	20	462	713	37	66	196	69	61	208	27
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.4	15.9	15.9	26.4	30.9	30.9	6.8	17.4	17.4	6.5	17.1	17.1
Effective Green, g (s)	11.4	15.9	15.9	26.4	30.9	30.9	6.8	17.4	17.4	6.5	17.1	17.1
Actuated g/C Ratio	0.13	0.18	0.18	0.30	0.35	0.35	0.08	0.20	0.20	0.07	0.19	0.19
Clearance Time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	230	642	287	533	1247	558	137	370	314	131	363	309
v/s Ratio Prot	0.07	0.09		c0.26	c0.20		c0.04	0.11		0.03	c0.11	
v/s Ratio Perm			0.01			0.02			0.04			0.02
v/c Ratio	0.57	0.48	0.07	0.87	0.57	0.07	0.48	0.53	0.22	0.47	0.57	0.09
Uniform Delay, d1	35.8	32.2	29.8	29.0	23.0	18.8	38.8	31.5	29.5	38.9	32.0	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.6	0.1	13.4	0.6	0.0	1.0	1.4	0.4	1.0	2.2	0.1
Delay (s)	37.7	32.8	29.9	42.4	23.7	18.9	39.7	32.9	29.8	39.9	34.2	29.0
Level of Service	D	C	C	D	C	B	D	C	C	D	C	C
Approach Delay (s)		33.4			30.3			31.9			33.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	87.7	Sum of lost time (s)	16.1
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	3	715	6	19	297	17	4	3	202	36	5	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	3	745	6	20	309	18	4	3	210	38	5	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	754	347	218	46
Volume Left (vph)	3	20	4	38
Volume Right (vph)	6	18	210	3
Hadj (s)	0.03	0.01	-0.54	0.16
Departure Headway (s)	5.4	5.8	6.1	7.3
Degree Utilization, x	1.13	0.56	0.37	0.09
Capacity (veh/h)	661	609	566	442
Control Delay (s)	97.4	15.8	12.6	11.1
Approach Delay (s)	97.4	15.8	12.6	11.1
Approach LOS	F	C	B	B

Intersection Summary				
Delay		60.2		
HCM Level of Service		F		
Intersection Capacity Utilization		65.1%	ICU Level of Service	C
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	231	574	232	92	49	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	248	617	249	99	53	18

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total (vph)	866	249	99	71
Volume Left (vph)	248	0	0	53
Volume Right (vph)	0	0	99	18
Hadj (s)	0.09	0.03	-0.67	0.03
Departure Headway (s)	4.7	5.3	4.6	6.3
Degree Utilization, x	1.14	0.37	0.13	0.12
Capacity (veh/h)	753	663	759	546
Control Delay (s)	96.1	10.3	7.1	10.2
Approach Delay (s)	96.1	9.4		10.2
Approach LOS	F	A		B

Intersection Summary			
Delay	67.8		
HCM Level of Service	F		
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	554	62	31	209	114	168
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	577	65	32	218	119	175

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total (vph)	577	65	250	294
Volume Left (vph)	0	0	32	119
Volume Right (vph)	0	65	0	175
Hadj (s)	0.03	-0.67	0.06	-0.24
Departure Headway (s)	5.9	5.1	6.0	6.0
Degree Utilization, x	0.94	0.09	0.42	0.49
Capacity (veh/h)	609	685	583	585
Control Delay (s)	45.4	7.5	13.2	14.5
Approach Delay (s)	41.6		13.2	14.5
Approach LOS	E		B	B

Intersection Summary			
Delay	28.9		
HCM Level of Service	D		
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	0	3	135	2	7	3	347	243	15	272	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	3	147	2	8	3	377	264	16	296	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	5	149	8	645	312
Volume Left (vph)	2	147	0	3	16
Volume Right (vph)	3	0	8	264	0
Hadj (s)	-0.25	0.53	-0.67	-0.21	0.04
Departure Headway (s)	6.6	7.3	6.1	4.7	5.4
Degree Utilization, x	0.01	0.30	0.01	0.85	0.47
Capacity (veh/h)	488	463	550	749	642
Control Delay (s)	9.7	12.3	8.0	28.2	13.0
Approach Delay (s)	9.7	12.1		28.2	13.0
Approach LOS	A	B		D	B

Intersection Summary				
Delay	21.6			
HCM Level of Service	C			
Intersection Capacity Utilization	55.0%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	154	168	5	6	258	153	3	6	15	129	4	81
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	167	183	5	7	280	166	3	7	16	140	4	88

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	355	453	26	233
Volume Left (vph)	167	7	3	140
Volume Right (vph)	5	166	16	88
Hadj (s)	0.12	-0.18	-0.32	-0.07
Departure Headway (s)	5.5	5.1	6.3	5.9
Degree Utilization, x	0.54	0.64	0.05	0.38
Capacity (veh/h)	624	682	451	547
Control Delay (s)	14.8	16.7	9.6	12.6
Approach Delay (s)	14.8	16.7	9.6	12.6
Approach LOS	B	C	A	B

Intersection Summary				
Delay	15.0			
HCM Level of Service	B			
Intersection Capacity Utilization	69.9%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	299	65	30	226	209	462
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	336	73	34	254	235	519
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	816	494	754			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	816	494	754			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	87	96			
cM capacity (veh/h)	333	575	856			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	409	288	754
Volume Left	336	34	0
Volume Right	73	0	519
cSH	360	856	1700
Volume to Capacity	1.14	0.04	0.44
Queue Length 95th (ft)	395	3	0
Control Delay (s)	123.3	1.5	0.0
Lane LOS	F	A	
Approach Delay (s)	123.3	1.5	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	35.1		
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	548	1	18	0	149	346	14	103	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	577	1	19	0	157	364	15	108	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	597	521	123
Volume Left (vph)	0	577	0	15
Volume Right (vph)	0	19	364	0
Hadj (s)	0.00	0.21	-0.39	0.06
Departure Headway (s)	7.3	6.0	5.8	7.0
Degree Utilization, x	0.00	1.00	0.83	0.24
Capacity (veh/h)	466	594	625	509
Control Delay (s)	10.3	61.4	31.1	12.1
Approach Delay (s)	0.0	61.4	31.1	12.1
Approach LOS	A	F	D	B

Intersection Summary				
Delay		43.8		
HCM Level of Service		E		
Intersection Capacity Utilization		67.3%	ICU Level of Service	C
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	327	67	36	360	58	64
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	367	75	40	404	65	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			443		853	367
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			443		853	367
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		79	89
cM capacity (veh/h)			1117		318	678

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	367	75	40	404	65	72
Volume Left	0	0	40	0	65	0
Volume Right	0	75	0	0	0	72
cSH	1700	1700	1117	1700	318	678
Volume to Capacity	0.22	0.04	0.04	0.24	0.21	0.11
Queue Length 95th (ft)	0	0	3	0	19	9
Control Delay (s)	0.0	0.0	8.3	0.0	19.2	10.9
Lane LOS			A		C	B
Approach Delay (s)	0.0		0.8		14.9	
Approach LOS					B	

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	485	93	0	926	408	265	0	347	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Lane Util. Factor		0.91	1.00		0.91	1.00	0.95	0.95	0.88			
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1681	1681	2787			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1681	1681	2787			
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	557	107	0	1064	469	305	0	399	0	0	0
RTOR Reduction (vph)	0	0	86	0	0	323	0	0	308	0	0	0
Lane Group Flow (vph)	0	557	21	0	1064	146	152	153	91	0	0	0
Turn Type			Perm			Perm	Split		Perm			
Protected Phases		2			6		8	8				
Permitted Phases			2			6			8			
Actuated Green, G (s)		12.2	12.2		19.0	19.0	14.0	14.0	14.0			
Effective Green, g (s)		12.2	12.2		19.0	19.0	14.0	14.0	14.0			
Actuated g/C Ratio		0.20	0.20		0.31	0.31	0.23	0.23	0.23			
Clearance Time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Vehicle Extension (s)		1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Lane Grp Cap (vph)		1015	316		1581	492	385	385	639			
v/s Ratio Prot		c0.11			c0.21		0.09	c0.09				
v/s Ratio Perm			0.01			0.09			0.03			
v/c Ratio		0.55	0.07		0.67	0.30	0.39	0.40	0.14			
Uniform Delay, d1		22.0	19.8		18.3	16.0	20.0	20.0	18.8			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.3	0.0		0.9	0.1	0.2	0.2	0.0			
Delay (s)		22.3	19.9		19.2	16.1	20.2	20.2	18.8			
Level of Service		C	B		B	B	C	C	B			
Approach Delay (s)		21.9			18.3			19.4			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	15.9
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	319	456	0	543	654	0	0	0	249	1	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1583		5085	1583				1681	1607	1504
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1583		5085	1583				1681	1607	1504
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	375	536	0	639	769	0	0	0	293	1	66
RTOR Reduction (vph)	0	0	427	0	0	546	0	0	0	0	2	46
Lane Group Flow (vph)	0	375	109	0	639	223	0	0	0	152	147	13
Turn Type			Perm			Perm				Split		Perm
Protected Phases		2			6					4	4	
Permitted Phases			2			6						4
Actuated Green, G (s)		10.7	10.7		15.2	15.2				11.3	11.3	11.3
Effective Green, g (s)		10.7	10.7		15.2	15.2				11.3	11.3	11.3
Actuated g/C Ratio		0.20	0.20		0.29	0.29				0.22	0.22	0.22
Clearance Time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Vehicle Extension (s)		1.0	1.0		1.0	1.0				1.0	1.0	1.0
Lane Grp Cap (vph)		1038	323		1475	459				363	347	324
v/s Ratio Prot		c0.07			0.13					0.09	c0.09	
v/s Ratio Perm			0.07			c0.14						0.01
v/c Ratio		0.36	0.34		0.43	0.49				0.42	0.42	0.04
Uniform Delay, d1		17.9	17.8		15.1	15.4				17.7	17.7	16.3
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	0.2		0.1	0.3				0.3	0.3	0.0
Delay (s)		18.0	18.1		15.2	15.7				18.0	18.1	16.3
Level of Service		B	B		B	B				B	B	B
Approach Delay (s)		18.0			15.4			0.0			17.7	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	15.2
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	696	33	5	604	291	14	59	11	156	72	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.40	1.00	1.00	0.36	1.00	1.00	0.71	1.00	1.00	0.72	1.00	1.00
Satd. Flow (perm)	749	3539	1583	1317	3539	1583	2552	1863	1583	2585	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	757	36	5	657	316	15	64	12	170	78	60
RTOR Reduction (vph)	0	0	21	0	0	185	0	0	9	0	0	45
Lane Group Flow (vph)	64	757	15	5	657	131	15	64	3	170	78	15
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	12.4	12.4	12.4	12.4	12.4	12.4	7.6	7.6	7.6	7.6	7.6	7.6
Effective Green, g (s)	12.4	12.4	12.4	12.4	12.4	12.4	7.6	7.6	7.6	7.6	7.6	7.6
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41	0.25	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	310	1463	654	544	1463	654	647	472	401	655	472	401
v/s Ratio Prot		c0.21			0.19			0.03			0.04	
v/s Ratio Perm	0.09		0.01	0.00		0.08	0.01		0.00	c0.07		0.01
v/c Ratio	0.21	0.52	0.02	0.01	0.45	0.20	0.02	0.14	0.01	0.26	0.17	0.04
Uniform Delay, d1	5.6	6.6	5.2	5.2	6.3	5.6	8.4	8.7	8.4	9.0	8.7	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.0	0.0	0.2	0.2	0.0	0.1	0.0	0.2	0.2	0.0
Delay (s)	6.0	6.9	5.2	5.2	6.6	5.8	8.4	8.8	8.4	9.2	8.9	8.5
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		6.7			6.3			8.7			9.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	30.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	24	11	130	4	15	110
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	29	13	155	5	18	131

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	42	160	149
Volume Left (vph)	0	155	18
Volume Right (vph)	13	0	131
Hadj (s)	-0.15	0.23	-0.47
Departure Headway (s)	4.2	4.5	3.9
Degree Utilization, x	0.05	0.20	0.16
Capacity (veh/h)	810	767	877
Control Delay (s)	7.5	8.6	7.6
Approach Delay (s)	7.5	8.6	7.6
Approach LOS	A	A	A

Intersection Summary			
Delay	8.1		
HCM Level of Service	A		
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	44	220	231	68	103	363	552	75	117	265	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.88		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1630		1681	1722	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.65	1.00		0.59	0.68	1.00	0.58	1.00	1.00	0.43	1.00	1.00
Satd. Flow (perm)	1217	1630		1048	1210	1583	1078	5085	1583	1555	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	5	45	224	236	69	105	370	563	77	119	270	7
RTOR Reduction (vph)	0	170	0	0	0	80	0	0	39	0	0	4
Lane Group Flow (vph)	5	99	0	149	156	25	370	563	38	119	270	3
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	9.1	9.1		9.1	9.1	9.1	18.6	18.6	18.6	18.6	18.6	18.6
Effective Green, g (s)	9.1	9.1		9.1	9.1	9.1	18.6	18.6	18.6	18.6	18.6	18.6
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.49	0.49	0.49	0.49	0.49	0.49
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	294	393		253	292	382	532	2509	781	767	2509	781
v/s Ratio Prot		0.06						0.11			0.05	
v/s Ratio Perm	0.00			c0.14	0.13	0.02	c0.34		0.02	0.08		0.00
v/c Ratio	0.02	0.25		0.59	0.53	0.07	0.70	0.22	0.05	0.16	0.11	0.00
Uniform Delay, d1	10.9	11.6		12.6	12.5	11.0	7.4	5.4	5.0	5.2	5.1	4.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.3		3.5	1.9	0.1	3.9	0.0	0.0	0.1	0.0	0.0
Delay (s)	10.9	11.9		16.1	14.3	11.1	11.3	5.5	5.0	5.3	5.1	4.9
Level of Service	B	B		B	B	B	B	A	A	A	A	A
Approach Delay (s)		11.9			14.2			7.6			5.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	37.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	180	64	87	171	20	271	264	112	42	251	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.68	1.00	1.00	0.68	1.00	1.00	0.59	1.00	1.00	0.59	1.00	1.00
Satd. Flow (perm)	1263	3539	1583	2450	3539	1583	2144	3539	1583	2118	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	32	184	65	89	174	20	277	269	114	43	256	83
RTOR Reduction (vph)	0	0	52	0	0	16	0	0	62	0	0	45
Lane Group Flow (vph)	32	184	13	89	174	4	277	269	52	43	256	38
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	5.9	5.9	5.9	5.9	5.9	5.9	13.2	13.2	13.2	13.2	13.2	13.2
Effective Green, g (s)	5.9	5.9	5.9	5.9	5.9	5.9	13.2	13.2	13.2	13.2	13.2	13.2
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.45	0.45	0.45	0.45	0.45	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	718	321	497	718	321	973	1605	718	961	1605	718
v/s Ratio Prot		c0.05			0.05			0.08			0.07	
v/s Ratio Perm	0.03		0.01	0.04		0.00	c0.13		0.03	0.02		0.02
v/c Ratio	0.12	0.26	0.04	0.18	0.24	0.01	0.28	0.17	0.07	0.04	0.16	0.05
Uniform Delay, d1	9.5	9.8	9.3	9.6	9.7	9.3	5.0	4.7	4.5	4.4	4.7	4.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2	0.1	0.2	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Delay (s)	9.7	9.9	9.4	9.8	9.9	9.3	5.1	4.8	4.5	4.5	4.7	4.5
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		9.8			9.8			4.9			4.6	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	29.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	487	15	96	259	54	15	118	119	88	99	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	259	507	16	100	270	56	16	123	124	92	103	125
RTOR Reduction (vph)	0	0	10	0	0	46	0	0	98	0	0	89
Lane Group Flow (vph)	259	507	6	100	270	10	16	123	26	92	103	36
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.4	29.0	29.0	7.8	15.4	15.4	0.9	17.4	17.4	7.5	24.0	24.0
Effective Green, g (s)	21.4	29.0	29.0	7.8	15.4	15.4	0.9	17.4	17.4	7.5	24.0	24.0
Actuated g/C Ratio	0.26	0.35	0.35	0.09	0.19	0.19	0.01	0.21	0.21	0.09	0.29	0.29
Clearance Time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	455	1234	552	166	655	293	19	390	331	160	537	457
v/s Ratio Prot	c0.15	c0.14		0.06	0.08		0.01	c0.07		c0.05	0.06	
v/s Ratio Perm			0.00			0.01			0.02			0.02
v/c Ratio	0.57	0.41	0.01	0.60	0.41	0.04	0.84	0.32	0.08	0.57	0.19	0.08
Uniform Delay, d1	26.9	20.6	17.7	36.2	29.9	27.8	41.1	27.9	26.5	36.3	22.3	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	0.0	4.2	0.4	0.0	128.3	0.5	0.1	3.1	0.2	0.1
Delay (s)	27.9	20.8	17.7	40.4	30.3	27.9	169.3	28.3	26.6	39.4	22.5	21.6
Level of Service	C	C	B	D	C	C	F	C	C	D	C	C
Approach Delay (s)		23.1			32.4			36.1			27.0	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	16.1
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

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Existing Plus Project Conditions AM Peak Hour
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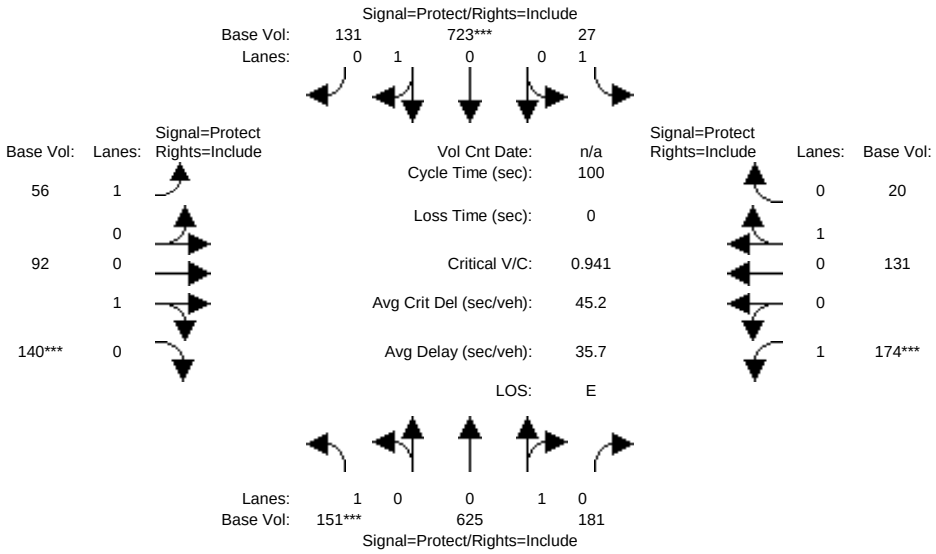
Circular 212 Planning (Base Volume Alternative)
E+P AM Peak Hour

Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	151	625	181	27	723	131	56	92	140	174	131	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	151	625	181	27	723	131	56	92	140	174	131	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	151	625	181	27	723	131	56	92	140	174	131	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	151	625	181	27	723	131	56	92	140	174	131	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	151	625	181	27	723	131	56	92	140	174	131	20
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.78	0.22	1.00	0.85	0.15	1.00	0.40	0.60	1.00	0.87	0.13
Final Sat.:	1500	1163	337	1500	1270	230	1500	595	905	1500	1301	199
Capacity Analysis Module:												
Vol/Sat:	0.10	0.54	0.54	0.02	0.57	0.57	0.04	0.15	0.15	0.12	0.10	0.10
Crit Volume:	151				854				232	174		
Crit Moves:	****				****				****	****		

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Circular 212 Planning (Base Volume Alternative)
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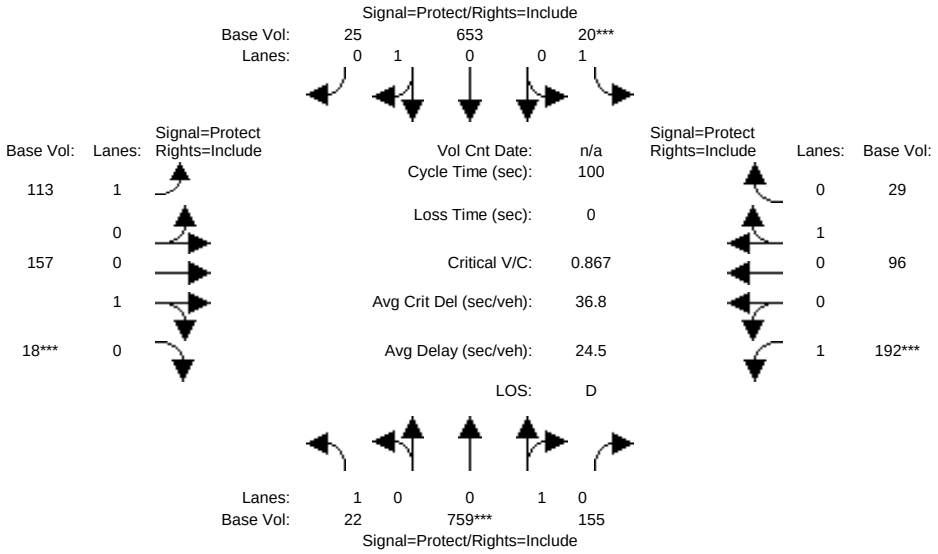
Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	22	759	155	20	653	25	113	157	18	192	96	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	759	155	20	653	25	113	157	18	192	96	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	759	155	20	653	25	113	157	18	192	96	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	759	155	20	653	25	113	157	18	192	96	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	759	155	20	653	25	113	157	18	192	96	29
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.83	0.17	1.00	0.96	0.04	1.00	0.90	0.10	1.00	0.77	0.23
Final Sat.:	1500	1246	254	1500	1445	55	1500	1346	154	1500	1152	348
Capacity Analysis Module:												
Vol/Sat:	0.01	0.61	0.61	0.01	0.45	0.45	0.08	0.12	0.12	0.13	0.08	0.08
Crit Volume:		914			20				175	192		
Crit Moves:		****			****				****	****		

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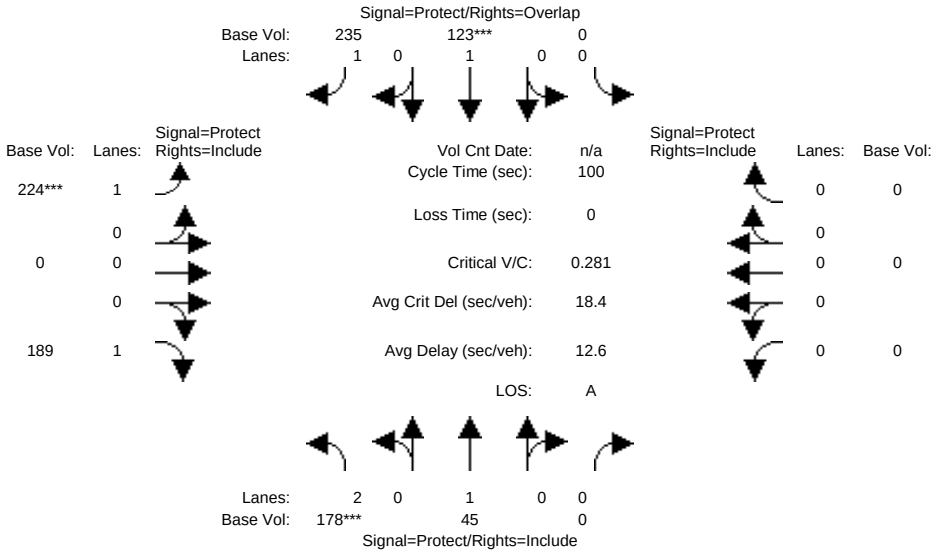
Circular 212 Planning (Base Volume Alternative)
E+P AM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	178	45	0	0	123	235	224	0	189	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	45	0	0	123	235	224	0	189	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	178	45	0	0	123	235	224	0	189	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	45	0	0	123	235	224	0	189	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	45	0	0	123	235	224	0	189	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.03	0.00	0.00	0.08	0.15	0.14	0.00	0.12	0.00	0.00	0.00
Crit Volume:	89				123		224				0	
Crit Moves:	****				****		****					

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Existing Plus Project Conditions AM Peak Hour
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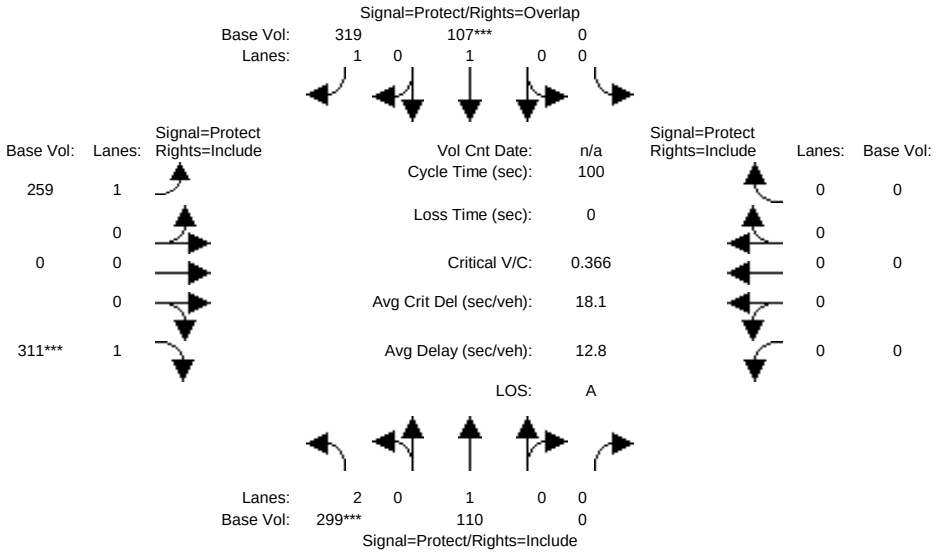
Circular 212 Planning (Base Volume Alternative)
E+P PM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	299	110	0	0	107	319	259	0	311	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	299	110	0	0	107	319	259	0	311	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	299	110	0	0	107	319	259	0	311	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	299	110	0	0	107	319	259	0	311	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	299	110	0	0	107	319	259	0	311	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.07	0.00	0.00	0.07	0.21	0.17	0.00	0.20	0.00	0.00	0.00
Crit Volume:	150				107				311	0		
Crit Moves:	****				****				****			

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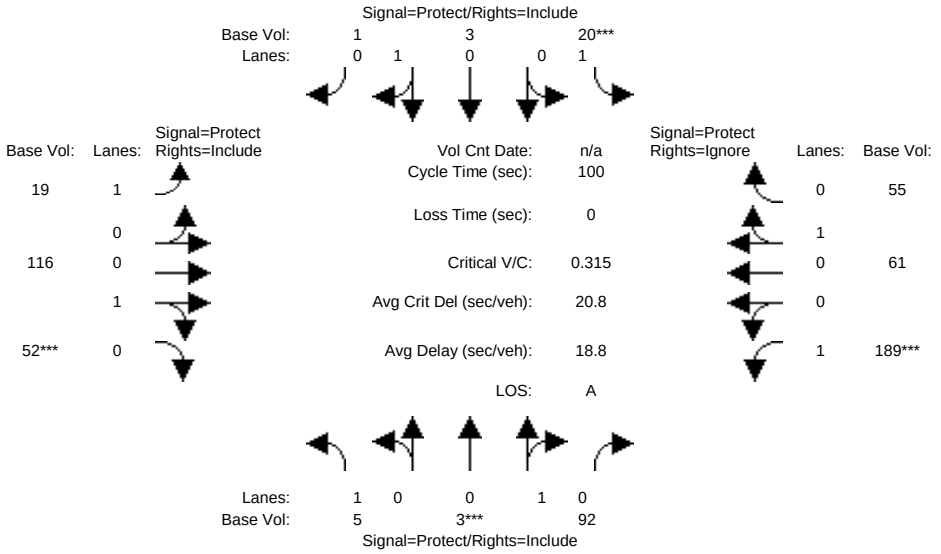
Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	5	3	92	20	3	1	19	116	52	189	61	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	3	92	20	3	1	19	116	52	189	61	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	5	3	92	20	3	1	19	116	52	189	61	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	3	92	20	3	1	19	116	52	189	61	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	5	3	92	20	3	1	19	116	52	189	61	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.03	0.97	1.00	0.75	0.25	1.00	0.69	0.31	1.00	1.00	0.00
Final Sat.:	1500	47	1453	1500	1125	375	1500	1036	464	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.01	0.00	0.00	0.01	0.11	0.11	0.13	0.04	0.00
Crit Volume:		95			20				168	189		
Crit Moves:		****			****				****	****		

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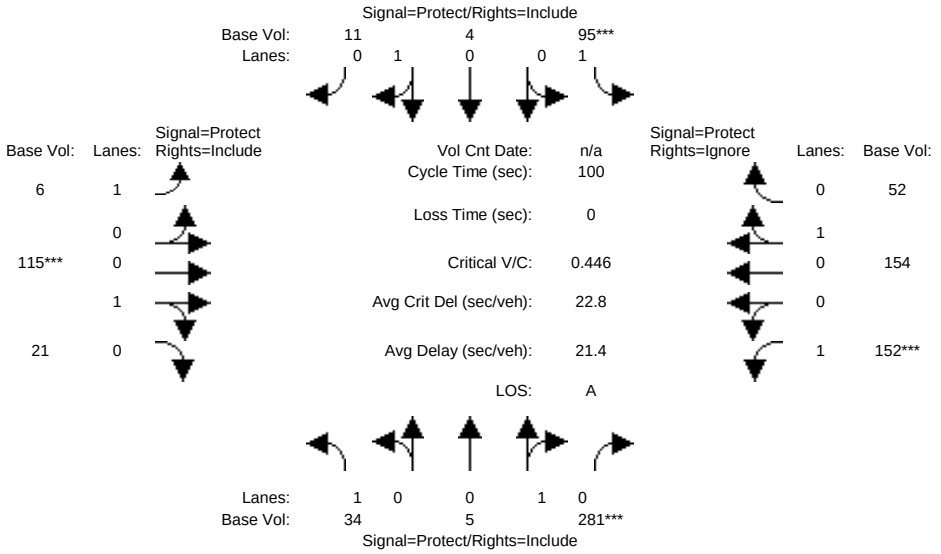
Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	34	5	281	95	4	11	6	115	21	152	154	52
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	5	281	95	4	11	6	115	21	152	154	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	34	5	281	95	4	11	6	115	21	152	154	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	5	281	95	4	11	6	115	21	152	154	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	34	5	281	95	4	11	6	115	21	152	154	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	1.00	0.27	0.73	1.00	0.85	0.15	1.00	1.00	0.00
Final Sat.:	1500	26	1474	1500	400	1100	1500	1268	232	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.19	0.19	0.06	0.01	0.01	0.00	0.09	0.09	0.10	0.10	0.00
Crit Volume:			286	95				136		152		
Crit Moves:			****	****				****		****		

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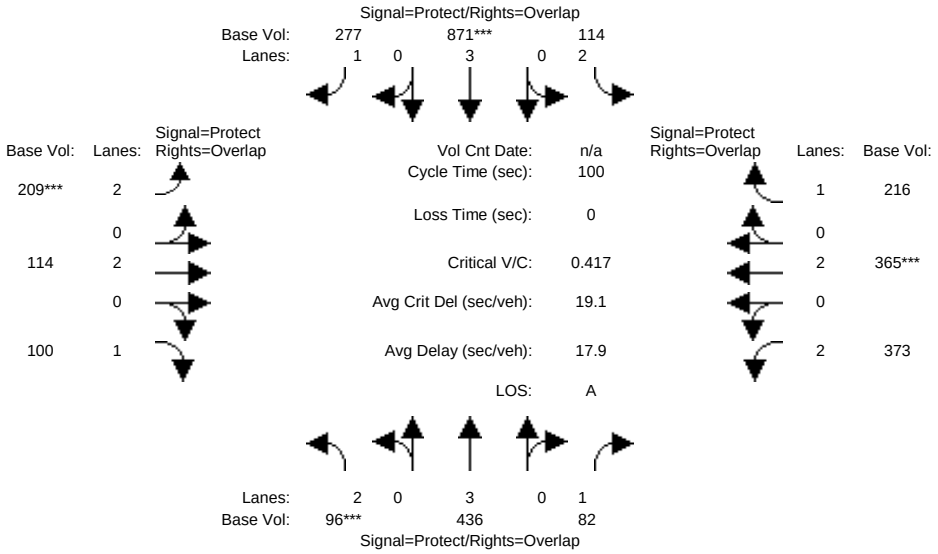
E+P AM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	96	436	82	114	871	277	209	114	100	373	365	216
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	96	436	82	114	871	277	209	114	100	373	365	216
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	96	436	82	114	871	277	209	114	100	373	365	216
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	96	436	82	114	871	277	209	114	100	373	365	216
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	96	436	82	114	871	277	209	114	100	373	365	216
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.03	0.10	0.05	0.04	0.19	0.18	0.07	0.04	0.07	0.12	0.12	0.14
Crit Volume:	48				290		104				183	
Crit Moves:	****				****		****				****	

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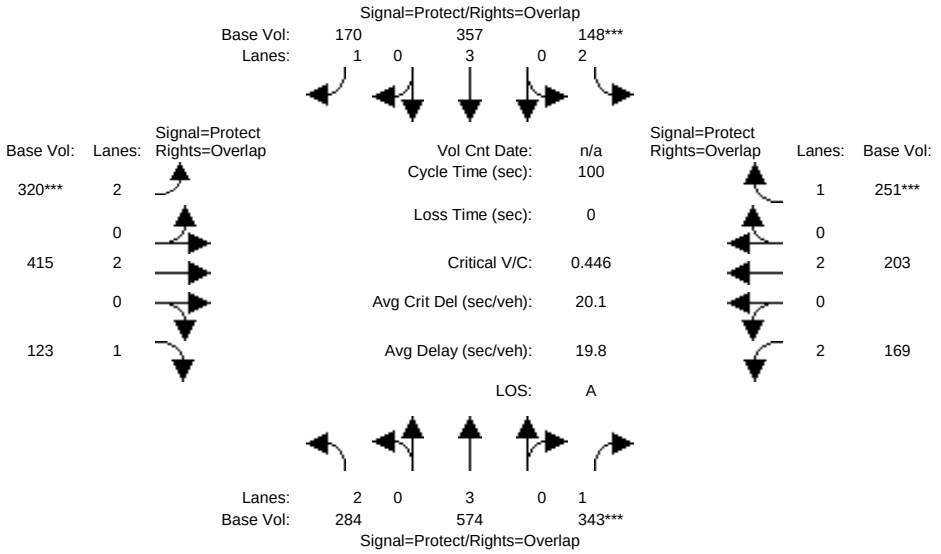
City of Roseville
Existing Plus Project Conditions AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P PM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	284	574	343	148	357	170	320	415	123	169	203	251
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	284	574	343	148	357	170	320	415	123	169	203	251
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	284	574	343	148	357	170	320	415	123	169	203	251
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	284	574	343	148	357	170	320	415	123	169	203	251
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	284	574	343	148	357	170	320	415	123	169	203	251
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.09	0.13	0.23	0.05	0.08	0.11	0.11	0.14	0.08	0.06	0.07	0.17
Crit Volume:			343			0			160			251
Crit Moves:			****	****			****					****

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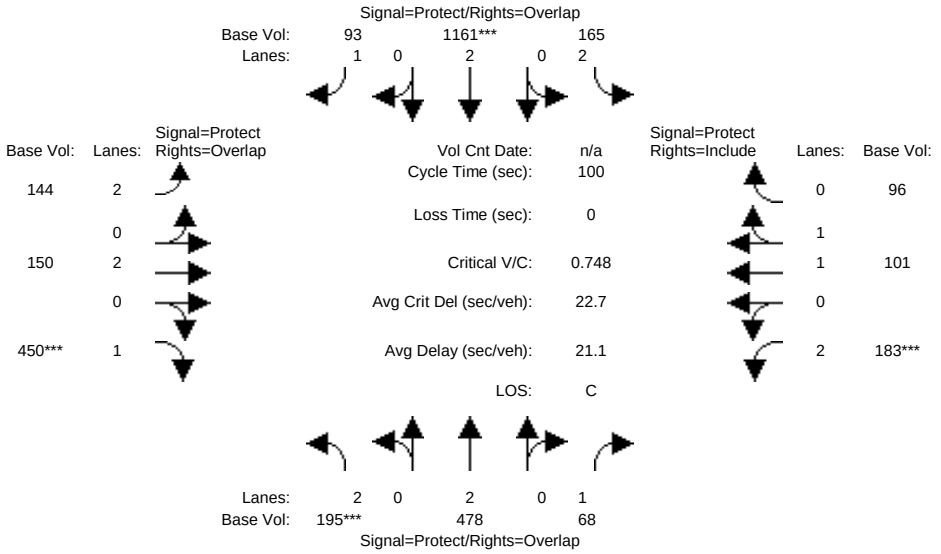
City of Roseville
Existing Plus Project Conditions AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P AM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	195	478	68	165	1161	93	144	150	450	183	101	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	195	478	68	165	1161	93	144	150	450	183	101	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	195	478	68	165	1161	93	144	150	450	183	101	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	478	68	165	1161	93	144	150	450	183	101	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	195	478	68	165	1161	93	144	150	450	183	101	96
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.03	0.97
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	1538	1462
Capacity Analysis Module:												
Vol/Sat:	0.07	0.16	0.05	0.06	0.39	0.06	0.05	0.05	0.30	0.06	0.07	0.07
Crit Volume:	0				581				450	92		
Crit Moves:	****				****				****	****		

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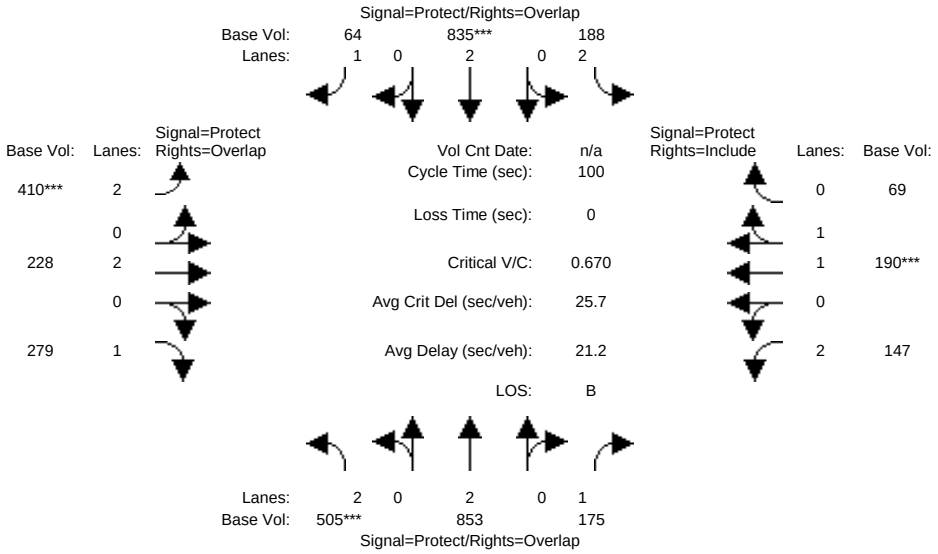
City of Roseville
Existing Plus Project Conditions AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P PM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	505	853	175	188	835	64	410	228	279	147	190	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	505	853	175	188	835	64	410	228	279	147	190	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	505	853	175	188	835	64	410	228	279	147	190	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	505	853	175	188	835	64	410	228	279	147	190	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	505	853	175	188	835	64	410	228	279	147	190	69
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.47	0.53
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	2201	799
Capacity Analysis Module:												
Vol/Sat:	0.17	0.28	0.12	0.06	0.28	0.04	0.14	0.08	0.19	0.05	0.09	0.09
Crit Volume:	253				418		205				130	
Crit Moves:	****				****		****				****	

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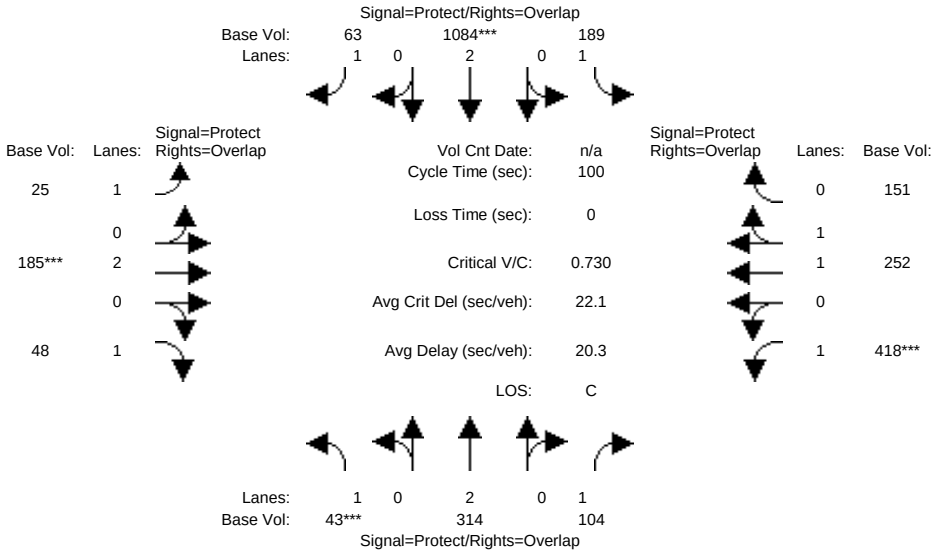
City of Roseville
Existing Plus Project Conditions AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P AM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	43	314	104	189	1084	63	25	185	48	418	252	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	314	104	189	1084	63	25	185	48	418	252	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	314	104	189	1084	63	25	185	48	418	252	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	314	104	189	1084	63	25	185	48	418	252	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	314	104	189	1084	63	25	185	48	418	252	151
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.25	0.75
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	1876	1124
Capacity Analysis Module:												
Vol/Sat:	0.03	0.10	0.07	0.13	0.36	0.04	0.02	0.06	0.03	0.28	0.13	0.13
Crit Volume:	43				542			93		418		
Crit Moves:	****				****			****		****		

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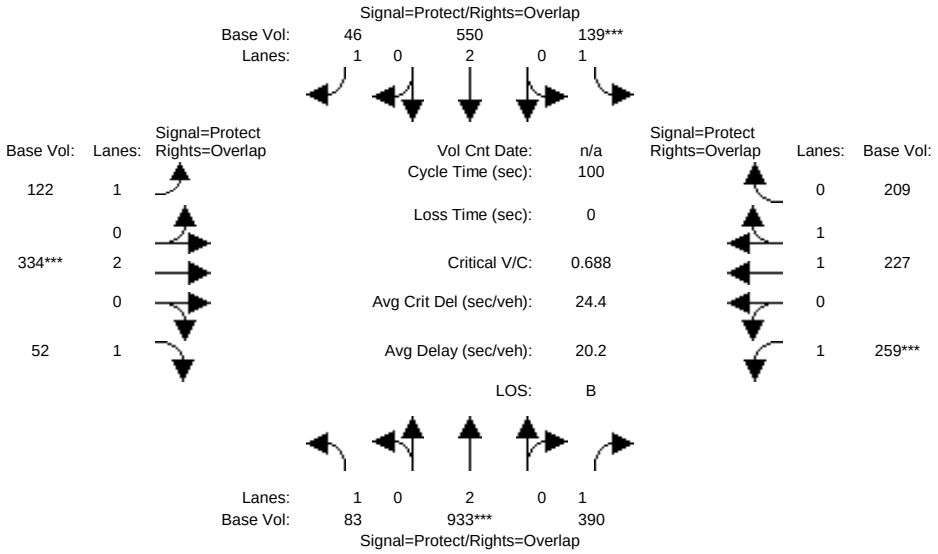
City of Roseville
Existing Plus Project Conditions AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P PM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	83	933	390	139	550	46	122	334	52	259	227	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	933	390	139	550	46	122	334	52	259	227	209
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	933	390	139	550	46	122	334	52	259	227	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	933	390	139	550	46	122	334	52	259	227	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	933	390	139	550	46	122	334	52	259	227	209
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.04	0.96
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	1562	1438
Capacity Analysis Module:												
Vol/Sat:	0.06	0.31	0.26	0.09	0.18	0.03	0.08	0.11	0.03	0.17	0.15	0.15
Crit Volume:		467		139				167		259		
Crit Moves:		****		****				****		****		

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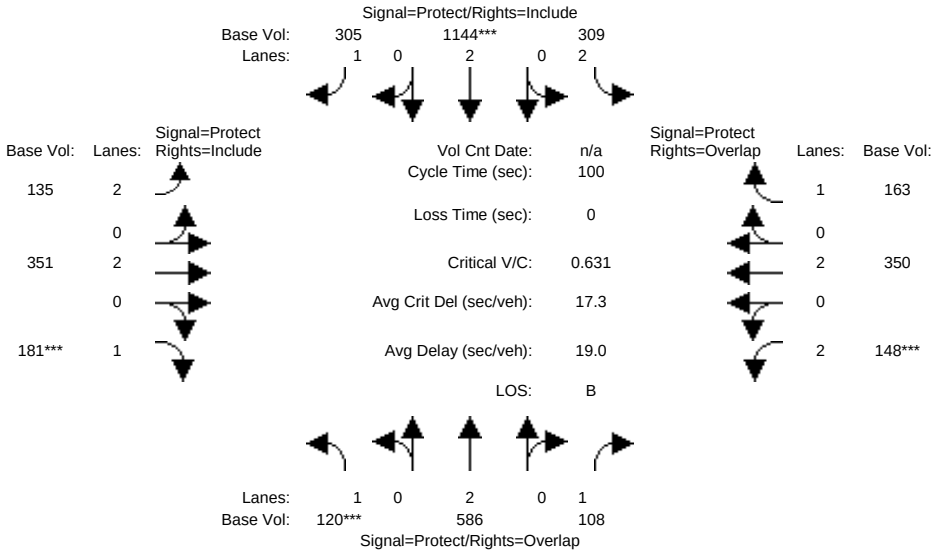
City of Roseville
Existing Plus Project Conditions AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P AM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	120	586	108	309	1144	305	135	351	181	148	350	163
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	120	586	108	309	1144	305	135	351	181	148	350	163
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	120	586	108	309	1144	305	135	351	181	148	350	163
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	586	108	309	1144	305	135	351	181	148	350	163
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	120	586	108	309	1144	305	135	351	181	148	350	163
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.08	0.20	0.07	0.10	0.38	0.20	0.05	0.12	0.12	0.05	0.12	0.11
Crit Volume:	120				572				181	74		
Crit Moves:	****				****				****	****		

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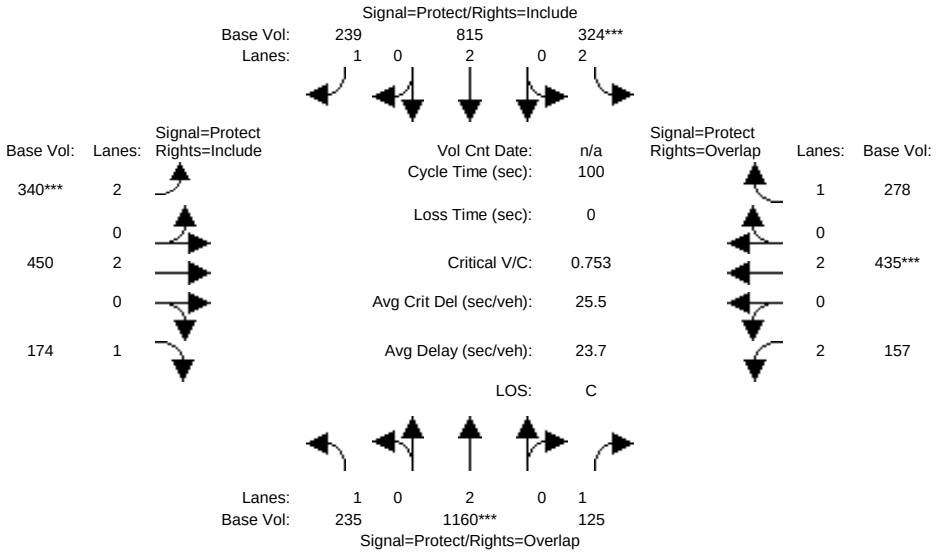
City of Roseville
Existing Plus Project Conditions AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P PM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	235	1160	125	324	815	239	340	450	174	157	435	278
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	1160	125	324	815	239	340	450	174	157	435	278
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	235	1160	125	324	815	239	340	450	174	157	435	278
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	1160	125	324	815	239	340	450	174	157	435	278
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	1160	125	324	815	239	340	450	174	157	435	278
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.16	0.39	0.08	0.11	0.27	0.16	0.11	0.15	0.12	0.05	0.15	0.19
Crit Volume:		580			162			170			217	
Crit Moves:		****			****			****			****	

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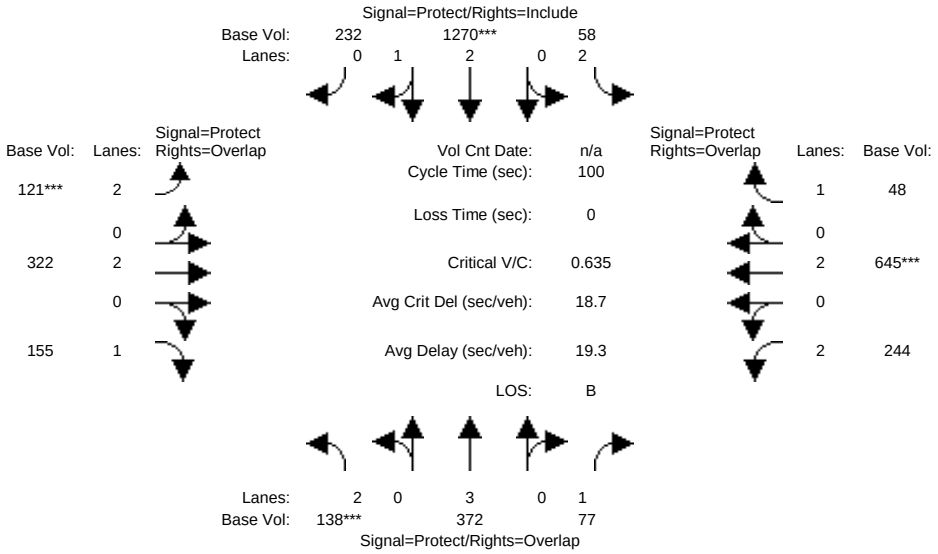
City of Roseville
Existing Plus Project Conditions AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P AM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	138	372	77	58	1270	232	121	322	155	244	645	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	372	77	58	1270	232	121	322	155	244	645	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	138	372	77	58	1270	232	121	322	155	244	645	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	372	77	58	1270	232	121	322	155	244	645	48
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	138	372	77	58	1270	232	121	322	155	244	645	48
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.54	0.46	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3805	695	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.05	0.08	0.05	0.02	0.33	0.33	0.04	0.11	0.10	0.08	0.22	0.03
Crit Volume:	69				501		61				323	
Crit Moves:	****				****		****				****	

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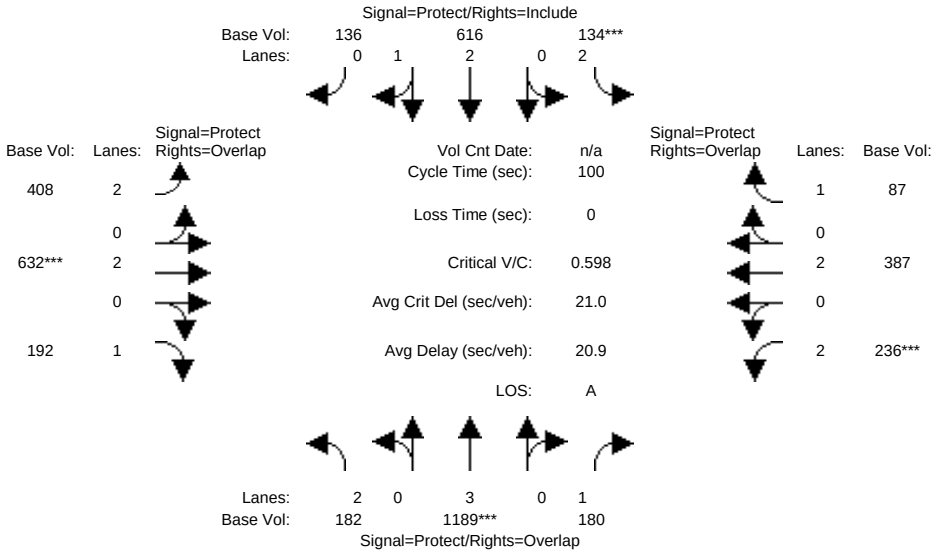
E+P PM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	182	1189	180	134	616	136	408	632	192	236	387	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	182	1189	180	134	616	136	408	632	192	236	387	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	182	1189	180	134	616	136	408	632	192	236	387	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	182	1189	180	134	616	136	408	632	192	236	387	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	182	1189	180	134	616	136	408	632	192	236	387	87
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.46	0.54	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3686	814	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.26	0.12	0.04	0.17	0.17	0.14	0.21	0.13	0.08	0.13	0.06
Crit Volume:		396			67			316			118	
Crit Moves:		****			****			****			****	

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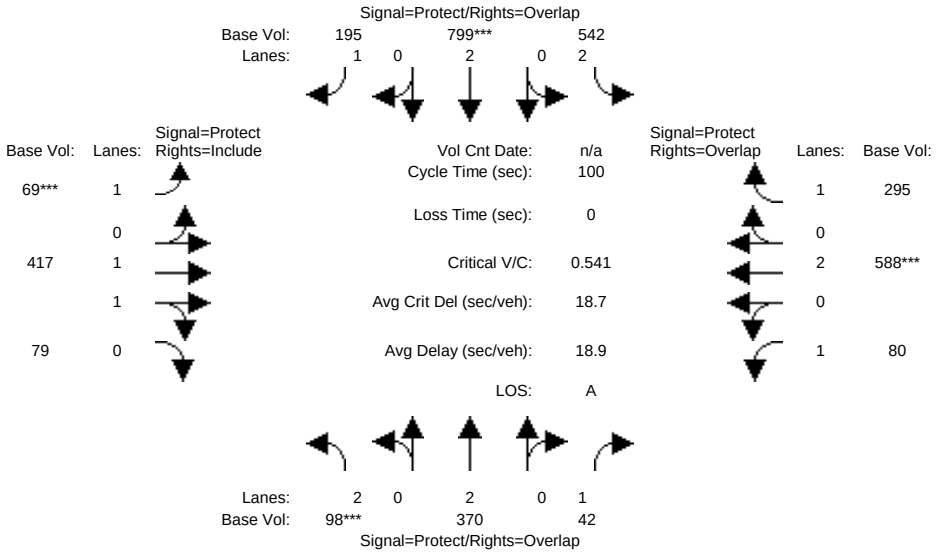
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P AM Peak Hour

Intersection #320: Walegra and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	98	370	42	542	799	195	69	417	79	80	588	295
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	370	42	542	799	195	69	417	79	80	588	295
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	370	42	542	799	195	69	417	79	80	588	295
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	370	42	542	799	195	69	417	79	80	588	295
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	370	42	542	799	195	69	417	79	80	588	295
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.68	0.32	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	2522	478	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.03	0.18	0.27	0.13	0.05	0.17	0.17	0.05	0.20	0.20
Crit Volume:	49				399		69				294	
Crit Moves:	****				****		****				****	

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Existing Plus Project Conditions AM Peak Hour
Amoruso Ranch Specific Plan

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Circular 212 Planning (Base Volume Alternative)
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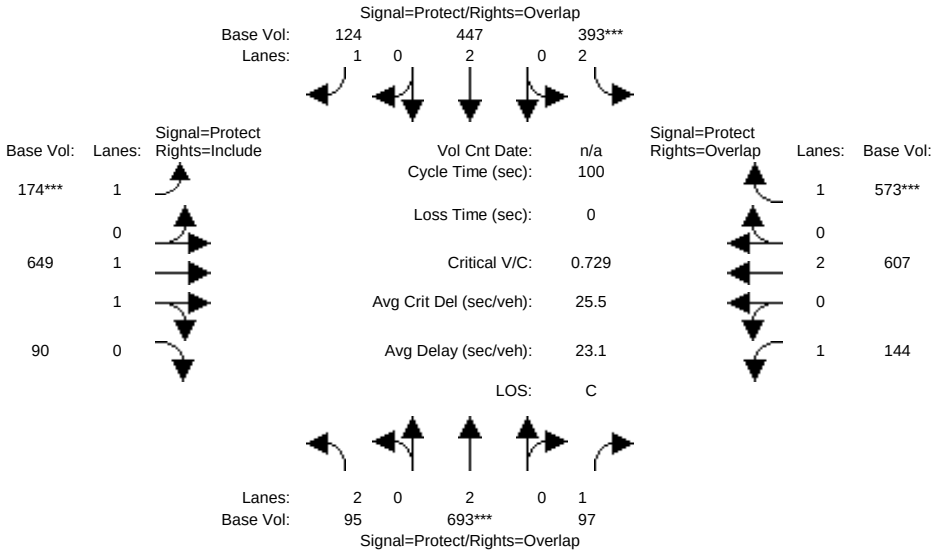
Intersection #320: Walegra and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	95	693	97	393	447	124	174	649	90	144	607	573
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	693	97	393	447	124	174	649	90	144	607	573
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	693	97	393	447	124	174	649	90	144	607	573
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	693	97	393	447	124	174	649	90	144	607	573
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	95	693	97	393	447	124	174	649	90	144	607	573
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.76	0.24	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	2635	365	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.06	0.13	0.15	0.08	0.12	0.25	0.25	0.10	0.20	0.38
Crit Volume:		347			0			174				573
Crit Moves:		****			****			****				****

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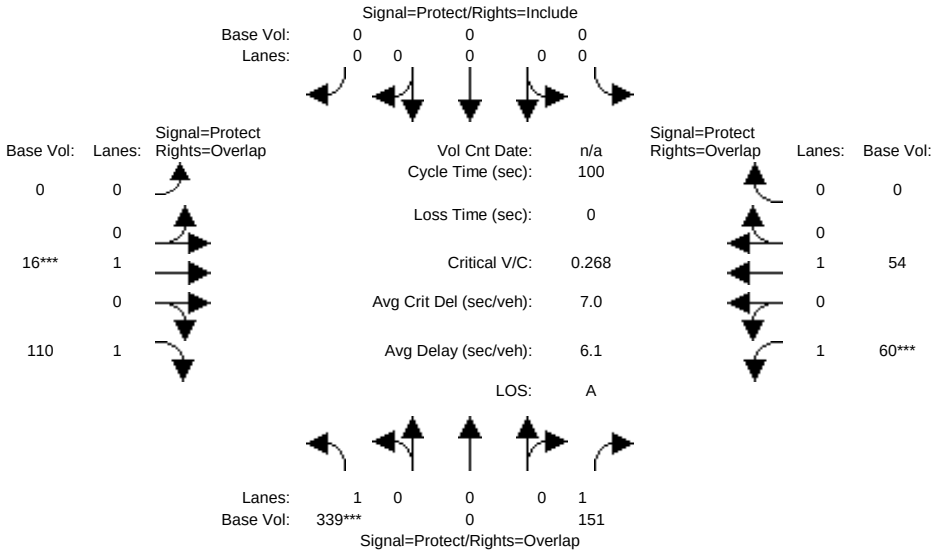
E+P AM Peak Hour

Intersection #321: Westbrook Blvd / Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	339	0	151	0	0	0	0	16	110	60	54	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	339	0	151	0	0	0	0	16	110	60	54	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	339	0	151	0	0	0	0	16	110	60	54	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	339	0	151	0	0	0	0	16	110	60	54	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	339	0	151	0	0	0	0	16	110	60	54	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1550	0	1550	0	0	0	0	1550	1550	1550	1550	0
Capacity Analysis Module:												
Vol/Sat:	0.22	0.00	0.10	0.00	0.00	0.00	0.00	0.01	0.07	0.04	0.03	0.00
Crit Volume:	339				0			16			60	
Crit Moves:	****							****			****	

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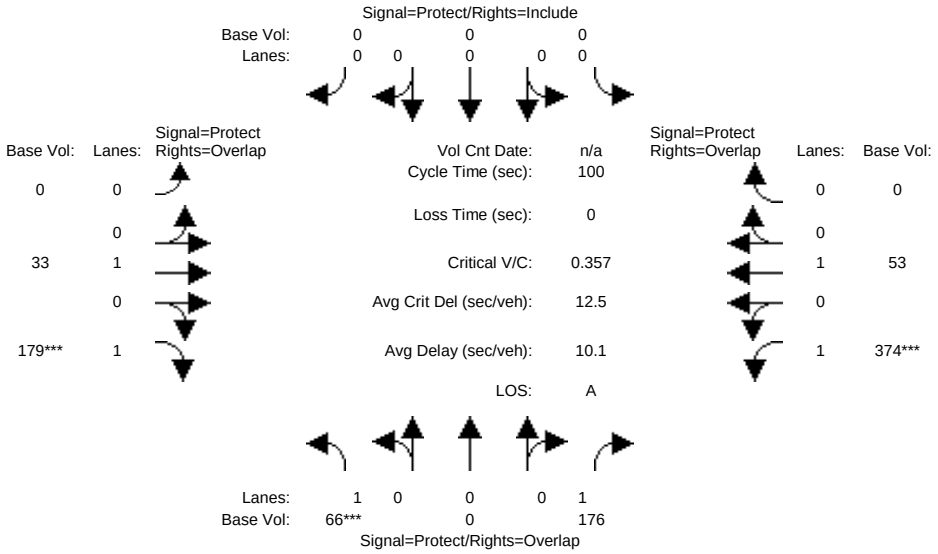

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	66	0	176	0	0	0	0	33	179	374	53	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	0	176	0	0	0	0	33	179	374	53	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	0	176	0	0	0	0	33	179	374	53	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	0	176	0	0	0	0	33	179	374	53	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	66	0	176	0	0	0	0	33	179	374	53	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1550	0	1550	0	0	0	0	1550	1550	1550	1550	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.11	0.00	0.00	0.00	0.00	0.02	0.12	0.24	0.03	0.00
Crit Volume:	0				0				179	374		
Crit Moves:	****								****	****		

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FREEWAY FACILITIES

Location	1	2	3	4	5	6	

Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Define Freeway Segment							
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	V
Length (ft)	1,780	1,500	2,960	1,500	1,500	1,250	
Accel Length				270			
Decel Length		120			1,500		
Mainline Volume	4,050	4,050	3,430	3,430	4,000	3,350	
On Ramp Volume				570			
Off Ramp Volume		620			650		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (GP)							
GP Volume (vph)	4,050	4,050	3,430	4,000	4,000	3,350	
PHF	0.85	0.85	0.85	0.85	0.85	0.85	
GP Lanes	2	2	2	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	4,860	4,860	4,116	4,800	4,800	4,020	
GP Flow (pcphpl)	2,430	2,430	2,058	2,400	2,400	2,010	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	1.03	1.03	0.88	1.02	1.02	0.86	
Speed (mph)	-	-	58.9	-	-	59.7	
Density (pcphpl)	-	-	35.0	-	-	33.7	
LOS	F	F	D	F	F	D	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		4,860		4,194	4,800		
GP_{IN} Cap (pcph)		4,700		4,700	4,700		
GP_{IN} v/c ratio		1.03		0.89	1.02		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		4,221		4,800	4,106		
GP_{OUT} Cap (pcph)		4,700		4,700	4,700		
GP_{OUT} v/c ratio		0.90		1.02	0.87		

Location	1	2	3	4	5	6	

Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)				570			
PHF				0.95			
Total Lanes				1			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				2.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.990			
f_P				1.00			
On Flow (pcph)				606			
On Flow (pcphpl)				606			
Calculate On Ramp Roadway Operations							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.29			

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

Existing Plus Project Conditions
Timee Period: 2014 AM Peak Hour

Location	1	2	3	4	5	6	

Key
<> Express Lane (HOV)
No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Calculate Off Ramp Flow Rate							
Off Volume (vph)		620			650		
PHF		0.98			0.95		
Total Lanes		1			2		
Terrain		Level			Level		
Grade %		0.0%			0.0%		
Grade Length (mi)		0.00			0.00		
Truck & Bus %		2.0%			3.0%		
RV %		0.0%			0.0%		
E_T		1.5			1.5		
E_R		1.2			1.2		
f_{HV}		0.990			0.985		
f_P		1.00			1.00		
Off Flow (pcph)		639			694		
Off Flow (pcphpl)		639			347		
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right			Right		
Off Ramp Speed		45			45		
Off Ramp Cap (pcph)		2,100			4,200		
Off Ramp v/c ratio		0.30			0.17		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)				4,194			
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)				0.585			
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}				1.000			
v_{12} (pcph)				4,194			
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)				4,194			
v_{R12a} (pcph)				4,800			
Merge Speed Index				-			
Merge Area Speed				-			
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Merge v/c ratio				1.04			
Merge Density				-			
Merge LOS				F			

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

Existing Plus Project Conditions
Timee Period: 2014 AM Peak Hour

Location	1	2	3	4	5	6	

Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)		4,860			4,800		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)		0.609			0.608		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		1.000			1.000		
v_{12} (pcph)		4,860			4,800		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		4,860			4,800		
Diverge Speed Index		-			-		
Diverge Area Speed		-			-		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio		1.10			1.09		
Diverge Density		-			-		
Diverge LOS		F			F		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to Mainline Flow Rate for Weave Segments							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	1	2	3	4	5	6	

Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Calculate Mainline to Off Ramp Flow Rate for Weave Segments							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Location	1	2	3	4	5	6	

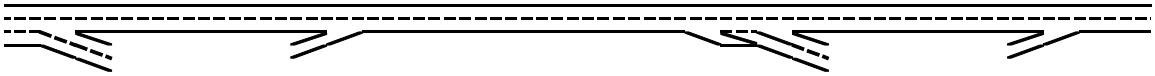
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant G Oaks
Calculate Weave Segment Operations							
Weave Type							Or
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	1.03	1.10	0.88	1.04	1.09	0.86	
Segment Density	-	-	35.0	-	-	33.7	
Segment LOS	F	F	D	F	F	D	
Over Capacity	Segment GP Lanes	Segment GP Lanes In GP Lanes Diverge		Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes In GP Lanes Diverge		

Location	7	8	9	10	11	12	13



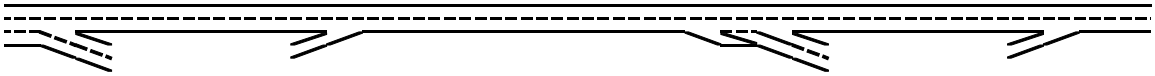
Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Define Freeway Segment							
Type	Weave	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	3,370	1,920	1,500	3,300	1,500	1,800	1,500
Accel Length			375				620
Decel Length					1,500		
Mainline Volume	3,350	2,270	2,270	2,510	2,510	1,210	1,210
On Ramp Volume	280		240				50
Off Ramp Volume	1,360				1,300		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose L							
GP Volume (vph)	3,630	2,270	2,510	2,510	2,510	1,210	1,260
PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85
GP Lanes	3	2	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,356	2,724	3,012	3,012	3,012	1,452	1,512
GP Flow (pcphpl)	1,452	1,362	1,506	1,506	1,506	726	756
Calculate Speed in General Purpose Lane							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in General Purpose							
v/c ratio	0.62	0.58	0.64	0.64	0.64	0.31	0.32
Speed (mph)	65.0	65.0	64.8	64.8	64.8	65.0	65.0
Density (pcphpl)	22.4	21.0	23.2	23.2	23.2	11.2	11.6
LOS	C	C	C	C	C	B	B
Calculate Operations for Entering GP Lan							
GP_{IN} Vol (pcph)	4,057		2,753		3,012		1,440
GP_{IN} Cap (pcph)	4,700		4,700		4,700		4,700
GP_{IN} v/c ratio	0.86		0.59		0.64		0.31
Calculate Operations for Exiting GP Lane							
GP_{OUT} Vol (pcph)	2,903		3,012		1,460		1,512
GP_{OUT} Cap (pcph)	4,700		4,700		4,700		4,700
GP_{OUT} v/c ratio	0.62		0.64		0.31		0.32

Location	7	8	9	10	11	12	13



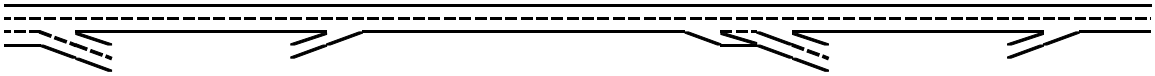
Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Calculate Flow Rate in Express Lanes (EL							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	280		240				50
PHF	0.95		0.94				0.7
Total Lanes	1		1				1
Terrain	Level		Level				Level
Grade %	0.0%		0.0%				0.0%
Grade Length (mi)	0.00		0.00				0.00
Truck & Bus %	3.0%		3.0%				3.0%
RV %	0.0%		0.0%				0.0%
E_T	1.5		1.5				1.5
E_R	1.2		1.2				1.2
f_{HV}	0.985		0.985				0.985
f_P	1.00		1.00				1.00
On Flow (pcph)	299		259				73
On Flow (pcphpl)	299		259				73
Calculate On Ramp Roadway Operations							
On Ramp Type			Right				Right
On Ramp Speed (mph)			45				25
On Ramp Cap (pcph)			2,100				1,900
On Ramp v/c ratio			0.12				0.04

Location	7	8	9	10	11	12	13



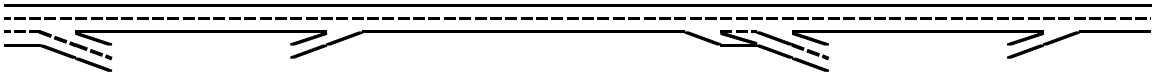
Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Calculate Off Ramp Flow Rate							
Off Volume (vph)	1,360				1,300		
PHF	0.95				0.85		
Total Lanes	2				2		
Terrain	Level				Level		
Grade %	0.0%				0.0%		
Grade Length (mi)	0.00				0.00		
Truck & Bus %	3.0%				3.0%		
RV %	0.0%				0.0%		
E_T	1.5				1.5		
E_R	1.2				1.2		
f_{HV}	0.985				0.985		
f_P	1.00				1.00		
Off Flow (pcph)	1,453				1,552		
Off Flow (pcphpl)	727				776		
Calculate Off Ramp Roadway Operations							
Off Ramp Type					Right		
Off Ramp Speed					45		
Off Ramp Cap (pcph)					4,200		
Off Ramp v/c ratio					0.37		
Determine Adjacent Ramp for Three-Lane							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operation							
Effective v_P (pcph)			2,753				1,440
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)			0.588				0.595
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}			1.000				1.000
v_{12} (pcph)			2,753				1,440
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)			2,753				1,440
v_{R12a} (pcph)			3,012				1,512
Merge Speed Index			0.37				0.31
Merge Area Speed			56.6				57.9
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed			56.6				57.9
Merge v/c ratio			0.65				0.33
Merge Density			26.5				13.3
Merge LOS			C				B

Location	7	8	9	10	11	12	13



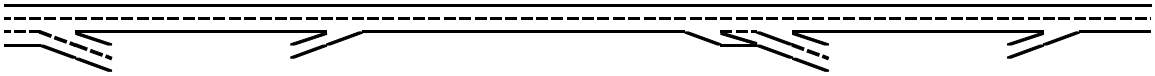
Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Calculate Diverge Influence Area Operatic							
Effective v_P (pcph)					3,012		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)					0.613		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}					1.000		
v_{12} (pcph)					3,012		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)					3,012		
Diverge Speed Index					0.44		
Diverge Area Speed					54.9		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed					54.9		
Diverge v/c ratio					0.68		
Diverge Density					16.7		
Diverge LOS					B		
Calculate On Ramp to Off Ramp Flow Rat							
On to Off Volume (vph)	28						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to Off Flow (pcph)	30						
Calculate On Ramp to Mainline Flow Rate							
On to ML Volume (vph)	252						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to ML Flow (pcph)	269						

Location	7	8	9	10	11	12	13



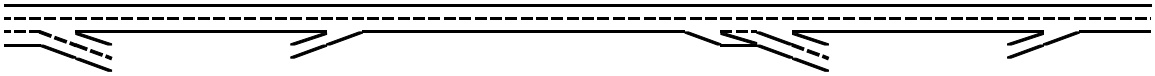
Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Calculate Mainline to Off Ramp Flow Rate							
ML to Off Volume (vph)	1,332						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	6.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.971						
f_P	1.00						
ML to Off Flow (pcph)	1,444						
Calculate General Purpose Lanes to Gene							
GP to GP Volume (vph)	2,018						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	6.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.971						
f_P	1.00						
GP to GP Flow (pcph)	2,188						

Location	7	8	9	10	11	12	13



Key

<> Express Lane (HOV)

No Trucks

Name	rove On to Blue Off Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ra
Calculate Weave Segment Operations							
Weave Type	ne-sided						
Weave Length	2,370						
Segment Lanes	3						
Weave Lanes	3						
Weave Flow (pcph)	1,713						
Non-Weave Flow	2,218						
Segment Flow	3,931						
Max Weave Length	5,520						
Length Check	OK						
Ideal Weave Capacity	2,109						
f_{HV}	0.972						
f_P	0.999						
Capacity Condition 1	6,143						
Capacity Condition 2	7,797						
Weave v/c ratio	0.62						
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.62	0.58	0.65	0.64	0.68	0.31	0.33
Segment Density		21.0	26.5	23.2	16.7	11.2	13.3
Segment LOS		C	C	C	B	B	B
Over Capacity							

Location		14	15	16	17	18	19	

Key

<> Express Lane (HOV)

No Trucks

Name	mp	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Define Freeway Segment								
Type		Merge	Basic	Diverge	Basic	Weave	Basic	
Length (ft)		1,500	5,960	1,500	2,590	2,680	900	
Accel Length		1,180						
Decel Length				175				
Mainline Volume		1,260	1,520	1,520	1,160	1,160	1,010	
On Ramp Volume		260				510		
Off Ramp Volume				360		660		
Express Lane Volume								
EL On Ramp Volume								
EL Off Ramp Volume								
Calculate Flow Rate in General Purpose L								
GP Volume (vph)		1,520	1,520	1,520	1,160	1,670	1,010	
PHF		0.85	0.85	0.85	0.85	0.85	0.85	
GP Lanes		2	2	2	2	3	3	
Terrain		Level	Level	Level	Level	Level	Level	
Grade %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)		0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	
RV %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T		1.5	1.5	1.5	1.5	1.5	1.5	
E_R		1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}		0.980	0.980	0.980	0.980	0.980	0.980	
f_P		1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)		1,824	1,824	1,824	1,392	2,004	1,212	
GP Flow (pcphpl)		912	912	912	696	668	404	
Calculate Speed in General Purpose Lane								
Lane Width (ft)								
Shoulder Width								
TRD								
f_{LW}								
f_{LC}								
Calculated FFS								
Measured FFS								
FFS Curve		65	65	65	65	65	65	
Calculate Operations in General Purpose								
v/c ratio		0.39	0.39	0.39	0.30	0.28	0.17	
Speed (mph)		65.0	65.0	65.0	65.0	65.0	65.0	
Density (pcphpl)		14.0	14.0	14.0	10.7	10.3	6.2	
LOS		B	B	B	A	A	A	
Calculate Operations for Entering GP Lan								
GP_{IN} Vol (pcph)		1,517		1,824		1,448		
GP_{IN} Cap (pcph)		4,700		4,700		4,700		
GP_{IN} v/c ratio		0.32		0.39		0.31		
Calculate Operations for Exiting GP Lane								
GP_{OUT} Vol (pcph)		1,824		1,437		1,192		
GP_{OUT} Cap (pcph)		4,700		4,700		4,700		
GP_{OUT} v/c ratio		0.39		0.31		0.25		

Location		14	15	16	17	18	19	

Key

<> Express Lane (HOV)

No Trucks

Name	mp	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Calculate Flow Rate in Express Lanes (EL								
Calculate Speed in Express Lanes								
Calculate Operations in Express Lanes								
Calculate On Ramp Flow Rate								
On Volume (vph)		260				510		
PHF		0.86				0.95		
Total Lanes		1				1		
Terrain		Level				Level		
Grade %		0.0%				0.0%		
Grade Length (mi)		0.00				0.00		
Truck & Bus %		3.0%				7.0%		
RV %		0.0%				0.0%		
E_T		1.5				1.5		
E_R		1.2				1.2		
f_{HV}		0.985				0.966		
f_P		1.00				1.00		
On Flow (pcph)		307				556		
On Flow (pcphpl)		307				556		
Calculate On Ramp Roadway Operations								
On Ramp Type		Right				Right		
On Ramp Speed (mph)		45				45		
On Ramp Cap (pcph)		2,100				2,100		
On Ramp v/c ratio		0.15				0.26		

Location		14	15	16	17	18	19	

Key

<> Express Lane (HOV)

No Trucks

Name	mp	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Calculate Off Ramp Flow Rate								
Off Volume (vph)				360		660		
PHF				0.94		0.825		
Total Lanes				1		1		
Terrain				Level		Level		
Grade %				0.0%		0.0%		
Grade Length (mi)				0.00		0.00		
Truck & Bus %				2.0%		3.0%		
RV %				0.0%		0.0%		
E_T				1.5		1.5		
E_R				1.2		1.2		
f_{HV}				0.990		0.985		
f_P				1.00		1.00		
Off Flow (pcph)				387		812		
Off Flow (pcphpl)				387		812		
Calculate Off Ramp Roadway Operations								
Off Ramp Type				Right		Right		
Off Ramp Speed				45		45		
Off Ramp Cap (pcph)				2,100		2,100		
Off Ramp v/c ratio				0.18		0.39		
Determine Adjacent Ramp for Three-Lane								
Up Type								
Up Distance								
Up Flow (pcph)								
Down Type								
Down Distance								
Down Flow (pcph)								
Calculate Merge Influence Area Operation								
Effective v_P (pcph)		1,517						
Up Ramp L_{EQ}								
Down Ramp L_{EQ}								
P_{FM} (Eqn 13-3)		0.611						
P_{FM} (Eqn 13-4)								
P_{FM} (Eqn 13-5)								
P_{FM}		1.000						
v_{12} (pcph)		1,517						
v_3 (pcph)								
v_{34} (pcph)								
v_{12a} (pcph)		1,517						
v_{R12a} (pcph)		1,824						
Merge Speed Index		0.24						
Merge Area Speed		59.5						
Outer Lanes Volume								
Outer Lanes Speed								
Segment Speed		59.5						
Merge v/c ratio		0.40						
Merge Density		12.2						
Merge LOS		B						

Location		14	15	16	17	18	19	

Key

<> Express Lane (HOV)

No Trucks

Name	mp	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Calculate Diverge Influence Area Operatic								
Effective v_P (pcph)				1,824				
Up Ramp L_{EQ}								
Down Ramp L_{EQ}								
P_{FD} (Eqn 13-9)				0.697				
P_{FD} (Eqn 13-10)								
P_{FD} (Eqn 13-11)								
P_{FD}				1.000				
v_{12} (pcph)				1,824				
v_3 (pcph)								
v_{34} (pcph)								
v_{12a} (pcph)				1,824				
Diverge Speed Index				0.33				
Diverge Area Speed				57.3				
Outer Lanes Volume								
Outer Lanes Speed								
Segment Speed				57.3				
Diverge v/c ratio				0.41				
Diverge Density				18.4				
Diverge LOS				B				
Calculate On Ramp to Off Ramp Flow Rat								
On to Off Volume (vph)						51		
PHF						0.8		
Terrain						Level		
Grade %						0.0%		
Grade Length (mi)						0.00		
Truck & Bus %						7.0%		
RV %						0.0%		
E_T						1.5		
E_R						1.2		
f_{HV}						0.966		
f_P						1.00		
On to Off Flow (pcph)						66		
Calculate On Ramp to Mainline Flow Rate								
On to ML Volume (vph)						459		
PHF						0.8		
Terrain						Level		
Grade %						0.0%		
Grade Length (mi)						0.00		
Truck & Bus %						3.0%		
RV %						0.0%		
E_T						1.5		
E_R						1.2		
f_{HV}						0.985		
f_P						1.00		
On to ML Flow (pcph)						582		

Location		14	15	16	17	18	19	

Key

<> Express Lane (HOV)

No Trucks

Name	mp	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Calculate Mainline to Off Ramp Flow Rate								
ML to Off Volume (vph)						609		
PHF						0.83		
Terrain						Level		
Grade %						0.0%		
Grade Length (mi)						0.00		
Truck & Bus %						3.0%		
RV %						0.0%		
E_T						1.5		
E_R						1.2		
f_{HV}						0.985		
f_P						1.00		
ML to Off Flow (pcph)						745		
Calculate General Purpose Lanes to Gene								
GP to GP Volume (vph)						551		
PHF						0.825		
Terrain						Level		
Grade %						0.0%		
Grade Length (mi)						0.00		
Truck & Bus %						3.0%		
RV %						0.0%		
E_T						1.5		
E_R						1.2		
f_{HV}						0.985		
f_P						1.00		
GP to GP Flow (pcph)						678		

Location		14	15	16	17	18	19	

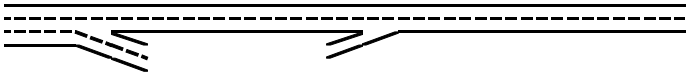
Key

<> Express Lane (HOV)

No Trucks

Name	mp	Sunset Slip On-Ramp	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferra
Calculate Weave Segment Operations								
Weave Type						One-sided		
Weave Length						1,680		
Segment Lanes						3		
Weave Lanes						3		
Weave Flow (pcph)						1,327		
Non-Weave Flow						744		
Segment Flow						2,071		
Max Weave Length						7,952		
Length Check						OK		
Ideal Weave Capacity						1,870		
f_{HV}						0.985		
f_P						0.996		
Capacity Condition 1						5,501		
Capacity Condition 2						5,355		
Weave v/c ratio						0.38		
Interchange Density						0.666666667		
Lane Changes On to ML								
Lane Changes ML to Off								
Lane Changes On to Off								
Min Lane Change Rate						0		
Weave LC Rate						564		
Non-Weave LC Rate 1						486		
Non-Weave LC Rate 2						1,855		
Non-Weave LC Rate 3						-2,076		
Segment LC Rate						1,050		
Weave Intensity Factor						0.156		
Weave Speed						58.3		
Non-Weave Speed						61.7		
Segment Speed						59.4		
Weave Density						11.6		
Weave LOS						B		
Summarize Segment Operations								
Segment v/c ratio		0.40	0.39	0.41	0.30	0.38	0.17	
Segment Density		12.2	14.0	18.4	10.7	11.6	6.2	
Segment LOS		B	B	B	A	B	A	
Over Capacity								

Location	20	21	22	23



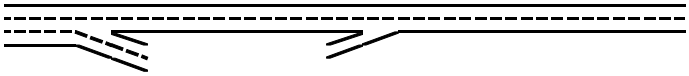
Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segment				
Type	Basic	Basic	Merge	Basic
Length (ft)	1,500	2,870	1,500	8,600
Accel Length			600	
Decel Length				
Mainline Volume	1,010	580	580	720
On Ramp Volume			140	
Off Ramp Volume	430			
Express Lane Volume				
EL On Ramp Volume				
EL Off Ramp Volume				
Calculate Flow Rate in General Purpose L				
GP Volume (vph)	1,010	580	720	720
PHF	0.85	0.85	0.85	0.85
GP Lanes	3	2	2	2
Terrain	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00
GP Flow (pcph)	1,212	696	864	864
GP Flow (pcphpl)	404	348	432	432
Calculate Speed in General Purpose Lane				
Lane Width (ft)				
Shoulder Width				
TRD				
f_{LW}				
f_{LC}				
Calculated FFS				
Measured FFS				
FFS Curve	65	65	65	65
Calculate Operations in General Purpose				
v/c ratio	0.17	0.15	0.18	0.18
Speed (mph)	65.0	65.0	65.0	65.0
Density (pcphpl)	6.2	5.4	6.6	6.6
LOS	A	A	A	A
Calculate Operations for Entering GP Lan				
GP_{IN} Vol (pcph)			705	
GP_{IN} Cap (pcph)			4,700	
GP_{IN} v/c ratio			0.15	
Calculate Operations for Exiting GP Lanes				
GP_{OUT} Vol (pcph)	714		864	
GP_{OUT} Cap (pcph)	4,700		4,700	
GP_{OUT} v/c ratio	0.15		0.18	

Location	20	21	22	23



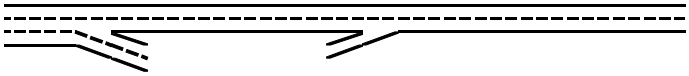
Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in Express Lanes (EL				
Calculate Speed in Express Lanes				
Calculate Operations in Express Lanes				
Calculate On Ramp Flow Rate				
On Volume (vph)			140	
PHF			0.9	
Total Lanes			1	
Terrain			Level	
Grade %			0.0%	
Grade Length (mi)			0.00	
Truck & Bus %			4.0%	
RV %			0.0%	
E_T			1.5	
E_R			1.2	
f_{HV}			0.980	
f_P			1.00	
On Flow (pcph)			159	
On Flow (pcphpl)			159	
Calculate On Ramp Roadway Operations				
On Ramp Type			Right	
On Ramp Speed (mph)			45	
On Ramp Cap (pcph)			2,100	
On Ramp v/c ratio			0.08	

Location	20	21	22	23



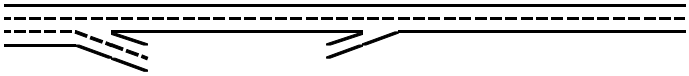
Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flow Rate				
Off Volume (vph)	430			
PHF	0.88			
Total Lanes	2			
Terrain	Level			
Grade %	0.0%			
Grade Length (mi)	0.00			
Truck & Bus %	4.0%			
RV %	0.0%			
E_T	1.5			
E_R	1.2			
f_{HV}	0.980			
f_P	1.00			
Off Flow (pcph)	498			
Off Flow (pcphpl)	249			
Calculate Off Ramp Roadway Operations				
Off Ramp Type	Right			
Off Ramp Speed	45			
Off Ramp Cap (pcph)	4,200			
Off Ramp v/c ratio	0.12			
Determine Adjacent Ramp for Three-Lane				
Up Type				
Up Distance				
Up Flow (pcph)				
Down Type				
Down Distance				
Down Flow (pcph)				
Calculate Merge Influence Area Operation				
Effective v_P (pcph)			705	
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FM} (Eqn 13-3)			0.594	
P_{FM} (Eqn 13-4)				
P_{FM} (Eqn 13-5)				
P_{FM}			1.000	
v_{12} (pcph)			705	
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)			705	
v_{R12a} (pcph)			864	
Merge Speed Index			0.28	
Merge Area Speed			58.6	
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed			58.6	
Merge v/c ratio			0.19	
Merge Density			8.4	
Merge LOS			A	

Location	20	21	22	23



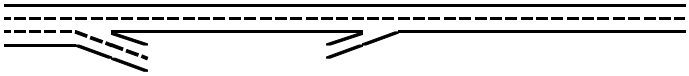
Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influence Area Operatic				
Effective v_P (pcph)				
Up Ramp L_{EQ}				
Down Ramp L_{EQ}				
P_{FD} (Eqn 13-9)				
P_{FD} (Eqn 13-10)				
P_{FD} (Eqn 13-11)				
P_{FD}				
v_{12} (pcph)				
v_3 (pcph)				
v_{34} (pcph)				
v_{12a} (pcph)				
Diverge Speed Index				
Diverge Area Speed				
Outer Lanes Volume				
Outer Lanes Speed				
Segment Speed				
Diverge v/c ratio				
Diverge Density				
Diverge LOS				
Calculate On Ramp to Off Ramp Flow Rat				
On to Off Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
On to Off Flow (pcph)				
Calculate On Ramp to Mainline Flow Rate				
On to ML Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
On to ML Flow (pcph)				

Location	20	21	22	23



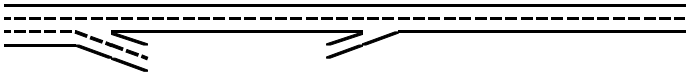
Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to Off Ramp Flow Rate				
ML to Off Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
ML to Off Flow (pcph)				
Calculate General Purpose Lanes to Gene				
GP to GP Volume (vph)				
PHF				
Terrain				
Grade %				
Grade Length (mi)				
Truck & Bus %				
RV %				
E_T				
E_R				
f_{HV}				
f_P				
GP to GP Flow (pcph)				

Location	20	21	22	23



Key

<> Express Lane (HOV)

No Trucks

Name	ri Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segment Operations				
Weave Type				
Weave Length				
Segment Lanes				
Weave Lanes				
Weave Flow (pcph)				
Non-Weave Flow				
Segment Flow				
Max Weave Length				
Length Check				
Ideal Weave Capacity				
f_{HV}				
f_P				
Capacity Condition 1				
Capacity Condition 2				
Weave v/c ratio				
Interchange Density				
Lane Changes On to ML				
Lane Changes ML to Off				
Lane Changes On to Off				
Min Lane Change Rate				
Weave LC Rate				
Non-Weave LC Rate 1				
Non-Weave LC Rate 2				
Non-Weave LC Rate 3				
Segment LC Rate				
Weave Intensity Factor				
Weave Speed				
Non-Weave Speed				
Segment Speed				
Weave Density				
Weave LOS				
Summarize Segment Operations				
Segment v/c ratio	0.17	0.15	0.19	0.18
Segment Density	6.2	5.4	8.4	6.6
Segment LOS	A	A	A	A
Over Capacity				

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

Existing Plus Project Conditions
Timee Period: 2014 PM Peak Hour

Location	1	2	3	4	5	6	7

Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Define Freeway Segment							
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	Weave
Mainline Volume	4,660	4,660	3,500	3,500	4,430	3,440	3,440
On Ramp Volume				930			640
Off Ramp Volume		1,160			990		1,320
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (GP)							
GP Volume (vph)	4,660	4,660	3,500	4,430	4,430	3,440	4,080
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	2	2	2	3
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,003	5,003	3,758	4,756	4,756	3,693	4,381
GP Flow (pcphpl)	2,502	2,502	1,879	2,378	2,378	1,847	1,460
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes							
v/c ratio	1.06	1.06	0.80	1.01	1.01	0.79	0.62
Speed (mph)	-	-	61.7	-	-	62.2	64.9
Density (pcphpl)	-	-	30.4	-	-	29.7	22.5
LOS	F	F	D	F	F	D	C
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		5,003		3,768	4,756		3,697
GP_{IN} Cap (pcph)		4,700		4,700	4,700		4,700
GP_{IN} v/c ratio		1.06		0.80	1.01		0.79
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		3,808		4,756	3,699		2,970
GP_{OUT} Cap (pcph)		4,700		4,700	4,700		4,700
GP_{OUT} v/c ratio		0.81		1.01	0.79		0.63

Location	1	2	3	4	5	6	7

Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)				930			640
PHF				0.95			0.95
Total Lanes				1			1
Terrain				Level			Level
Grade %				0.0%			0.0%
Grade Length (mi)				0.00			0.00
Truck & Bus %				2.0%			3.0%
RV %				0.0%			0.0%
E_T				1.5			1.5
E_R				1.2			1.2
f_{HV}				0.990			0.985
f_P				1.00			1.00
On Flow (pcph)				989			684
On Flow (pcphpl)				989			684
Calculate On Ramp Roadway Operations							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.47			

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

Existing Plus Project Conditions
Timee Period: 2014 PM Peak Hour

Location	1	2	3	4	5	6	7

Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Calculate Off Ramp Flow Rate							
Off Volume (vph)		1,160			990		1,320
PHF		0.98			0.95		0.95
Total Lanes		1			2		2
Terrain		Level			Level		Level
Grade %		0.0%			0.0%		0.0%
Grade Length (mi)		0.00			0.00		0.00
Truck & Bus %		2.0%			3.0%		3.0%
RV %		0.0%			0.0%		0.0%
E_T		1.5			1.5		1.5
E_R		1.2			1.2		1.2
f_{HV}		0.990			0.985		0.985
f_P		1.00			1.00		1.00
Off Flow (pcph)		1,196			1,058		1,410
Off Flow (pcphpl)		1,196			529		705
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right			Right		
Off Ramp Speed		45			45		
Off Ramp Cap (pcph)		2,100			4,200		
Off Ramp v/c ratio		0.57			0.25		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)				3,768			
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)				0.585			
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}				1.000			
v_{12} (pcph)				3,768			
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)				3,768			
v_{R12a} (pcph)				4,756			
Merge Speed Index				-			
Merge Area Speed				-			
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Merge v/c ratio				1.03			
Merge Density				-			
Merge LOS				F			

Location	1	2	3	4	5	6	7

Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)		5,003			4,756		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)		0.580			0.592		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		1.000			1.000		
v_{12} (pcph)		5,003			4,756		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		5,003			4,756		
Diverge Speed Index		-			-		
Diverge Area Speed		-			-		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio		1.14			1.08		
Diverge Density		-			-		
Diverge LOS		F			F		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments							
On to Off Volume (vph)							64
PHF							0.95
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							3.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.985
f_P							1.00
On to Off Flow (pcph)							68
Calculate On Ramp to Mainline Flow Rate for Weave Segments							
On to ML Volume (vph)							576
PHF							0.95
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							3.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.985
f_P							1.00
On to ML Flow (pcph)							615

Location	1	2	3	4	5	6	7

Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Calculate Mainline to Off Ramp Flow Rate for Weave Segments							
ML to Off Volume (vph)							1,256
PHF							0.95
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							6.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.971
f_P							1.00
ML to Off Flow (pcph)							1,362
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments							
GP to GP Volume (vph)							2,184
PHF							0.95
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							6.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.971
f_P							1.00
GP to GP Flow (pcph)							2,368

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

Existing Plus Project Conditions
Timee Period: 2014 PM Peak Hour

Location	1	2	3	4	5	6	7

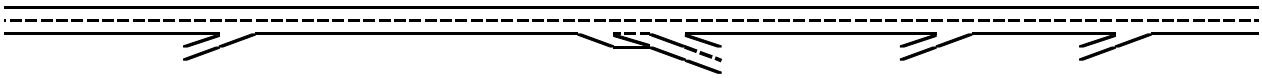
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Pleasant Grove On to Blue Oaks Off Ramp
Calculate Weave Segment Operations							
Weave Type							One-sided
Weave Length							2,370
Segment Lanes							3
Weave Lanes							3
Weave Flow (pcph)							1,977
Non-Weave Flow							2,436
Segment Flow							4,413
Max Weave Length							5,659
Length Check							OK
Ideal Weave Capacity							2,098
f_{HV}							0.973
f_P							0.998
Capacity Condition 1							6,113
Capacity Condition 2							7,587
Weave v/c ratio							0.70
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	1.06	1.14	0.80	1.03	1.08	0.79	0.70
Segment Density	-	-	30.4	-	-	29.7	
Segment LOS	F	F	D	F	F	D	
Over Capacity	Segment GP Lanes	Segment GP Lanes In GP Lanes Diverge		Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes In GP Lanes Diverge		

Location	8	9	10	11	12	13	14



Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Define Freeway Segme							
Type	Basic	Merge	Basic	Diverge	Basic	Merge	Merge
Mainline Volume	2,760	2,760	3,250	3,250	2,600	2,600	2,710
On Ramp Volume		490				110	420
Off Ramp Volume				650			
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in							
GP Volume (vph)	2,760	3,250	3,250	3,250	2,600	2,710	3,130
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,963	3,489	3,489	3,489	2,792	2,910	3,361
GP Flow (pcphpl)	1,482	1,745	1,745	1,745	1,396	1,455	1,680
Calculate Speed in Gen							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in							
v/c ratio	0.63	0.74	0.74	0.74	0.59	0.62	0.72
Speed (mph)	64.9	63.3	63.3	63.3	65.0	65.0	63.9
Density (pcphpl)	22.8	27.6	27.6	27.6	21.5	22.4	26.3
LOS	C	D	D	D	C	C	D
Calculate Operations fo							
GP_{IN} Vol (pcph)		2,960		3,489		2,750	2,865
GP_{IN} Cap (pcph)		4,700		4,700		4,700	4,700
GP_{IN} v/c ratio		0.63		0.74		0.59	0.61
Calculate Operations fo							
GP_{OUT} Vol (pcph)		3,489		2,713		2,910	3,361
GP_{OUT} Cap (pcph)		4,700		4,700		4,700	4,700
GP_{OUT} v/c ratio		0.74		0.58		0.62	0.72

Location	8	9	10	11	12	13	14

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Calculate Flow Rate in							
Calculate Speed in Exp							
Calculate Operations in							
Calculate On Ramp Flo							
On Volume (vph)		490				110	420
PHF		0.94				0.7	0.86
Total Lanes		1				1	1
Terrain		Level				Level	Level
Grade %		0.0%				0.0%	0.0%
Grade Length (mi)		0.00				0.00	0.00
Truck & Bus %		3.0%				3.0%	3.0%
RV %		0.0%				0.0%	0.0%
E_T		1.5				1.5	1.5
E_R		1.2				1.2	1.2
f_{HV}		0.985				0.985	0.985
f_P		1.00				1.00	1.00
On Flow (pcph)		529				160	496
On Flow (pcphpl)		529				160	496
Calculate On Ramp Roa							
On Ramp Type		Right				Right	Right
On Ramp Speed (mph)		45				25	45
On Ramp Cap (pcph)		2,100				1,900	2,100
On Ramp v/c ratio		0.25				0.08	0.24

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

Existing Plus Project Conditions
Timee Period: 2014 PM Peak Hour

Location	8	9	10	11	12	13	14

Key
<> Express Lane (HOV)
No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Calculate Off Ramp Flo							
Off Volume (vph)				650			
PHF				0.85			
Total Lanes				2			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				3.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.985			
f_P				1.00			
Off Flow (pcph)				776			
Off Flow (pcphpl)				388			
Calculate Off Ramp Roa							
Off Ramp Type				Right			
Off Ramp Speed				45			
Off Ramp Cap (pcph)				4,200			
Off Ramp v/c ratio				0.18			
Determine Adjacent Ra							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influen							
Effective v_P (pcph)		2,960				2,750	2,865
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)		0.588				0.595	0.611
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}		1.000				1.000	1.000
v_{12} (pcph)		2,960				2,750	2,865
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		2,960				2,750	2,865
v_{R12a} (pcph)		3,489				2,910	3,361
Merge Speed Index		0.42				0.36	0.33
Merge Area Speed		55.5				56.7	57.5
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed		55.5				56.7	57.5
Merge v/c ratio		0.76				0.63	0.73
Merge Density		30.1				24.2	24.1
Merge LOS		D				C	C

Location	8	9	10	11	12	13	14

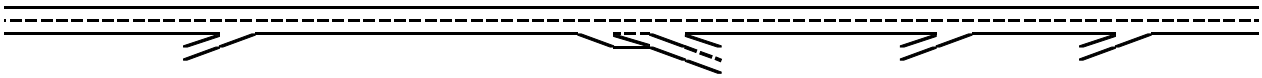
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Calculate Diverge Influe							
Effective v_P (pcph)				3,489			
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)				0.637			
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}				1.000			
v_{12} (pcph)				3,489			
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)				3,489			
Diverge Speed Index				0.37			
Diverge Area Speed				56.5			
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed				56.5			
Diverge v/c ratio				0.79			
Diverge Density				20.8			
Diverge LOS				C			
Calculate On Ramp to C							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to M							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	8	9	10	11	12	13	14



Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Calculate Mainline to O							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purp							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Location	8	9	10	11	12	13	14

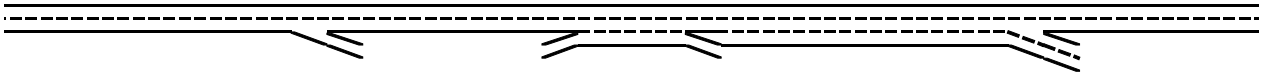
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp
Calculate Weave Segme							
Weave Type							
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Op							
Segment v/c ratio	0.63	0.76	0.74	0.79	0.59	0.63	0.73
Segment Density	22.8	30.1	27.6	20.8	21.5	24.2	24.1
Segment LOS	C	D	D	C	C	C	C
Over Capacity							

Location	15	16	17	18	19	20	21



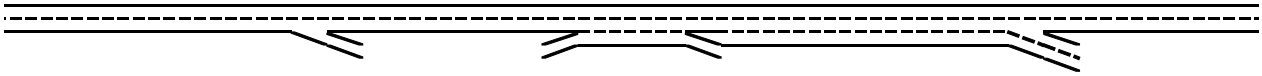
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Define Freeway Segmer							
Type	Basic	Diverge	Basic	Weave	Basic	Basic	Basic
Mainline Volume	3,130	3,130	2,540	2,540	1,910	1,910	830
On Ramp Volume				370			
Off Ramp Volume		590		1,000		1,080	
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in G							
GP Volume (vph)	3,130	3,130	2,540	2,910	1,910	1,910	830
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	3	3	3	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,361	3,361	2,727	3,124	2,051	2,051	891
GP Flow (pcphpl)	1,680	1,680	1,364	1,041	684	684	446
Calculate Speed in Gen							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in							
v/c ratio	0.72	0.72	0.58	0.44	0.29	0.29	0.19
Speed (mph)	63.9	63.9	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	26.3	26.3	21.0	16.0	10.5	10.5	6.9
LOS	D	D	C	B	A	A	A
Calculate Operations fo							
GP_{IN} Vol (pcph)		3,361		2,729			
GP_{IN} Cap (pcph)		4,700		4,700			
GP_{IN} v/c ratio		0.72		0.58			
Calculate Operations fo							
GP_{OUT} Vol (pcph)		2,727		1,894		799	
GP_{OUT} Cap (pcph)		4,700		4,700		4,700	
GP_{OUT} v/c ratio		0.58		0.40		0.17	

Location	15	16	17	18	19	20	21



Key

<> Express Lane (HOV)

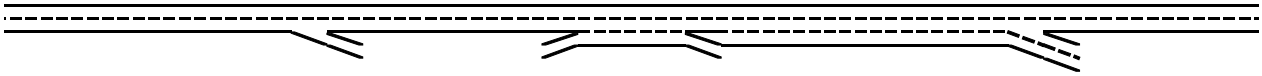
No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Calculate Flow Rate in							
Calculate Speed in Exp							
Calculate Operations in							
Calculate On Ramp Flo							
On Volume (vph)				370			
PHF				0.95			
Total Lanes				1			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				3.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.985			
f_P				1.00			
On Flow (pcph)				395			
On Flow (pcphpl)				395			
Calculate On Ramp Roa							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.19			

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

Existing Plus Project Conditions
Timee Period: 2014 PM Peak Hour

Location	15	16	17	18	19	20	21



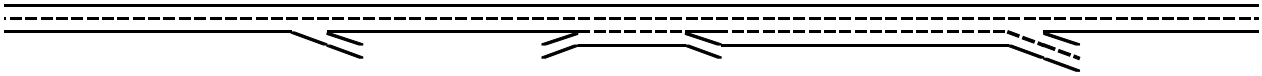
Key
<> Express Lane (HOV)
No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Calculate Off Ramp Flo							
Off Volume (vph)		590		1,000		1,080	
PHF		0.94		0.825		0.88	
Total Lanes		1		1		2	
Terrain		Level		Level		Level	
Grade %		0.0%		0.0%		0.0%	
Grade Length (mi)		0.00		0.00		0.00	
Truck & Bus %		2.0%		3.0%		4.0%	
RV %		0.0%		0.0%		0.0%	
E_T		1.5		1.5		1.5	
E_R		1.2		1.2		1.2	
f_{HV}		0.990		0.985		0.980	
f_P		1.00		1.00		1.00	
Off Flow (pcph)		634		1,230		1,252	
Off Flow (pcphpl)		634		1,230		626	
Calculate Off Ramp Roa							
Off Ramp Type		Right		Right		Right	
Off Ramp Speed		45		45		45	
Off Ramp Cap (pcph)		2,100		2,100		4,200	
Off Ramp v/c ratio		0.30		0.59		0.30	
Determine Adjacent Ra							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influen							
Effective v_P (pcph)							
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)							
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}							
v_{12} (pcph)							
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							
v_{R12a} (pcph)							
Merge Speed Index							
Merge Area Speed							
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Merge v/c ratio							
Merge Density							
Merge LOS							

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

Existing Plus Project Conditions
Timee Period: 2014 PM Peak Hour

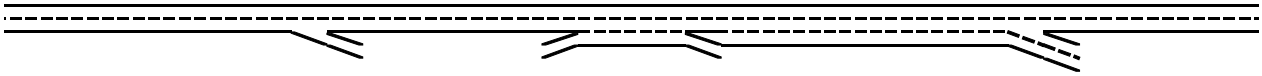
Location	15	16	17	18	19	20	21



Key
<> Express Lane (HOV)
No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Calculate Diverge Influe							
Effective v_P (pcph)		3,361					
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)		0.647					
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		1.000					
v_{12} (pcph)		3,361					
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		3,361					
Diverge Speed Index		0.36					
Diverge Area Speed		56.8					
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed		56.8					
Diverge v/c ratio		0.76					
Diverge Density		31.6					
Diverge LOS		D					
Calculate On Ramp to C							
On to Off Volume (vph)				37			
PHF				0.8			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				3.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.985			
f_P				1.00			
On to Off Flow (pcph)				47			
Calculate On Ramp to M							
On to ML Volume (vph)				333			
PHF				0.8			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				7.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.966			
f_P				1.00			
On to ML Flow (pcph)				431			

Location	15	16	17	18	19	20	21



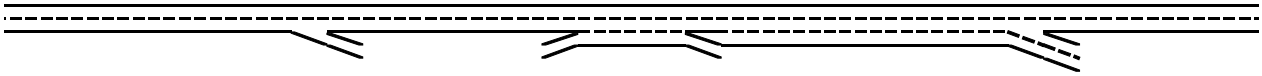
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Calculate Mainline to O							
ML to Off Volume (vph)				963			
PHF				0.83			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				3.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.985			
f_P				1.00			
ML to Off Flow (pcph)				1,178			
Calculate General Purp							
GP to GP Volume (vph)				1,577			
PHF				0.825			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				3.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.985			
f_P				1.00			
GP to GP Flow (pcph)				1,940			

Location	15	16	17	18	19	20	21



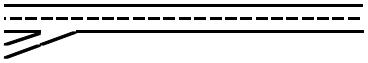
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset to Twelve Bridges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp
Calculate Weave Segme							
Weave Type				One-sided			
Weave Length				1,680			
Segment Lanes				3			
Weave Lanes				3			
Weave Flow (pcph)				1,608			
Non-Weave Flow				1,987			
Segment Flow				3,596			
Max Weave Length				5,651			
Length Check				OK			
Ideal Weave Capacity				2,046			
f_{HV}				0.983			
f_P				0.996			
Capacity Condition 1				6,009			
Capacity Condition 2				7,659			
Weave v/c ratio				0.59			
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Op							
Segment v/c ratio	0.72	0.76	0.58	0.59	0.29	0.29	0.19
Segment Density	26.3	31.6	21.0		10.5	10.5	6.9
Segment LOS	D	D	C		A	A	A
Over Capacity							

Location	22	23



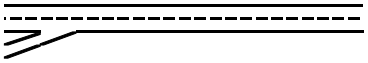
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segme		
Type	Merge	Basic
Mainline Volume	830	930
On Ramp Volume	100	
Off Ramp Volume		
Express Lane Volume		
EL On Ramp Volume		
EL Off Ramp Volume		
Calculate Flow Rate in		
GP Volume (vph)	930	930
PHF	0.95	0.95
GP Lanes	2	2
Terrain	Level	Level
Grade %	0.0%	0.0%
Grade Length (mi)	0.00	0.00
Truck & Bus %	4.0%	4.0%
RV %	0.0%	0.0%
E_T	1.5	1.5
E_R	1.2	1.2
f_{HV}	0.980	0.980
f_P	1.00	1.00
GP Flow (pcph)	999	999
GP Flow (pcphpl)	499	499
Calculate Speed in Gen		
Lane Width (ft)		
Shoulder Width		
TRD		
f_{LW}		
f_{LC}		
Calculated FFS		
Measured FFS		
FFS Curve	65	65
Calculate Operations in		
v/c ratio	0.21	0.21
Speed (mph)	65.0	65.0
Density (pcphpl)	7.7	7.7
LOS	A	A
Calculate Operations fo		
GP_{IN} Vol (pcph)	885	
GP_{IN} Cap (pcph)	4,700	
GP_{IN} v/c ratio	0.19	
Calculate Operations fo		
GP_{OUT} Vol (pcph)	999	
GP_{OUT} Cap (pcph)	4,700	
GP_{OUT} v/c ratio	0.21	

Location	22	23



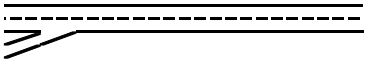
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in		
Calculate Speed in Exp		
Calculate Operations in		
Calculate On Ramp Flo		
On Volume (vph)	100	
PHF	0.9	
Total Lanes	1	
Terrain	Level	
Grade %	0.0%	
Grade Length (mi)	0.00	
Truck & Bus %	4.0%	
RV %	0.0%	
E_T	1.5	
E_R	1.2	
f_{HV}	0.980	
f_P	1.00	
On Flow (pcph)	113	
On Flow (pcphpl)	113	
Calculate On Ramp Roa		
On Ramp Type	Right	
On Ramp Speed (mph)	45	
On Ramp Cap (pcph)	2,100	
On Ramp v/c ratio	0.05	

Location	22	23



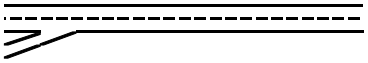
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flo		
Off Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
Off Flow (pcph)		
Off Flow (pcphpl)		
Calculate Off Ramp Roa		
Off Ramp Type		
Off Ramp Speed		
Off Ramp Cap (pcph)		
Off Ramp v/c ratio		
Determine Adjacent Ra		
Up Type		
Up Distance		
Up Flow (pcph)		
Down Type		
Down Distance		
Down Flow (pcph)		
Calculate Merge Influen		
Effective v_P (pcph)	885	
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FM} (Eqn 13-3)	0.594	
P_{FM} (Eqn 13-4)		
P_{FM} (Eqn 13-5)		
P_{FM}	1.000	
v_{12} (pcph)	885	
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)	885	
v_{R12a} (pcph)	999	
Merge Speed Index	0.28	
Merge Area Speed	58.6	
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed	58.6	
Merge v/c ratio	0.22	
Merge Density	9.4	
Merge LOS	A	

Location	22	23



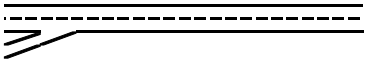
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influe		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FD} (Eqn 13-9)		
P_{FD} (Eqn 13-10)		
P_{FD} (Eqn 13-11)		
P_{FD}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
Diverge Speed Index		
Diverge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Diverge v/c ratio		
Diverge Density		
Diverge LOS		
Calculate On Ramp to C		
On to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to Off Flow (pcph)		
Calculate On Ramp to M		
On to ML Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to ML Flow (pcph)		

Location	22	23



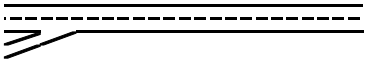
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to O		
ML to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
ML to Off Flow (pcph)		
Calculate General Purp		
GP to GP Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
GP to GP Flow (pcph)		

Location	22	23



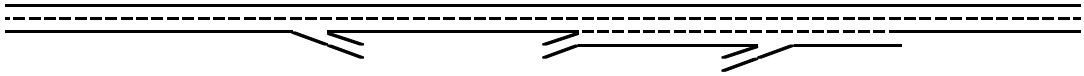
Key

<> Express Lane (HOV)

No Trucks

Name	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segme		
Weave Type		
Weave Length		
Segment Lanes		
Weave Lanes		
Weave Flow (pcph)		
Non-Weave Flow		
Segment Flow		
Max Weave Length		
Length Check		
Ideal Weave Capacity		
f_{HV}		
f_P		
Capacity Condition 1		
Capacity Condition 2		
Weave v/c ratio		
Interchange Density		
Lane Changes On to ML		
Lane Changes ML to Off		
Lane Changes On to Off		
Min Lane Change Rate		
Weave LC Rate		
Non-Weave LC Rate 1		
Non-Weave LC Rate 2		
Non-Weave LC Rate 3		
Segment LC Rate		
Weave Intensity Factor		
Weave Speed		
Non-Weave Speed		
Segment Speed		
Weave Density		
Weave LOS		
Summarize Segment O		
Segment v/c ratio	0.22	0.21
Segment Density	9.4	7.7
Segment LOS	A	A
Over Capacity		

Location	1	2	3	4	5	6



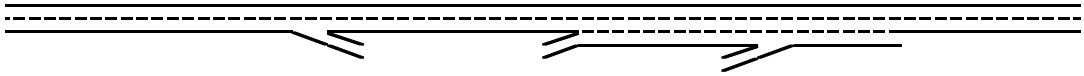
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Define Freeway Segment						
Type	Basic	Diverge	Basic	Basic	Merge	Basic
Length (ft)	8,330	1,500	1,800	1,000	1,500	870
Accel Length					720	
Decel Length		150				
Mainline Volume	960	960	870	870	1,580	2,140
On Ramp Volume				710	560	
Off Ramp Volume		90				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	960	960	870	1,580	2,140	2,140
PHF	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	2	2	2	3	3	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	1,077	1,077	976	1,773	2,402	2,402
GP Flow (pcphpl)	539	539	488	591	801	1,201
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.23	0.23	0.21	0.25	0.34	0.51
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	8.3	8.3	7.5	9.1	12.3	18.5
LOS	A	A	A	A	B	C
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)		1,077		956	1,640	
GP_{IN} Cap (pcph)		4,700		4,700	7,050	
GP_{IN} v/c ratio		0.23		0.20	0.23	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)		974			2,402	
GP_{OUT} Cap (pcph)		4,700			7,050	
GP_{OUT} v/c ratio		0.21			0.34	

Location	1	2	3	4	5	6



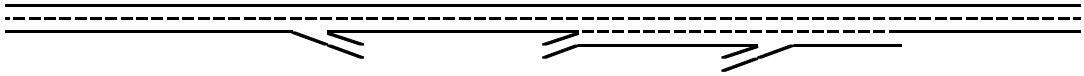
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)				710	560	
PHF				0.878	0.743	
Total Lanes				1	1	
Terrain				Level	Level	
Grade %				0.0%	0.0%	
Grade Length (mi)				0.00	0.00	
Truck & Bus %				2.0%	2.0%	
RV %				0.0%	0.0%	
E_T				1.5	1.5	
E_R				1.2	1.2	
f_{HV}				0.990	0.990	
f_P				1.00	1.00	
On Flow (pcph)				817	761	
On Flow (pcphpl)				817	761	
Calculate On Ramp Roadway Operations						
On Ramp Type				Right	Right	
On Ramp Speed (mph)				25	45	
On Ramp Cap (pcph)				1,900	2,100	
On Ramp v/c ratio				0.43	0.36	

Location	1	2	3	4	5	6



Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Off Ramp Flow Rate						
Off Volume (vph)		90				
PHF		0.88				
Total Lanes		1				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		103				
Off Flow (pcphpl)		103				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		2,100				
Off Ramp v/c ratio		0.05				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type					On	
Up Distance					1,000	
Up Flow (pcph)					817	
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)					1,640	
Up Ramp L_{EQ}					785	
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)					0.598	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}					0.598	
v_{12} (pcph)					980	
v_3 (pcph)					660	
v_{34} (pcph)						
v_{12a} (pcph)					980	
v_{R12a} (pcph)					1,742	
Merge Speed Index					0.28	
Merge Area Speed					58.6	
Outer Lanes Volume					660	
Outer Lanes Speed					64.4	
Segment Speed					60.1	
Merge v/c ratio					0.38	
Merge Density					14.2	
Merge LOS					B	

Location	1	2	3	4	5	6

Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)		1,077				
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)		0.728				
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}		1.000				
v_{12} (pcph)		1,077				
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)		1,077				
Diverge Speed Index		0.31				
Diverge Area Speed		57.9				
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed		57.9				
Diverge v/c ratio		0.24				
Diverge Density		12.2				
Diverge LOS		B				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	1	2	3	4	5	6

Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

Existing Plus Project Conditions
Time Period: 2014 AM Peak Hour

Location	1	2	3	4	5	6

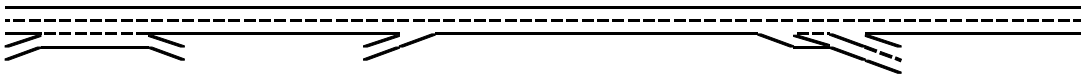
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.23	0.24	0.21	0.25	0.38	0.51
Segment Density	8.3	12.2	7.5	9.1	14.2	18.5
Segment LOS	A	B	A	A	B	C
Over Capacity						

Location	7	8	9	10	11	12



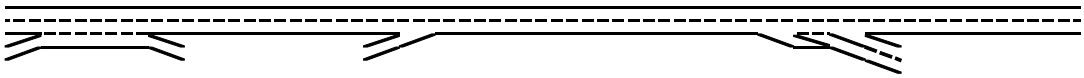
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Basic	Diverge	Basic
Length (ft)	3,050	1,120	1,500	7,650	1,500	2,000
Accel Length			450			
Decel Length					1,500	
Mainline Volume	2,140	2,510	2,510	3,100	3,100	2,540
On Ramp Volume	890		590			
Off Ramp Volume	520				560	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,030	2,510	3,100	3,100	3,100	2,540
PHF	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,400	2,817	3,479	3,479	3,479	2,850
GP Flow (pcphpl)	1,133	1,408	1,739	1,739	1,739	1,425
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.48	0.60	0.74	0.74	0.74	0.61
Speed (mph)	65.0	65.0	63.4	63.4	63.4	65.0
Density (pcphpl)	17.4	21.7	27.5	27.5	27.5	21.9
LOS	B	C	D	D	D	C
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	2,394		2,845		3,479	
GP_{IN} Cap (pcph)	4,700		4,700		4,700	
GP_{IN} v/c ratio	0.51		0.61		0.74	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	2,649		3,479		2,744	
GP_{OUT} Cap (pcph)	4,700		4,700		4,700	
GP_{OUT} v/c ratio	0.56		0.74		0.58	

Location	7	8	9	10	11	12



Key

<> Express Lane (HOV)

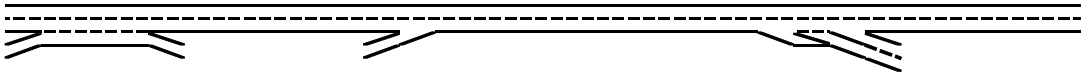
No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5		1.5	1.5
E_R	1.2	1.2	1.2		1.2	1.2
f_{HV}	0.990	0.990	0.990		0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	890		590			
PHF	0.893		0.94			
Total Lanes	1		1			
Terrain	Level		Level			
Grade %	0.0%		0.0%			
Grade Length (mi)	0.00		0.00			
Truck & Bus %	2.0%		2.0%			
RV %	0.0%		0.0%			
E_T	1.5		1.5			
E_R	1.2		1.2			
f_{HV}	0.990		0.990			
f_P	1.00		1.00			
On Flow (pcph)	1,007		634			
On Flow (pcphpl)	1,007		634			
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right			
On Ramp Speed (mph)	45		25			
On Ramp Cap (pcph)	2,100		1,900			
On Ramp v/c ratio	0.48		0.33			

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

Existing Plus Project Conditions
Time Period: 2014 AM Peak Hour

Location	7	8	9	10	11	12



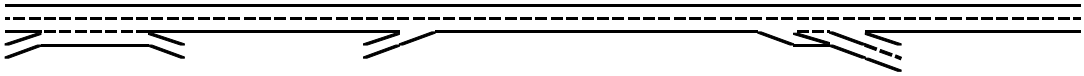
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	520				560	
PHF	0.706				0.77	
Total Lanes	1				2	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	4.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.980				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	751				735	
Off Flow (pcphpl)	751				367	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				4,200	
Off Ramp v/c ratio	0.36				0.17	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			2,845			
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.590			
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000			
v_{12} (pcph)			2,845			
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			2,845			
v_{R12a} (pcph)			3,479			
Merge Speed Index			0.42			
Merge Area Speed			55.2			
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed			55.2			
Merge v/c ratio			0.76			
Merge Density			29.5			
Merge LOS			D			

Location	7	8	9	10	11	12



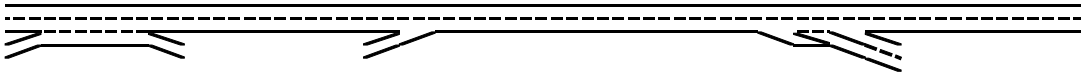
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					3,479	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.639	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					3,479	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					3,479	
Diverge Speed Index					0.36	
Diverge Area Speed					56.6	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed					56.6	
Diverge v/c ratio					0.79	
Diverge Density					20.7	
Diverge LOS					C	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	89					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	95					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	801					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	856					

Location	7	8	9	10	11	12



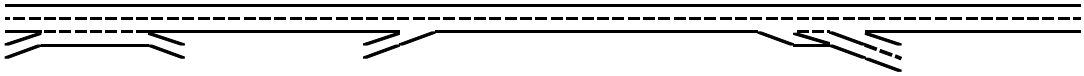
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	431					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
ML to Off Flow (pcph)	512					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	1,709					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
GP to GP Flow (pcph)	2,031					

Location	7	8	9	10	11	12



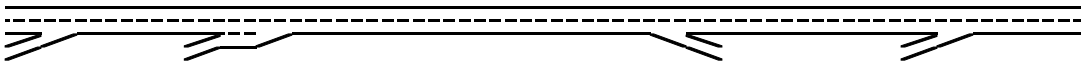
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,050					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	1,368					
Non-Weave Flow	2,126					
Segment Flow	3,494					
Max Weave Length	6,586					
Length Check	OK					
Ideal Weave Capacity	2,003					
f_{HV}	0.989					
f_P	0.996					
Capacity Condition 1	5,920					
Capacity Condition 2	6,039					
Weave v/c ratio	0.58					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.58	0.60	0.76	0.74	0.79	0.61
Segment Density		21.7	29.5	27.5	20.7	21.9
Segment LOS		C	D	D	C	C
Over Capacity						

Location	13	14	15	16	17	18



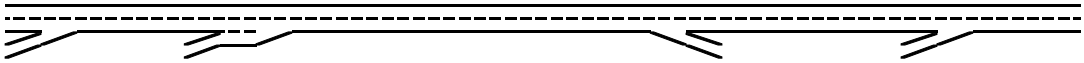
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Define Freeway Segment						
Type	Merge	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	1,500	770	1,500	1,680	1,000
Accel Length	500	1,450				380
Decel Length				200		
Mainline Volume	2,540	3,030	3,260	3,260	2,700	2,700
On Ramp Volume	490	230				420
Off Ramp Volume				560		
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,030	3,260	3,260	3,260	2,700	3,120
PHF	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	2	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,400	3,658	3,658	3,658	3,030	3,501
GP Flow (pcphpl)	1,700	1,829	1,829	1,829	1,515	1,751
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.72	0.78	0.78	0.78	0.64	0.74
Speed (mph)	63.7	62.4	62.4	62.4	64.8	63.3
Density (pcphpl)	26.7	29.3	29.3	29.3	23.4	27.7
LOS	D	D	D	D	C	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	2,841	3,386		3,658		3,027
GP_{IN} Cap (pcph)	4,700	4,700		4,700		4,700
GP_{IN} v/c ratio	0.60	0.72		0.78		0.64
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,400	3,658		3,042		3,501
GP_{OUT} Cap (pcph)	4,700	4,700		4,700		4,700
GP_{OUT} v/c ratio	0.72	0.78		0.65		0.74

Location	13	14	15	16	17	18



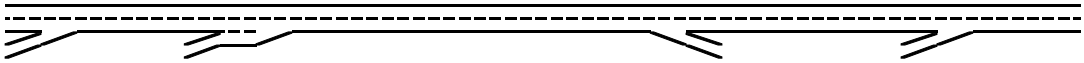
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5		1.5	1.5	1.5
E_R	1.2	1.2		1.2	1.2	1.2
f_{HV}	0.990	0.990		0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	490	230				420
PHF	0.885	0.854				0.895
Total Lanes	1	1				1
Terrain	Level	Level				Level
Grade %	0.0%	0.0%				0.0%
Grade Length (mi)	0.00	0.00				0.00
Truck & Bus %	2.0%	2.0%				2.0%
RV %	0.0%	0.0%				0.0%
E_T	1.5	1.5				1.5
E_R	1.2	1.2				1.2
f_{HV}	0.990	0.990				0.990
f_P	1.00	1.00				1.00
On Flow (pcph)	559	272				474
On Flow (pcphpl)	559	272				474
Calculate On Ramp Roadway Operations						
On Ramp Type	Right	Right				Right
On Ramp Speed (mph)	25	45				25
On Ramp Cap (pcph)	1,900	2,100				1,900
On Ramp v/c ratio	0.29	0.13				0.25

Location	13	14	15	16	17	18



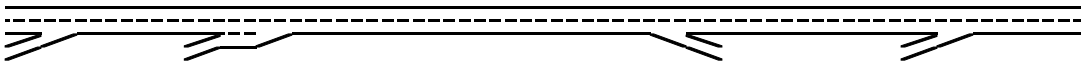
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)				560		
PHF				0.927		
Total Lanes				1		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				4.2%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.979		
f_P				1.00		
Off Flow (pcph)				617		
Off Flow (pcphpl)				617		
Calculate Off Ramp Roadway Operations						
Off Ramp Type				Right		
Off Ramp Speed				45		
Off Ramp Cap (pcph)				2,100		
Off Ramp v/c ratio				0.29		
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)	2,841	3,386				3,027
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)	0.592	0.618				0.588
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}	1.000	1.000				1.000
v_{12} (pcph)	2,841	3,386				3,027
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)	2,841	3,386				3,027
v_{R12a} (pcph)	3,400	3,658				3,501
Merge Speed Index	0.41	0.34				0.43
Merge Area Speed	55.5	57.1				55.1
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed	55.5	57.1				55.1
Merge v/c ratio	0.74	0.80				0.76
Merge Density	28.6	24.8				30.2
Merge LOS	D	C				D

Location	13	14	15	16	17	18



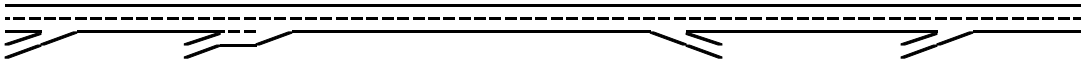
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)				3,658		
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)				0.640		
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}				1.000		
v_{12} (pcph)				3,658		
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)				3,658		
Diverge Speed Index				0.35		
Diverge Area Speed				56.9		
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed				56.9		
Diverge v/c ratio				0.83		
Diverge Density				33.9		
Diverge LOS				D		
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	13	14	15	16	17	18



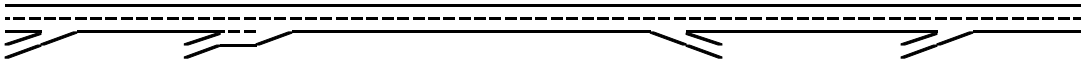
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Location	13	14	15	16	17	18



Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.74	0.80	0.78	0.83	0.64	0.76
Segment Density	28.6	24.8	29.3	33.9	23.4	30.2
Segment LOS	D	C	D	D	C	D
Over Capacity						

Location	19	20	21	22	23	24

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Merge	Diverge	Basic
Length (ft)	3,140	1,610	1,180	1,500	1,500	1,120
Accel Length			550	580		
Decel Length					140	
Mainline Volume	3,120	3,470	3,470	3,800	4,320	3,510
On Ramp Volume	1,080		330	520		
Off Ramp Volume	730				810	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,200	3,470	3,800	4,320	4,320	3,510
PHF	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.2%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.979	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,765	3,894	4,264	4,848	4,848	3,939
GP Flow (pcphpl)	1,588	1,947	2,132	2,424	2,424	1,970
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.68	0.83	0.91	1.03	1.03	0.84
Speed (mph)	64.5	60.8	57.4	-	-	60.4
Density (pcphpl)	24.6	32.0	37.1	-	-	32.6
LOS	C	D	E	F	F	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	3,589		3,914	4,295	4,848	
GP_{IN} Cap (pcph)	4,700		4,700	4,700	4,700	
GP_{IN} v/c ratio	0.76		0.83	0.91	1.03	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,924		4,264	4,848	3,987	
GP_{OUT} Cap (pcph)	4,700		4,700	4,700	4,700	
GP_{OUT} v/c ratio	0.83		0.91	1.03	0.85	

Location	19	20	21	22	23	24

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	1,080		330	520		
PHF	0.94		0.95	0.95		
Total Lanes	1		1	1		
Terrain	Level		Level	Level		
Grade %	0.0%		0.0%	0.0%		
Grade Length (mi)	0.00		0.00	0.00		
Truck & Bus %	4.6%		2.0%	2.0%		
RV %	0.0%		0.0%	0.0%		
E_T	1.5		1.5	1.5		
E_R	1.2		1.2	1.2		
f_{HV}	0.978		0.990	0.990		
f_P	1.00		1.00	1.00		
On Flow (pcph)	1,175		351	553		
On Flow (pcphpl)	1,175		351	553		
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right	Right		
On Ramp Speed (mph)	45		25	45		
On Ramp Cap (pcph)	2,100		1,900	2,100		
On Ramp v/c ratio	0.56		0.18	0.26		

Location	19	20	21	22	23	24

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	730				810	
PHF	0.877				0.95	
Total Lanes	1				1	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	2.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.990				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	841				861	
Off Flow (pcphpl)	841				861	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				2,100	
Off Ramp v/c ratio	0.40				0.41	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,914	4,295		
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.593	0.594		
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000	1.000		
v_{12} (pcph)			3,914	4,295		
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			3,914	4,295		
v_{R12a} (pcph)			4,264	4,848		
Merge Speed Index			0.57	-		
Merge Area Speed			51.9	-		
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed			51.9			
Merge v/c ratio			0.93	1.05		
Merge Density			35.1	-		
Merge LOS			E	F		

Location	19	20	21	22	23	24

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					4,848	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.599	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					4,848	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					4,848	
Diverge Speed Index					-	
Diverge Area Speed					-	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio					1.10	
Diverge Density					-	
Diverge LOS					F	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	108					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	115					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	972					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	1,039					

Location	19	20	21	22	23	24

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	622					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	6.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.971					
f_P	1.00					
ML to Off Flow (pcph)	674					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	2,498					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	6.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.971					
f_P	1.00					
GP to GP Flow (pcph)	2,708					

Location	19	20	21	22	23	24

Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,140					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	1,713					
Non-Weave Flow	2,824					
Segment Flow	4,537					
Max Weave Length	6,431					
Length Check	OK					
Ideal Weave Capacity	2,022					
f_{HV}	0.975					
f_P	0.997					
Capacity Condition 1	5,891					
Capacity Condition 2	6,174					
Weave v/c ratio	0.75					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.75	0.83	0.93	1.05	1.10	0.84
Segment Density		32.0	35.1	-	-	32.6
Segment LOS		D	E	F	F	D
Over Capacity				Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes In GP Lanes Diverge	

Location	25	26	27

Key

<> Express Lane (HOV)

No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segment			
Type	Basic	Merge	Basic
Length (ft)	1,950	1,500	750
Accel Length		590	
Decel Length			
Mainline Volume	3,510	3,510	4,300
On Ramp Volume		790	
Off Ramp Volume			
Express Lane Volume			
EL On Ramp Volume			
EL Off Ramp Volume			
Calculate Flow Rate in General Purpose Lanes (GP			
GP Volume (vph)	3,510	4,300	4,300
PHF	0.9	0.9	0.9
GP Lanes	3	3	3
Terrain	Level	Level	Level
Grade %	100.0%	0.0%	0.0%
Grade Length (mi)	1.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5
E_R	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990
f_P	2.00	1.00	1.00
GP Flow (pcph)	1,970	4,826	4,826
GP Flow (pcphpl)	657	1,609	1,609
Calculate Speed in General Purpose Lanes			
Lane Width (ft)			
Shoulder Width			
TRD			
f_{LW}			
f_{LC}			
Calculated FFS			
Measured FFS			
FFS Curve	65	65	65
Calculate Operations in General Purpose Lanes			
v/c ratio	0.28	0.68	0.68
Speed (mph)	65.0	64.4	64.4
Density (pcphpl)	10.1	25.0	25.0
LOS	A	C	C
Calculate Operations for Entering GP Lanes			
GP_{IN} Vol (pcph)		3,919	
GP_{IN} Cap (pcph)		7,050	
GP_{IN} v/c ratio		0.56	
Calculate Operations for Exiting GP Lanes			
GP_{OUT} Vol (pcph)		4,826	
GP_{OUT} Cap (pcph)		7,050	
GP_{OUT} v/c ratio		0.68	

Location	25	26	27

Key

<> Express Lane (HOV)

No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in Express Lanes (EL)			
EL Volume (vph)			
PHF			
Express Lanes	0	0	0
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T		1.5	1.5
E_R		1.2	1.2
f_{HV}		0.990	0.990
f_P			
EL Flow (pcph)			
EL Flow (pcphpl)			
Calculate Speed in Express Lanes			
Lane Width (ft)			
Shoulder Width			
TRD			
f_{LW}			
f_{LC}			
Calc'd FFS			
Measured FFS			
FFS			
Calculate Operations in Express Lanes			
EL_{IN} v/c ratio			
Calculate On Ramp Flow Rate			
On Volume (vph)		790	
PHF		0.88	
Total Lanes		1	
Terrain		Level	
Grade %		0.0%	
Grade Length (mi)		0.00	
Truck & Bus %		2.0%	
RV %		0.0%	
E_T		1.5	
E_R		1.2	
f_{HV}		0.990	
f_P		1.00	
On Flow (pcph)		907	
On Flow (pcphpl)		907	
Calculate On Ramp Roadway Operations			
On Ramp Type		Right	
On Ramp Speed (mph)		45	
On Ramp Cap (pcph)		2,100	
On Ramp v/c ratio		0.43	

Location	25	26	27

Key

<> Express Lane (HOV)

No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flow Rate			
Off Volume (vph)			
PHF			
Total Lanes			
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T			
E_R			
f_{HV}			
f_P			
Off Flow (pcph)			
Off Flow (pcphpl)			
Calculate Off Ramp Roadway Operations			
Off Ramp Type			
Off Ramp Speed			
Off Ramp Cap (pcph)			
Off Ramp v/c ratio			
Determine Adjacent Ramp for Three-Lane Mainline			
Up Type		No	
Up Distance			
Up Flow (pcph)			
Down Type		No	
Down Distance			
Down Flow (pcph)			
Calculate Merge Influence Area Operations			
Effective v_P (pcph)		3,919	
Up Ramp L_{EQ}			
Down Ramp L_{EQ}			
P_{FM} (Eqn 13-3)		0.594	
P_{FM} (Eqn 13-4)			
P_{FM} (Eqn 13-5)			
P_{FM}		0.594	
v_{12} (pcph)		2,328	
v_3 (pcph)		1,591	
v_{34} (pcph)			
v_{12a} (pcph)		2,328	
v_{R12a} (pcph)		3,235	
Merge Speed Index		0.37	
Merge Area Speed		56.6	
Outer Lanes Volume		1,591	
Outer Lanes Speed		61.1	
Segment Speed		58.0	
Merge v/c ratio		0.70	
Merge Density		26.6	
Merge LOS		C	

Location	25	26	27

Key

<> Express Lane (HOV)

No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influence Area Operations			
Effective v_P (pcph)			
Up Ramp L_{EQ}			
Down Ramp L_{EQ}			
P_{FD} (Eqn 13-9)			
P_{FD} (Eqn 13-10)			
P_{FD} (Eqn 13-11)			
P_{FD}			
v_{12} (pcph)			
v_3 (pcph)			
v_{34} (pcph)			
v_{12a} (pcph)			
Diverge Speed Index			
Diverge Area Speed			
Outer Lanes Volume			
Outer Lanes Speed			
Segment Speed			
Diverge v/c ratio			
Diverge Density			
Diverge LOS			
Calculate On Ramp to Off Ramp Flow Rate for Wea			
On to Off Volume (vph)			
PHF			
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T			
E_R			
f_{HV}			
f_P			
On to Off Flow (pcph)			
Calculate On Ramp to Mainline Flow Rate for Weav			
On to ML Volume (vph)			
PHF			
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T			
E_R			
f_{HV}			
f_P			
On to ML Flow (pcph)			

Location	25	26	27

Key

<> Express Lane (HOV)

No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to Off Ramp Flow Rate for Weav			
ML to Off Volume (vph)			
PHF			
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T			
E_R			
f_{HV}			
f_P			
ML to Off Flow (pcph)			
Calculate General Purpose Lanes to General Purpo			
GP to GP Volume (vph)			
PHF			
Terrain			
Grade %			
Grade Length (mi)			
Truck & Bus %			
RV %			
E_T			
E_R			
f_{HV}			
f_P			
GP to GP Flow (pcph)			

Location	25	26	27

Key

<> Express Lane (HOV)

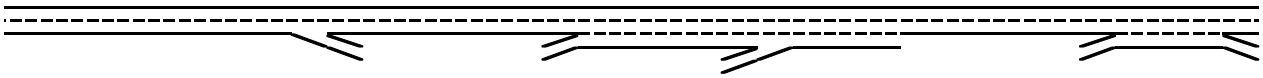
No Trucks

Name	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segment Operations			
Weave Type			
Weave Length			
Segment Lanes			
Weave Lanes			
Weave Flow (pcph)			
Non-Weave Flow			
Segment Flow			
Max Weave Length			
Length Check			
Ideal Weave Capacity			
f_{HV}			
f_P			
Capacity Condition 1			
Capacity Condition 2			
Weave v/c ratio			
Interchange Density			
Lane Changes On to ML			
Lane Changes ML to Off			
Lane Changes On to Off			
Min Lane Change Rate			
Weave LC Rate			
Non-Weave LC Rate 1			
Non-Weave LC Rate 2			
Non-Weave LC Rate 3			
Segment LC Rate			
Weave Intensity Factor			
Weave Speed			
Non-Weave Speed			
Segment Speed			
Weave Density			
Weave LOS			
Summarize Segment Operations			
Segment v/c ratio	0.28	0.70	0.68
Segment Density	10.1	26.6	25.0
Segment LOS	A	C	C
Over Capacity			

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

Existing Plus Project Conditions
Time Period: 2014 AM Peak Hour

Location	1	2	3	4	5	6	7



Key

<> Express Lane (HOV)

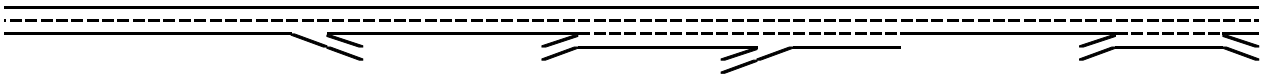
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off
Define Freeway Segment							
Type	Basic	Diverge	Basic	Basic	Merge	Basic	Weave
Length (ft)	8,330	1,500	1,800	1,000	1,500	870	3,050
Accel Length					720		
Decel Length		150					
Mainline Volume	870	870	710	710	1,010	1,210	1,210
On Ramp Volume				300	200		650
Off Ramp Volume		160					270
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (GP)							
GP Volume (vph)	870	870	710	1,010	1,210	1,210	1,860
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	2	2	2	3	3	2	3
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	976	976	797	1,133	1,358	1,358	2,087
GP Flow (pcphpl)	488	488	398	378	453	679	696
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes							
v/c ratio	0.21	0.21	0.17	0.16	0.19	0.29	0.30
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	7.5	7.5	6.1	5.8	7.0	10.4	10.7
LOS	A	A	A	A	A	A	A
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		976		792	1,127		1,349
GP_{IN} Cap (pcph)		4,700		4,700	7,050		4,700
GP_{IN} v/c ratio		0.21		0.17	0.16		0.29
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		805			1,358		1,785
GP_{OUT} Cap (pcph)		4,700			7,050		4,700
GP_{OUT} v/c ratio		0.17			0.19		0.38

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

Existing Plus Project Conditions
Time Period: 2014 AM Peak Hour

Location	1	2	3	4	5	6	7



Key

<> Express Lane (HOV)

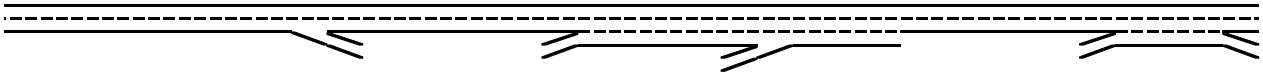
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off
Calculate Flow Rate in Express Lanes (EL)							
EL Volume (vph)							
PHF							
Express Lanes	0	0	0	0	0	0	0
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T	1.5	1.5	1.5	1.5	1.5		1.5
E_R	1.2	1.2	1.2	1.2	1.2		1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990		0.990
f_P							
EL Flow (pcph)							
EL Flow (pcphpl)							
Calculate Speed in Express Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calc'd FFS							
Measured FFS							
FFS							
Calculate Operations in Express Lanes							
EL_{IN} v/c ratio							
Calculate On Ramp Flow Rate							
On Volume (vph)				300	200		650
PHF				0.881	0.872		0.894
Total Lanes				1	1		1
Terrain				Level	Level		Level
Grade %				0.0%	0.0%		0.0%
Grade Length (mi)				0.00	0.00		0.00
Truck & Bus %				0.3%	1.6%		3.0%
RV %				0.0%	0.0%		0.0%
E_T				1.5	1.5		1.5
E_R				1.2	1.2		1.2
f_{HV}				0.999	0.992		0.985
f_P				1.00	1.00		1.00
On Flow (pcph)				341	231		738
On Flow (pcphpl)				341	231		738
Calculate On Ramp Roadway Operations							
On Ramp Type				Right	Right		Right
On Ramp Speed (mph)				25	45		45
On Ramp Cap (pcph)				1,900	2,100		2,100
On Ramp v/c ratio				0.18	0.11		0.35

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

Existing Plus Project Conditions
Time Period: 2014 AM Peak Hour

Location	1	2	3	4	5	6	7



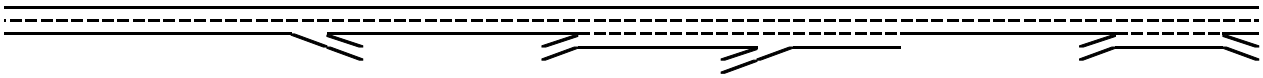
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off
Calculate Off Ramp Flow Rate							
Off Volume (vph)		160					270
PHF		0.95					0.906
Total Lanes		1					1
Terrain		Level					Level
Grade %		0.0%					0.0%
Grade Length (mi)		0.00					0.00
Truck & Bus %		3.0%					3.0%
RV %		0.0%					0.0%
E_T		1.5					1.5
E_R		1.2					1.2
f_{HV}		0.985					0.985
f_P		1.00					1.00
Off Flow (pcph)		171					302
Off Flow (pcphpl)		171					302
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right					Right
Off Ramp Speed		45					45
Off Ramp Cap (pcph)		2,100					2,100
Off Ramp v/c ratio		0.08					0.14
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps							
Up Type					On		
Up Distance					1,000		
Up Flow (pcph)					341		
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)					1,127		
Up Ramp L_{EQ}					562		
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)					0.598		
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}					0.598		
v_{12} (pcph)					673		
v_3 (pcph)					453		
v_{34} (pcph)							
v_{12a} (pcph)					673		
v_{R12a} (pcph)					905		
Merge Speed Index					0.27		
Merge Area Speed					58.9		
Outer Lanes Volume					453		
Outer Lanes Speed					65.0		
Segment Speed					60.8		
Merge v/c ratio					0.20		
Merge Density					7.9		
Merge LOS					A		

Location	1	2	3	4	5	6	7



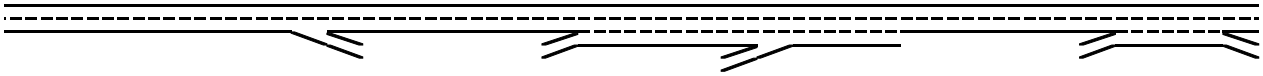
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)		976					
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)		0.728					
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		1.000					
v_{12} (pcph)		976					
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		976					
Diverge Speed Index		0.31					
Diverge Area Speed		57.8					
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed		57.8					
Diverge v/c ratio		0.22					
Diverge Density		11.3					
Diverge LOS		B					
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments							
On to Off Volume (vph)							65
PHF							0.95
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							3.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.985
f_P							1.00
On to Off Flow (pcph)							69
Calculate On Ramp to Mainline Flow Rate for Weave Segments							
On to ML Volume (vph)							585
PHF							0.95
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							3.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.985
f_P							1.00
On to ML Flow (pcph)							625

Location	1	2	3	4	5	6	7



Key

<> Express Lane (HOV)

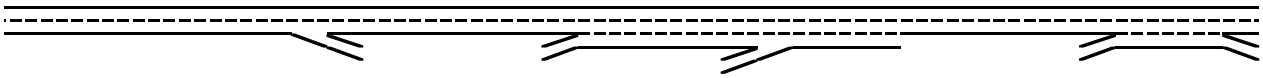
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off
Calculate Mainline to Off Ramp Flow Rate for Weave Segments							
ML to Off Volume (vph)							205
PHF							0.85
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							2.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.990
f_P							1.00
ML to Off Flow (pcph)							244
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments							
GP to GP Volume (vph)							1,005
PHF							0.85
Terrain							Level
Grade %							0.0%
Grade Length (mi)							0.00
Truck & Bus %							2.0%
RV %							0.0%
E_T							1.5
E_R							1.2
f_{HV}							0.990
f_P							1.00
GP to GP Flow (pcph)							1,194

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

Existing Plus Project Conditions
Time Period: 2014 AM Peak Hour

Location	1	2	3	4	5	6	7



Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd	Lincoln Blvd On Ramp to Twelve Bridges Off
Calculate Weave Segment Operations							
Weave Type							One-sided
Weave Length							2,050
Segment Lanes							3
Weave Lanes							2
Weave Flow (pcph)							869
Non-Weave Flow							1,264
Segment Flow							2,132
Max Weave Length							6,764
Length Check							OK
Ideal Weave Capacity							1,989
f_{HV}							0.989
f_P							0.996
Capacity Condition 1							5,874
Capacity Condition 2							5,799
Weave v/c ratio							0.36
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.21	0.22	0.17	0.16	0.20	0.29	0.36
Segment Density	7.5	11.3	6.1	5.8	7.9	10.4	
Segment LOS	A	B	A	A	A	A	
Over Capacity							

Location	8	9	10	11	12	13	14

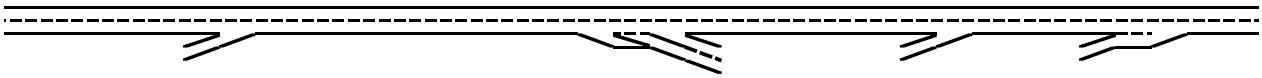
Key

<> Express Lane (HOV)

No Trucks

Name	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp
Define Freeway Segmer							
Type	Basic	Merge	Basic	Diverge	Basic	Merge	Merge
Length (ft)	1,120	1,500	7,650	1,500	2,000	1,500	1,500
Accel Length		450				500	1,450
Decel Length				1,500			
Mainline Volume	1,590	1,590	2,010	2,010	1,690	1,690	2,370
On Ramp Volume		420				680	470
Off Ramp Volume				320			
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in							
GP Volume (vph)	1,590	2,010	2,010	2,010	1,690	2,370	2,840
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	2	2	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	1,784	2,256	2,256	2,256	1,897	2,660	3,187
GP Flow (pcphpl)	892	1,128	1,128	1,128	948	1,330	1,594
Calculate Speed in Gen							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in							
v/c ratio	0.38	0.48	0.48	0.48	0.40	0.57	0.68
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	64.5
Density (pcphpl)	13.7	17.4	17.4	17.4	14.6	20.5	24.7
LOS	B	B	B	B	B	C	C
Calculate Operations fo							
GP_{IN} Vol (pcph)		1,729		2,256		1,714	2,597
GP_{IN} Cap (pcph)		4,700		4,700		4,700	4,700
GP_{IN} v/c ratio		0.37		0.48		0.36	0.55
Calculate Operations fo							
GP_{OUT} Vol (pcph)		2,256		1,895		2,660	3,187
GP_{OUT} Cap (pcph)		4,700		4,700		4,700	4,700
GP_{OUT} v/c ratio		0.48		0.40		0.57	0.68

Location	8	9	10	11	12	13	14



Key

<> Express Lane (HOV)

No Trucks

Name	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp
Calculate Flow Rate in							
EL Volume (vph)							
PHF							
Express Lanes	0	0	0	0	0	0	0
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990		0.990	0.990	0.990	0.990
f_P							
EL Flow (pcph)							
EL Flow (pcphpl)							
Calculate Speed in Exp							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calc'd FFS							
Measured FFS							
FFS							
Calculate Operations in							
EL_{IN} v/c ratio							
Calculate On Ramp Flo							
On Volume (vph)		420				680	470
PHF		0.81				0.73	0.808
Total Lanes		1				1	1
Terrain		Level				Level	Level
Grade %		0.0%				0.0%	0.0%
Grade Length (mi)		0.00				0.00	0.00
Truck & Bus %		3.0%				3.0%	3.0%
RV %		0.0%				0.0%	0.0%
E_T		1.5				1.5	1.5
E_R		1.2				1.2	1.2
f_{HV}		0.985				0.985	0.985
f_P		1.00				1.00	1.00
On Flow (pcph)		526				945	590
On Flow (pcphpl)		526				945	590
Calculate On Ramp Roa							
On Ramp Type		Right				Right	Right
On Ramp Speed (mph)		25				25	45
On Ramp Cap (pcph)		1,900				1,900	2,100
On Ramp v/c ratio		0.28				0.50	0.28

Location	8	9	10	11	12	13	14

Key

<> Express Lane (HOV)

No Trucks

Name	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp
Calculate Off Ramp Flo							
Off Volume (vph)				320			
PHF				0.9			
Total Lanes				2			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				3.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.985			
f_P				1.00			
Off Flow (pcph)				361			
Off Flow (pcphpl)				180			
Calculate Off Ramp Roa							
Off Ramp Type				Right			
Off Ramp Speed				45			
Off Ramp Cap (pcph)				4,200			
Off Ramp v/c ratio				0.09			
Determine Adjacent Ra							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influen							
Effective v_P (pcph)		1,729				1,714	2,597
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)		0.590				0.592	0.618
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}		1.000				1.000	1.000
v_{12} (pcph)		1,729				1,714	2,597
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		1,729				1,714	2,597
v_{R12a} (pcph)		2,256				2,660	3,187
Merge Speed Index		0.34				0.35	0.28
Merge Area Speed		57.3				56.9	58.4
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed		57.3				56.9	58.4
Merge v/c ratio		0.49				0.58	0.69
Merge Density		20.0				22.7	21.0
Merge LOS		C				C	C

Location	8	9	10	11	12	13	14

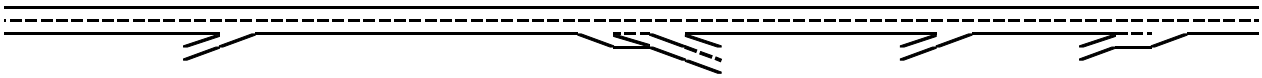
Key

<> Express Lane (HOV)

No Trucks

Name	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp
Calculate Diverge Influe							
Effective v_P (pcph)				2,256			
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)				0.687			
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}				1.000			
v_{12} (pcph)				2,256			
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)				2,256			
Diverge Speed Index				0.33			
Diverge Area Speed				57.4			
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed				57.4			
Diverge v/c ratio				0.51			
Diverge Density				10.2			
Diverge LOS				B			
Calculate On Ramp to C							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to M							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	8	9	10	11	12	13	14



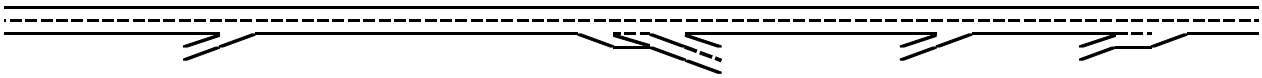
Key

<> Express Lane (HOV)

No Trucks

Name	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp
Calculate Mainline to O							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purp							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Location	8	9	10	11	12	13	14



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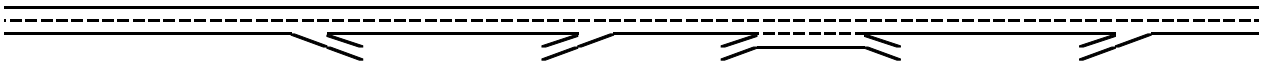
<> Express Lane (HOV)

No Trucks

Name	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Susnet Blvd	Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp
Calculate Weave Segme							
Weave Type							
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Op							
Segment v/c ratio	0.38	0.49	0.48	0.51	0.40	0.58	0.69
Segment Density	13.7	20.0	17.4	10.2	14.6	22.7	21.0
Segment LOS	B	C	B	B	B	C	C
Over Capacity							

Location	15	16	17	18	19	20	21



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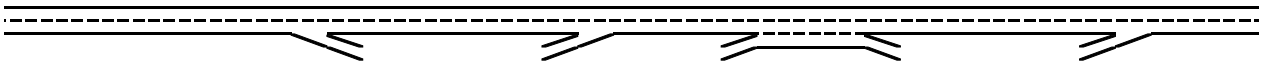
<> Express Lane (HOV)

No Trucks

Name	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Define Freeway Segmer							
Type	Basic	Diverge	Basic	Merge	Weave	Basic	Merge
Length (ft)	770	1,500	1,680	1,000	3,140	1,610	1,180
Accel Length				380			550
Decel Length		200					
Mainline Volume	2,840	2,840	2,340	2,340	2,700	2,970	2,970
On Ramp Volume				360	960		270
Off Ramp Volume		500			690		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in							
GP Volume (vph)	2,840	2,840	2,340	2,700	3,660	2,970	3,240
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	2	2	2	2	3	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	4.2%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.979	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,187	3,187	2,626	3,030	4,152	3,333	3,636
GP Flow (pcphpl)	1,594	1,594	1,313	1,515	1,384	1,667	1,818
Calculate Speed in Gen							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in							
v/c ratio	0.68	0.68	0.56	0.64	0.59	0.71	0.77
Speed (mph)	64.5	64.5	65.0	64.8	65.0	64.0	62.5
Density (pcphpl)	24.7	24.7	20.2	23.4	21.3	26.0	29.1
LOS	C	C	C	C	C	D	D
Calculate Operations fo							
GP_{IN} Vol (pcph)		3,187		2,624	3,107		3,349
GP_{IN} Cap (pcph)		4,700		4,700	4,700		4,700
GP_{IN} v/c ratio		0.68		0.56	0.66		0.71
Calculate Operations fo							
GP_{OUT} Vol (pcph)		2,635		3,030	3,292		3,636
GP_{OUT} Cap (pcph)		4,700		4,700	4,700		4,700
GP_{OUT} v/c ratio		0.56		0.64	0.70		0.77

Location	15	16	17	18	19	20	21



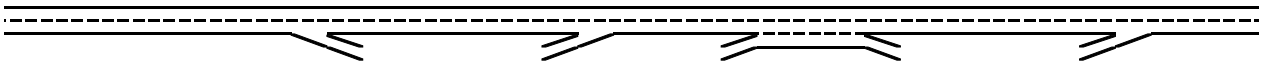
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Flow Rate in							
EL Volume (vph)							
PHF							
Express Lanes	0	0	0	0	0	0	0
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T		1.5	1.5	1.5	1.5	1.5	1.5
E_R		1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}		0.990	0.990	0.990	0.990	0.990	0.990
f_P							
EL Flow (pcph)							
EL Flow (pcphpl)							
Calculate Speed in Exp							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calc'd FFS							
Measured FFS							
FFS							
Calculate Operations in							
EL_{IN} v/c ratio							
Calculate On Ramp Flo							
On Volume (vph)				360	960		270
PHF				0.895	0.94		0.95
Total Lanes				1	1		1
Terrain				Level	Level		Level
Grade %				0.0%	0.0%		0.0%
Grade Length (mi)				0.00	0.00		0.00
Truck & Bus %				2.0%	4.6%		2.0%
RV %				0.0%	0.0%		0.0%
E_T				1.5	1.5		1.5
E_R				1.2	1.2		1.2
f_{HV}				0.990	0.978		0.990
f_P				1.00	1.00		1.00
On Flow (pcph)				406	1,045		287
On Flow (pcphpl)				406	1,045		287
Calculate On Ramp Roa							
On Ramp Type				Right	Right		Right
On Ramp Speed (mph)				25	45		25
On Ramp Cap (pcph)				1,900	2,100		1,900
On Ramp v/c ratio				0.21	0.50		0.15

Location	15	16	17	18	19	20	21



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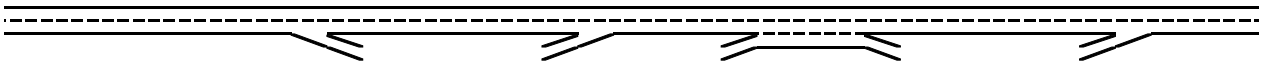
<> Express Lane (HOV)

No Trucks

Name	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Off Ramp Flo							
Off Volume (vph)		500			690		
PHF		0.92			0.814		
Total Lanes		1			1		
Terrain		Level			Level		
Grade %		0.0%			0.0%		
Grade Length (mi)		0.00			0.00		
Truck & Bus %		3.0%			3.0%		
RV %		0.0%			0.0%		
E_T		1.5			1.5		
E_R		1.2			1.2		
f_{HV}		0.985			0.985		
f_P		1.00			1.00		
Off Flow (pcph)		552			860		
Off Flow (pcphpl)		552			860		
Calculate Off Ramp Roa							
Off Ramp Type		Right			Right		
Off Ramp Speed		45			45		
Off Ramp Cap (pcph)		2,100			2,100		
Off Ramp v/c ratio		0.26			0.41		
Determine Adjacent Ra							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influen							
Effective v_P (pcph)				2,624			3,349
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)				0.588			0.593
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}				1.000			1.000
v_{12} (pcph)				2,624			3,349
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)				2,624			3,349
v_{R12a} (pcph)				3,030			3,636
Merge Speed Index				0.38			0.44
Merge Area Speed				56.2			54.8
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed				56.2			54.8
Merge v/c ratio				0.66			0.79
Merge Density				26.5			30.3
Merge LOS				C			D

Location	15	16	17	18	19	20	21



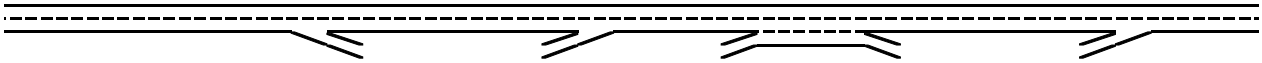
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Diverge Influe							
Effective v_P (pcph)		3,187					
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)		0.655					
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		1.000					
v_{12} (pcph)		3,187					
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)		3,187					
Diverge Speed Index		0.35					
Diverge Area Speed		57.0					
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed		57.0					
Diverge v/c ratio		0.72					
Diverge Density		29.9					
Diverge LOS		D					
Calculate On Ramp to C							
On to Off Volume (vph)					96		
PHF					0.95		
Terrain					Level		
Grade %					0.0%		
Grade Length (mi)					0.00		
Truck & Bus %					3.0%		
RV %					0.0%		
E_T					1.5		
E_R					1.2		
f_{HV}					0.985		
f_P					1.00		
On to Off Flow (pcph)					103		
Calculate On Ramp to M							
On to ML Volume (vph)					864		
PHF					0.95		
Terrain					Level		
Grade %					0.0%		
Grade Length (mi)					0.00		
Truck & Bus %					3.0%		
RV %					0.0%		
E_T					1.5		
E_R					1.2		
f_{HV}					0.985		
f_P					1.00		
On to ML Flow (pcph)					923		

Location	15	16	17	18	19	20	21



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<> Express Lane (HOV)

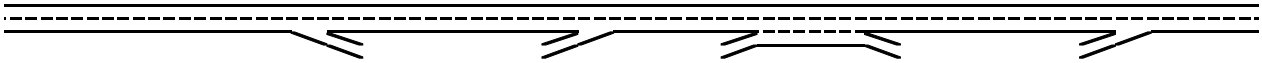
No Trucks

Name	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Mainline to O							
ML to Off Volume (vph)					594		
PHF					0.95		
Terrain					Level		
Grade %					0.0%		
Grade Length (mi)					0.00		
Truck & Bus %					6.0%		
RV %					0.0%		
E_T					1.5		
E_R					1.2		
f_{HV}					0.971		
f_P					1.00		
ML to Off Flow (pcph)					644		
Calculate General Purp							
GP to GP Volume (vph)					2,106		
PHF					0.95		
Terrain					Level		
Grade %					0.0%		
Grade Length (mi)					0.00		
Truck & Bus %					6.0%		
RV %					0.0%		
E_T					1.5		
E_R					1.2		
f_{HV}					0.971		
f_P					1.00		
GP to GP Flow (pcph)					2,283		

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

Existing Plus Project Conditions
Time Period: 2014 AM Peak Hour

Location	15	16	17	18	19	20	21



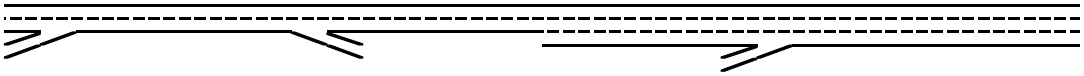
Key

<> Express Lane (HOV)

No Trucks

Name	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Weave Segme							
Weave Type					One-sided		
Weave Length					2,140		
Segment Lanes					3		
Weave Lanes					2		
Weave Flow (pcph)					1,567		
Non-Weave Flow					2,386		
Segment Flow					3,953		
Max Weave Length					6,641		
Length Check					OK		
Ideal Weave Capacity					2,006		
f_{HV}					0.975		
f_P					0.997		
Capacity Condition 1					5,844		
Capacity Condition 2					5,880		
Weave v/c ratio					0.66		
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment O							
Segment v/c ratio	0.68	0.72	0.56	0.66	0.66	0.71	0.79
Segment Density	24.7	29.9	20.2	26.5		26.0	30.3
Segment LOS	C	D	C	C		D	D
Over Capacity							

Location	22	23	24	25	26	27



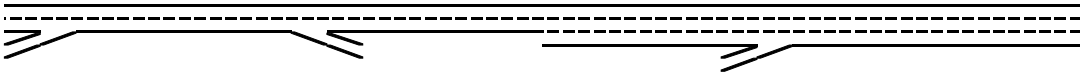
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segme						
Type	Merge	Diverge	Basic	Basic	Merge	Basic
Length (ft)	1,500	1,500	1,120	1,950	1,500	750
Accel Length	580				590	
Decel Length		140				
Mainline Volume	3,240	3,790	3,120	3,120	3,120	4,180
On Ramp Volume	550				1,060	
Off Ramp Volume		670				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in						
GP Volume (vph)	3,790	3,790	3,120	3,120	4,180	4,180
PHF	0.9	0.9	0.9	0.9	0.9	0.9
GP Lanes	2	2	2	3	3	3
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	1.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	2.00	1.00	1.00
GP Flow (pcph)	4,253	4,253	3,501	1,751	4,691	4,691
GP Flow (pcphpl)	2,127	2,127	1,751	584	1,564	1,564
Calculate Speed in Gen						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in						
v/c ratio	0.90	0.90	0.74	0.25	0.67	0.67
Speed (mph)	57.5	57.5	63.3	65.0	64.6	64.6
Density (pcphpl)	37.0	37.0	27.7	9.0	24.2	24.2
LOS	E	E	D	A	C	C
Calculate Operations fo						
GP_{IN} Vol (pcph)	3,668	4,253			3,474	
GP_{IN} Cap (pcph)	4,700	4,700			7,050	
GP_{IN} v/c ratio	0.78	0.90			0.49	
Calculate Operations fo						
GP_{OUT} Vol (pcph)	4,253	3,418			4,691	
GP_{OUT} Cap (pcph)	4,700	4,700			7,050	
GP_{OUT} v/c ratio	0.90	0.73			0.67	

Location	22	23	24	25	26	27



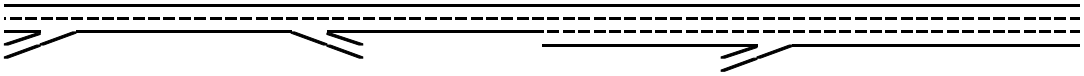
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5		1.5	1.5
E_R	1.2	1.2	1.2		1.2	1.2
f_{HV}	0.990	0.990	0.990		0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Exp						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in						
EL_{IN} v/c ratio						
Calculate On Ramp Flo						
On Volume (vph)	550				1,060	
PHF	0.95				0.88	
Total Lanes	1				1	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	2.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.990				0.990	
f_P	1.00				1.00	
On Flow (pcph)	585				1,217	
On Flow (pcphpl)	585				1,217	
Calculate On Ramp Roa						
On Ramp Type	Right				Right	
On Ramp Speed (mph)	45				45	
On Ramp Cap (pcph)	2,100				2,100	
On Ramp v/c ratio	0.28				0.58	

Location	22	23	24	25	26	27



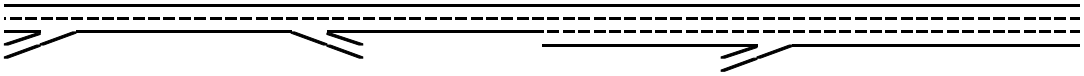
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flo						
Off Volume (vph)		670				
PHF		0.814				
Total Lanes		1				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
Off Flow (pcph)		835				
Off Flow (pcphpl)		835				
Calculate Off Ramp Roa						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		2,100				
Off Ramp v/c ratio		0.40				
Determine Adjacent Ra						
Up Type					No	
Up Distance						
Up Flow (pcph)						
Down Type					No	
Down Distance						
Down Flow (pcph)						
Calculate Merge Influen						
Effective v_P (pcph)	3,668				3,474	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)	0.594				0.594	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}	1.000				0.594	
v_{12} (pcph)	3,668				2,064	
v_3 (pcph)					1,410	
v_{34} (pcph)						
v_{12a} (pcph)	3,668				2,064	
v_{R12a} (pcph)	4,253				3,280	
Merge Speed Index	0.54				0.37	
Merge Area Speed	52.5				56.5	
Outer Lanes Volume					1,410	
Outer Lanes Speed					61.7	
Segment Speed	52.5				57.9	
Merge v/c ratio	0.92				0.71	
Merge Density	34.7				26.8	
Merge LOS	D				C	

Location	22	23	24	25	26	27



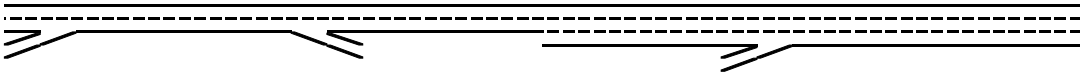
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influe						
Effective v_P (pcph)		4,253				
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)		0.615				
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}		1.000				
v_{12} (pcph)		4,253				
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)		4,253				
Diverge Speed Index		0.37				
Diverge Area Speed		56.4				
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed		56.4				
Diverge v/c ratio		0.97				
Diverge Density		39.6				
Diverge LOS		E				
Calculate On Ramp to C						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to M						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	22	23	24	25	26	27



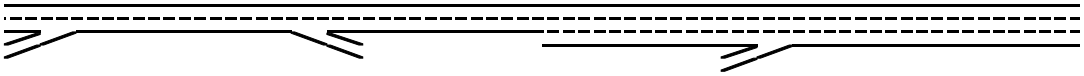
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to O						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purp						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Location	22	23	24	25	26	27



Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Direct On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segme						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Op						
Segment v/c ratio	0.92	0.97	0.74	0.25	0.71	0.67
Segment Density	34.7	39.6	27.7	9.0	26.8	24.2
Segment LOS	D	E	D	A	C	C
Over Capacity						

Leisch Method for Weaving Analysis

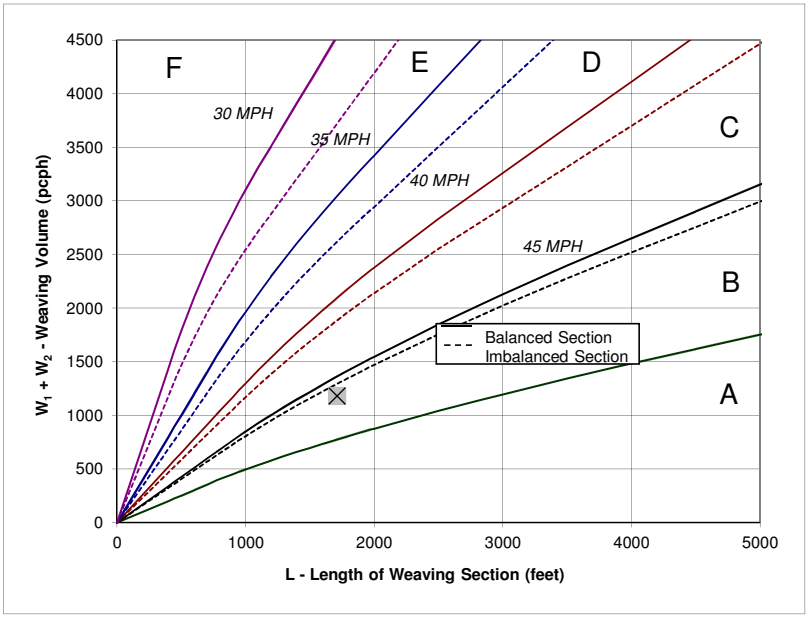
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

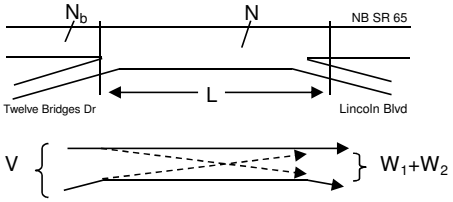
Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	1,670	Volume (vph)*	510	Volume (vph)*	660
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	1,687	Volume (pcph)	515	Volume (pcph)	667

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	E+P AM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **46.1**
4. Weaving Intensity Factor (k) **1.81**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **702**
6. Level of Service (LOS) **A**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

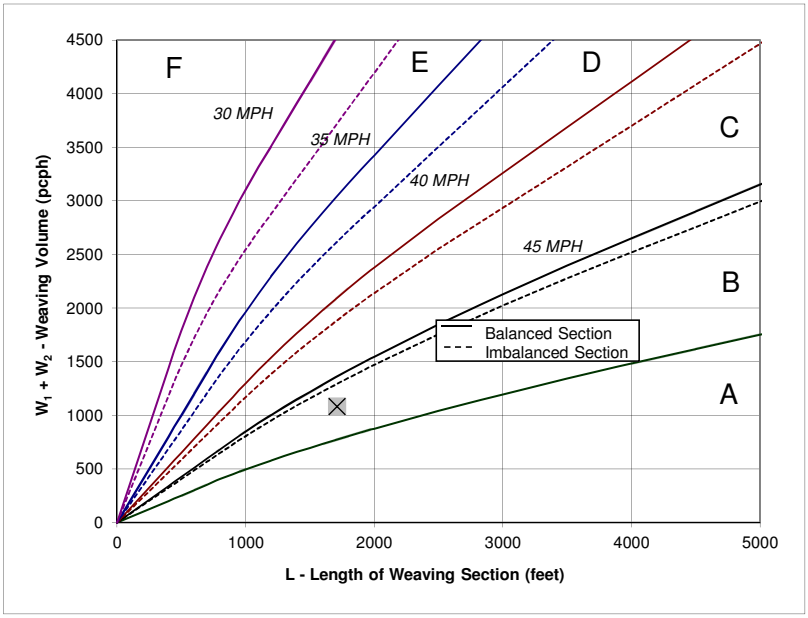
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	E+P PM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	2,910	Volume (vph)*	220	Volume (vph)*	850
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	2,968	Volume (pcph)	222	Volume (pcph)	859



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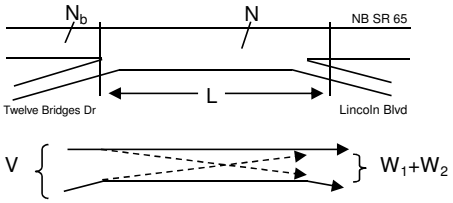


Capacity Analysis

1. Is the weaving section balanced (Y / N)? N
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 47.0
4. Weaving Intensity Factor (k) 1.73
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,043
6. Level of Service (LOS) C

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

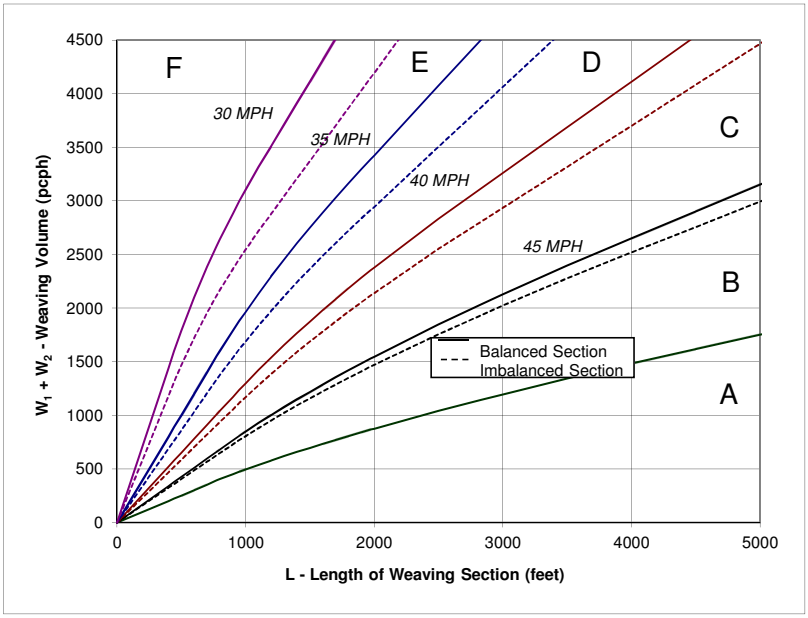
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,710

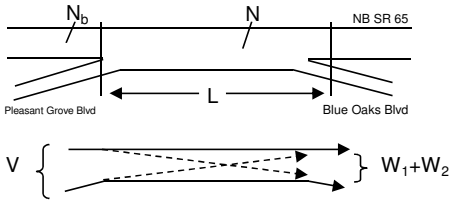
Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	E+P AM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,630	Volume (vph)*	260	Volume (vph)*	1,340
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,666	Volume (pcph)	263	Volume (pcph)	1,353



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **47.0**
4. Weaving Intensity Factor (k) **2.12**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,320**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

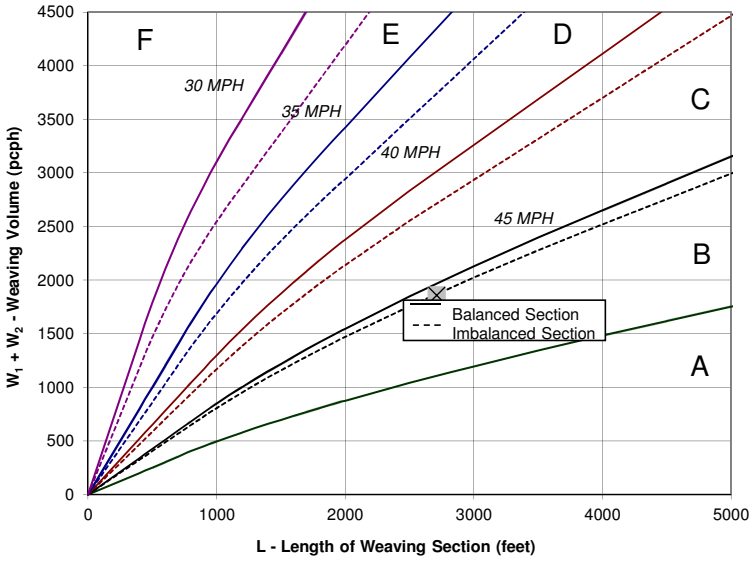
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,710

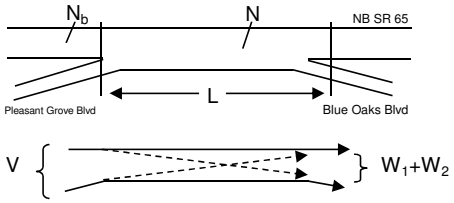
Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,080	Volume (vph)*	580	Volume (vph)*	1,260
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,121	Volume (pcph)	586	Volume (pcph)	1,273

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	E+P PM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**45 MPH** and **50 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	45.6
4. Weaving Intensity Factor (k)	1.88
5. Service Volume (SV, pcph) $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$	1,546
6. Level of Service (LOS)	D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

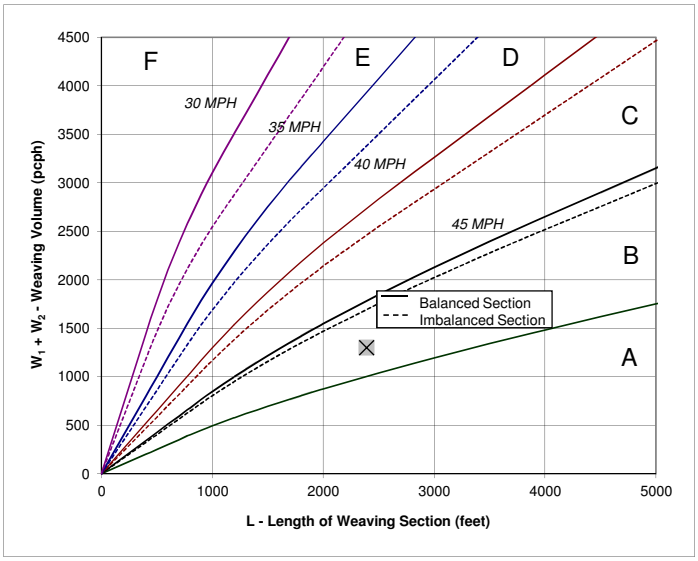
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,390

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,200	Volume (vph)*	820	Volume (vph)*	470
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,242	Volume (pcph)	828	Volume (pcph)	475

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	E+P AM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd



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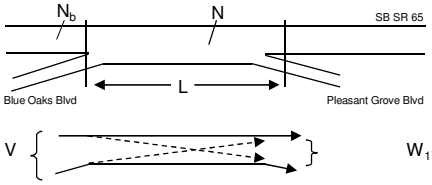


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	N
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**45 MPH** and **50 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	47.8
4. Weaving Intensity Factor (k)	1.55
5. Service Volume (SV, pcph) $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$	1,501
6. Level of Service (LOS)	D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

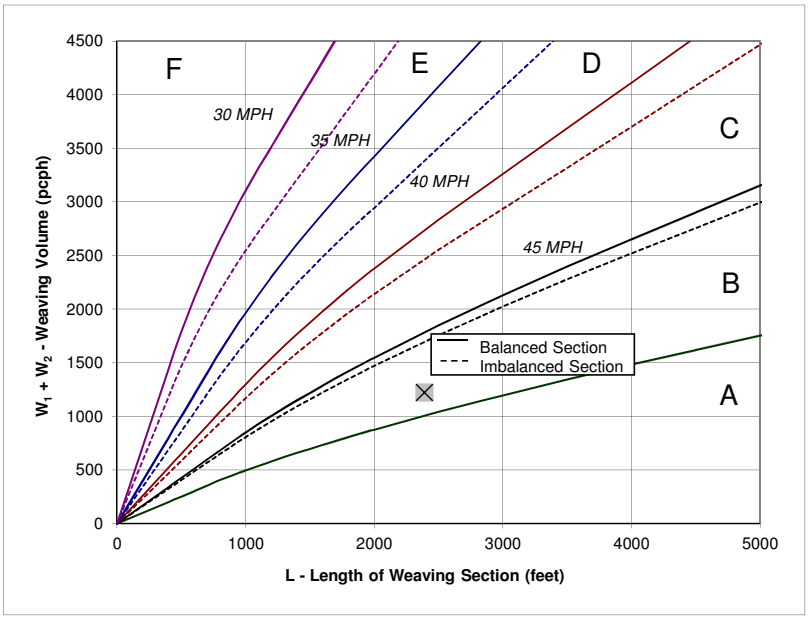
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,390

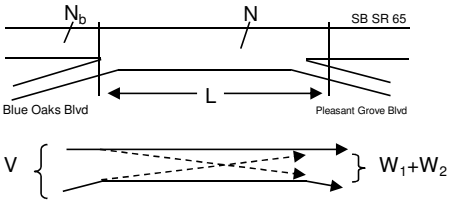
Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	E+P PM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,660	Volume (vph)*	740	Volume (vph)*	470
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,697	Volume (pcph)	747	Volume (pcph)	475



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 48.4
4. Weaving Intensity Factor (k) 1.45
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,304
6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

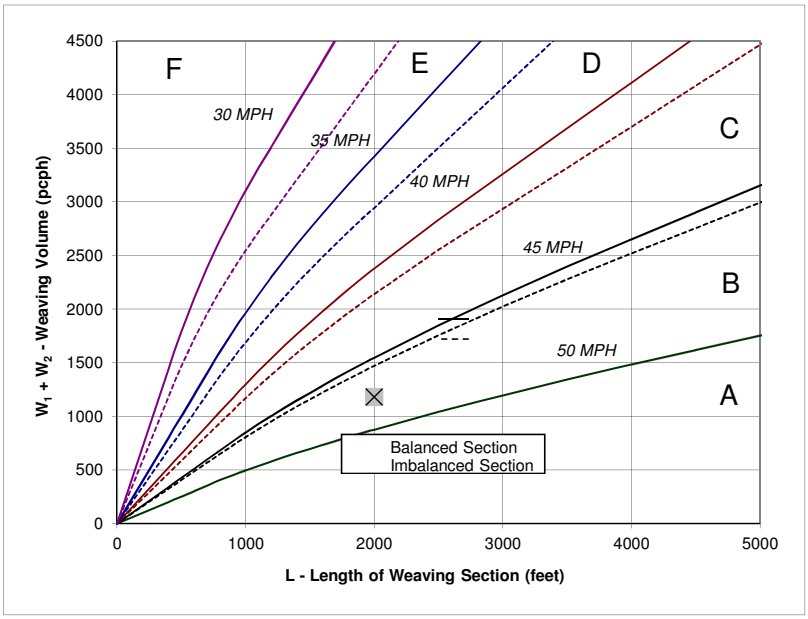
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

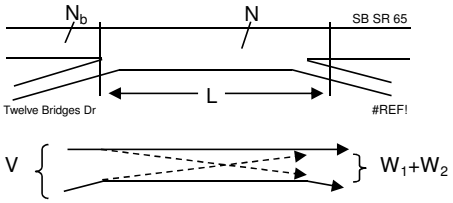
Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	E+P AM
Freeway	SB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,030	Volume (vph)*	770	Volume (vph)*	400
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,060	Volume (pcph)	778	Volume (pcph)	404



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **47.4**
4. Weaving Intensity Factor (k) **1.62**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,103**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

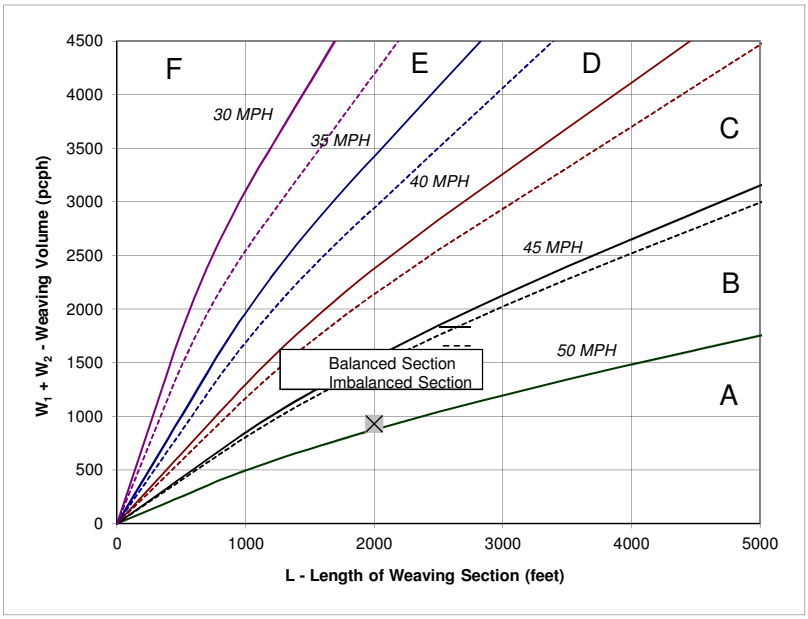
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	1,860	Volume (vph)*	650	Volume (vph)*	270
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	1,879	Volume (pcph)	657	Volume (pcph)	273

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	E+P PM
Freeway	SB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr



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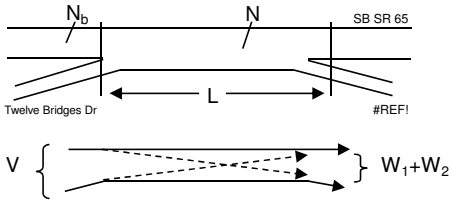


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	N
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**45 MPH** and **50 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	49.5
4. Weaving Intensity Factor (k)	1.27
5. Service Volume (SV, pcph) $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$	651
6. Level of Service (LOS)	A

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

APPENDIX C:

2035 CIP CONDITIONS TECHNICAL CALCULATIONS

2035 CIP NO PROJECT CONDITIONS

CITY OF ROSEVILLE INTERSECTIONS

N:\2011Projects\2923_AmorusoRanchEIR_TDM\Graphics\Draft\GIS\MXD_Nov2015\FigC3_StudyIntersection_Cumu.mxd

1 Existing Study Intersection

P1 Existing Study Intersection in Pedestrian Overlay Zone

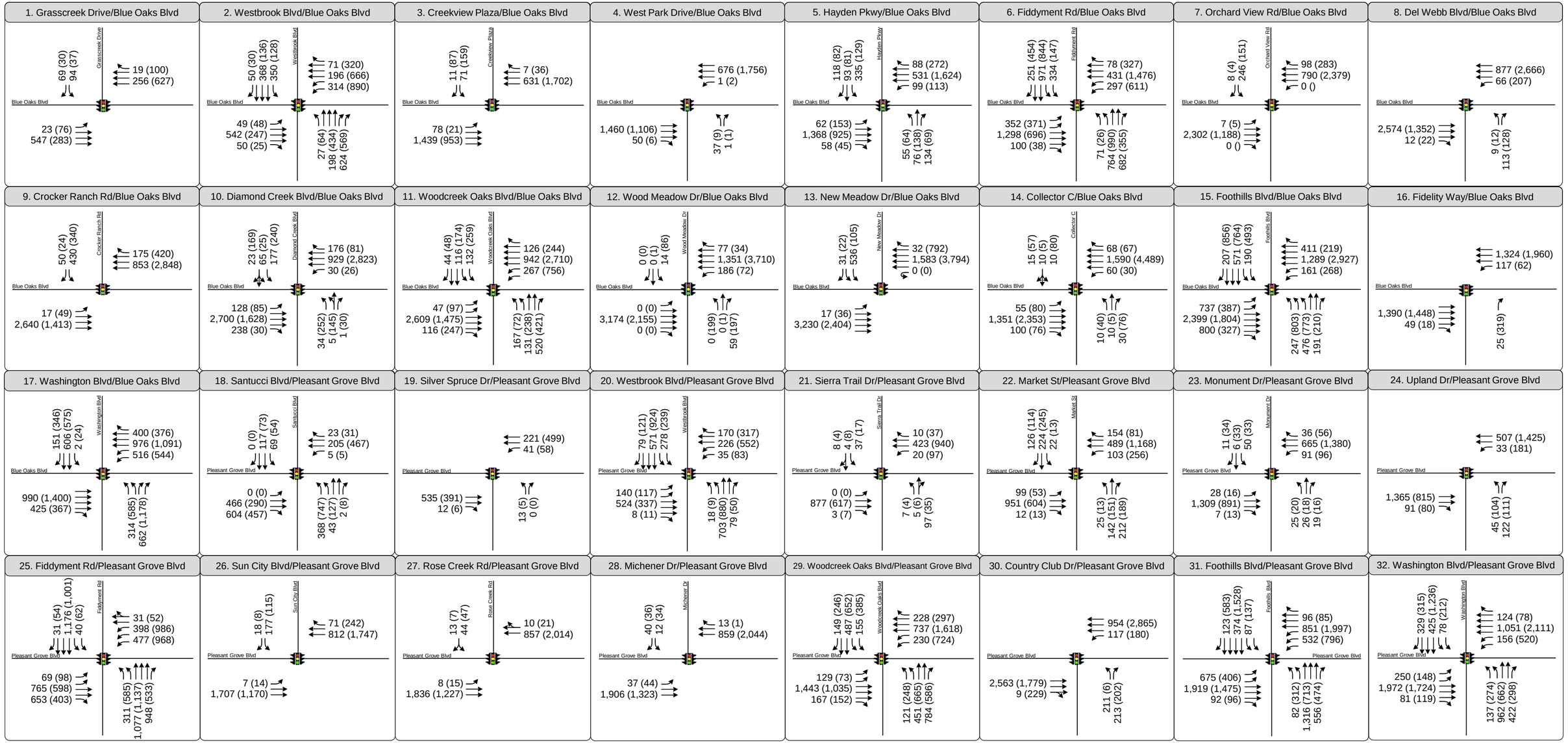
1 Future Study Intersections by 2035

N Not to Scale

Note: Additional intersections outside City of Roseville also being studied.

Figure C-3

Signalized Study Intersections in Roseville - 2035 Conditions



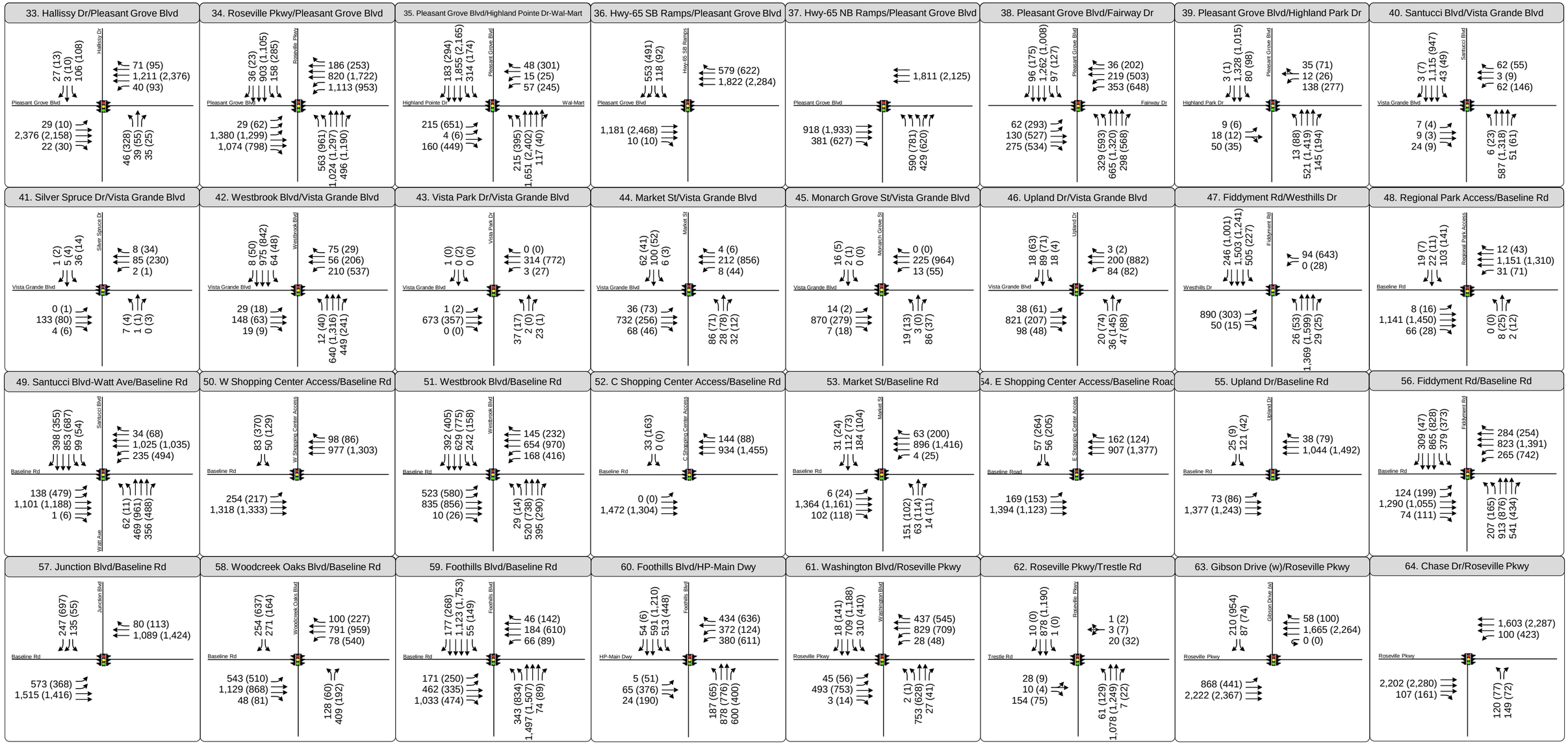
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure C-1a

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP No Project Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure C-1b

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP No Project Conditions

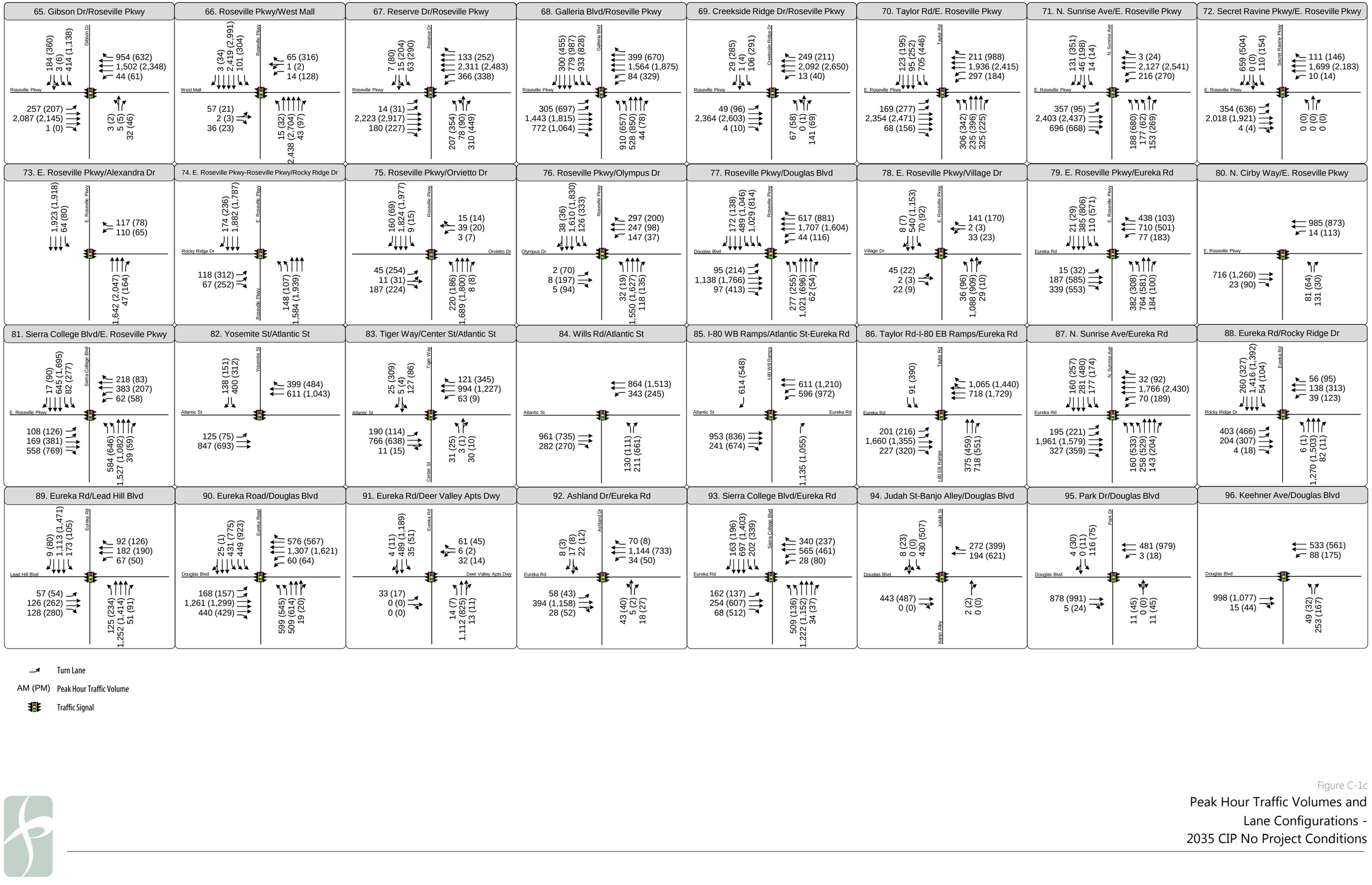


Figure C-1c

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP No Project Conditions

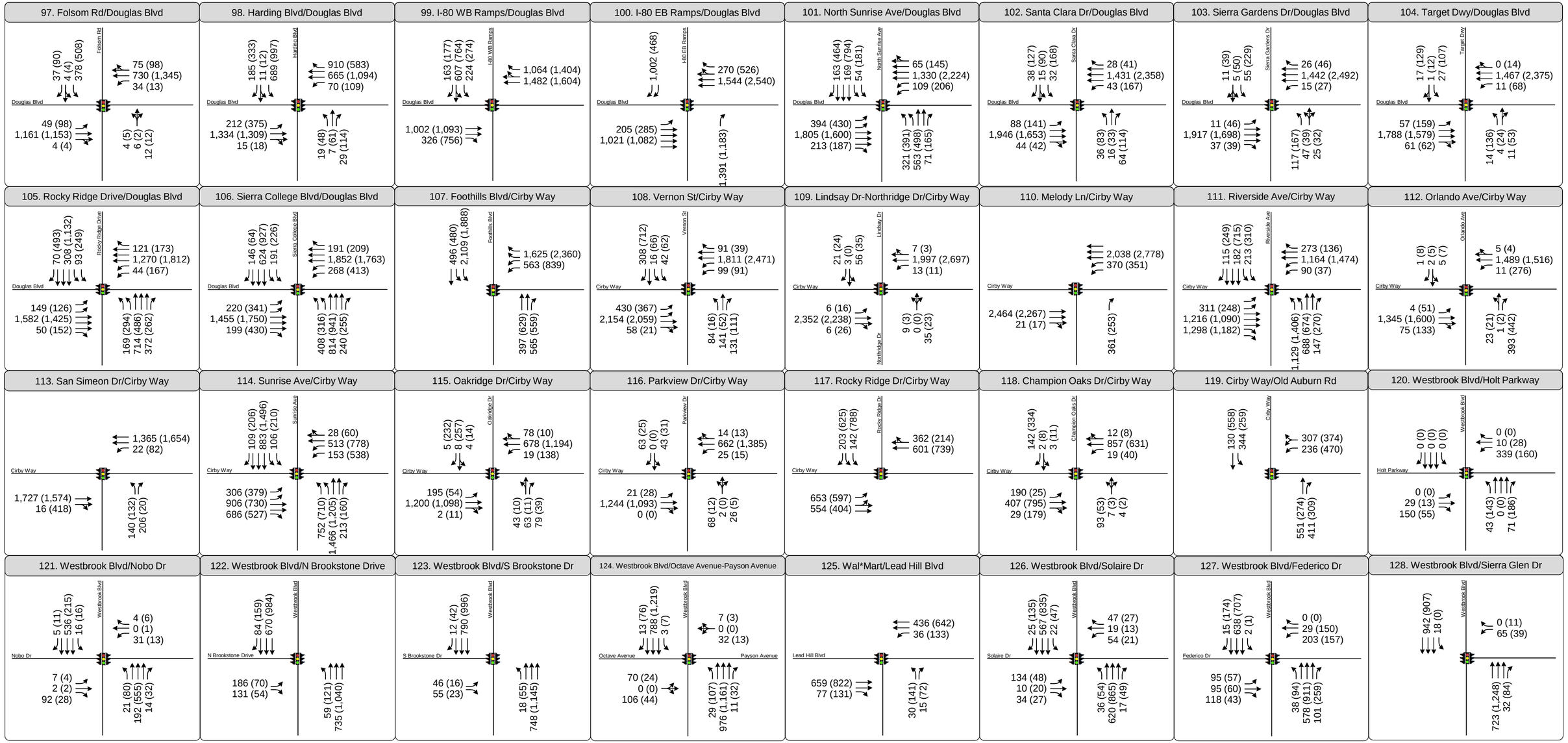


Figure C-1d

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP No Project Conditions

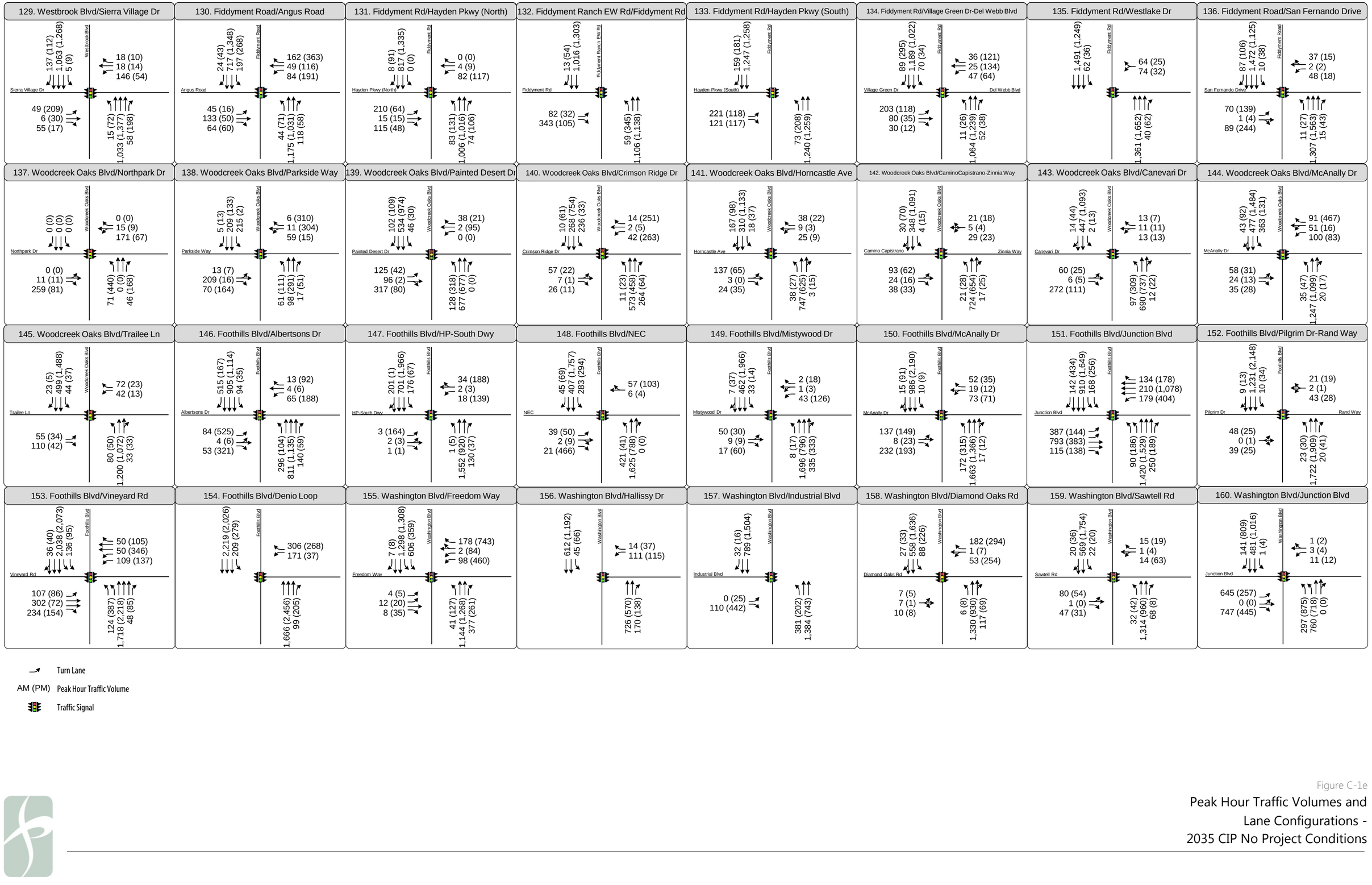
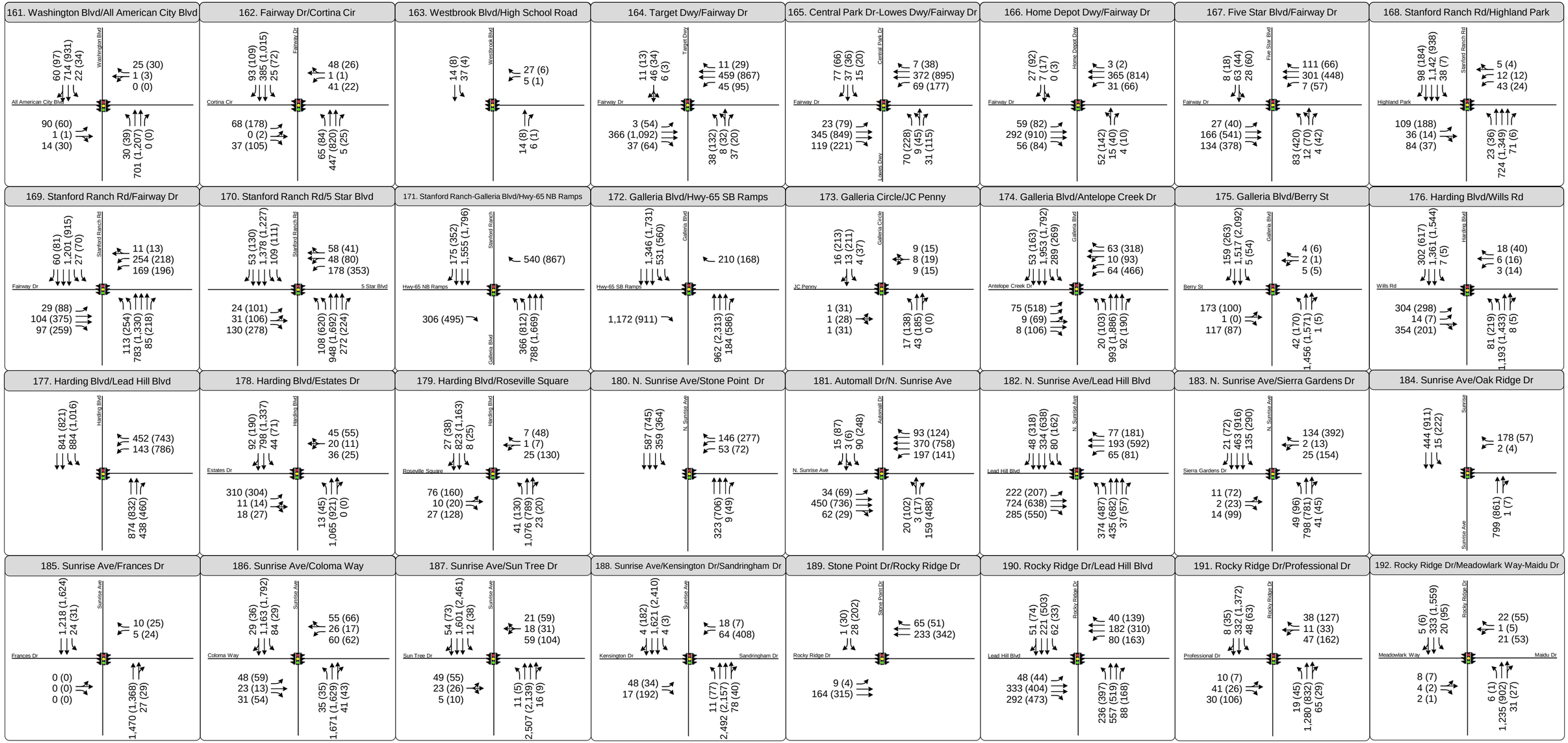


Figure C-1e

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP No Project Conditions



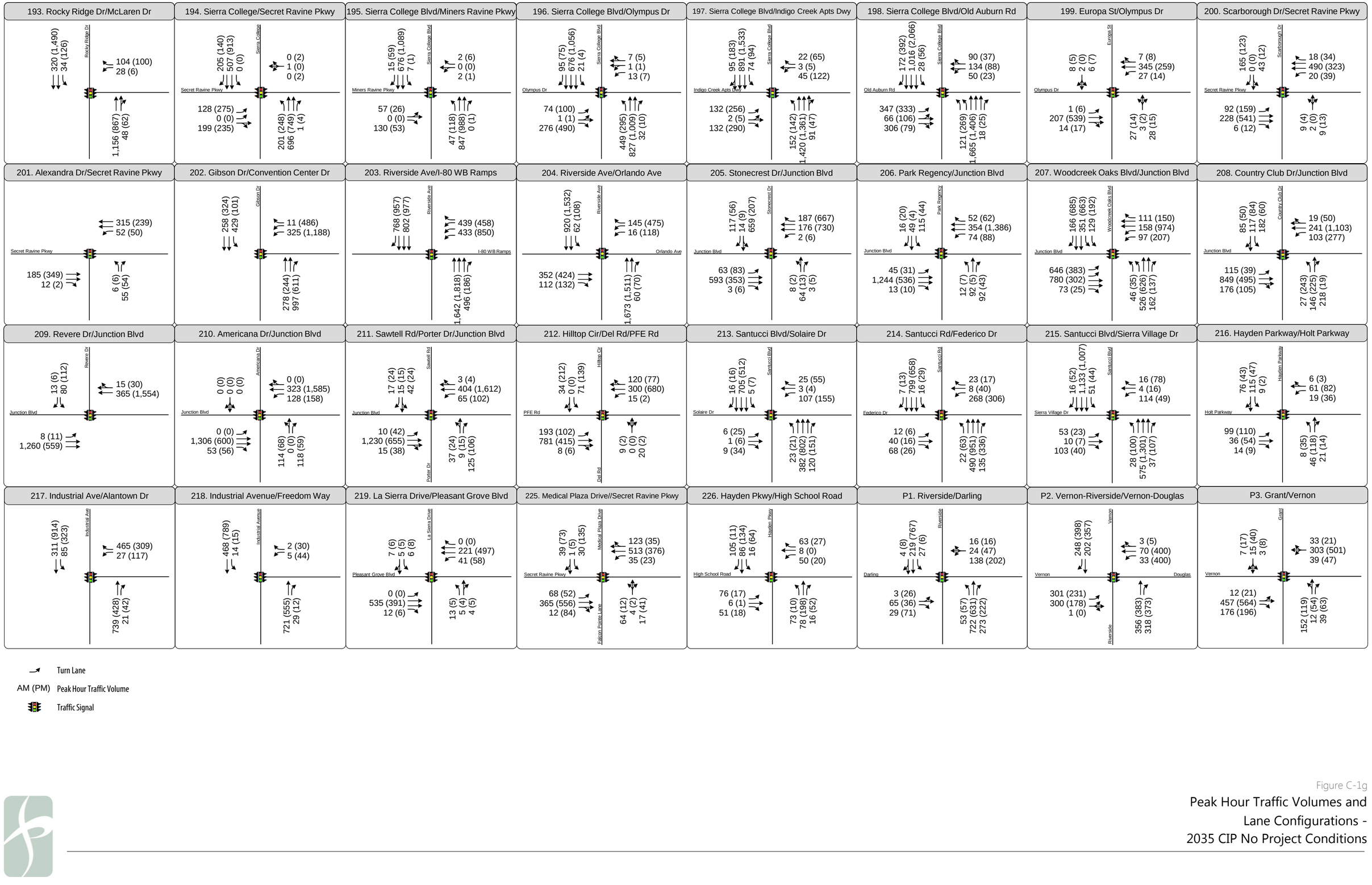
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure C-1f

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP No Project Conditions



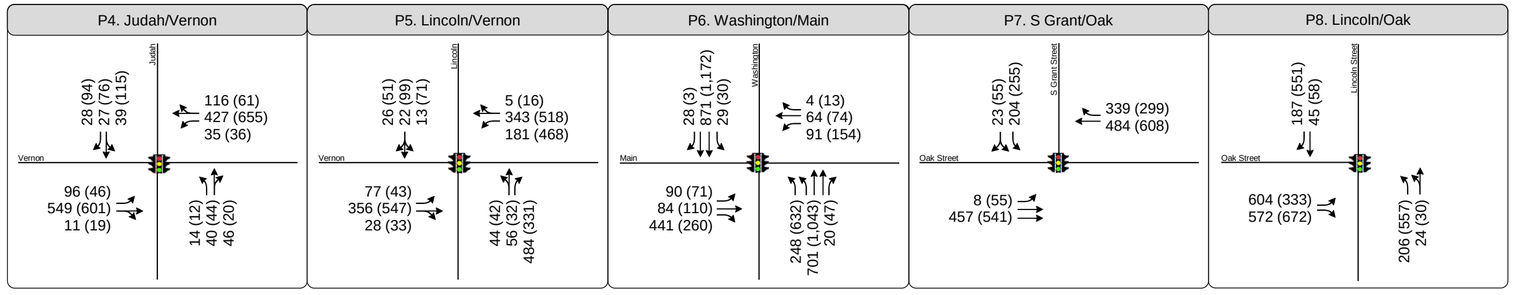
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure C-1g

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP No Project Conditions



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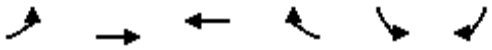
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure C-1h

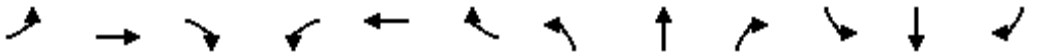
Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP No Project Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	23	547	256	19	94	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1548	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	576	269	20	99	73
RTOR Reduction (vph)	0	0	0	15	0	37
Lane Group Flow (vph)	24	576	269	5	99	36
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	16.2	11.5	11.5	23.6	23.6
Effective Green, g (s)	0.7	16.2	11.5	11.5	23.6	23.6
Actuated g/C Ratio	0.01	0.34	0.24	0.24	0.49	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	26	1723	1223	372	874	771
v/s Ratio Prot	0.01	c0.11	0.05		c0.06	
v/s Ratio Perm				0.00		0.02
v/c Ratio	0.92	0.33	0.22	0.01	0.11	0.05
Uniform Delay, d1	23.5	11.8	14.6	13.8	6.5	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	142.0	0.1	0.1	0.0	0.3	0.1
Delay (s)	165.5	11.9	14.6	13.8	6.8	6.4
Level of Service	F	B	B	B	A	A
Approach Delay (s)		18.0	14.6		6.6	
Approach LOS		B	B		A	

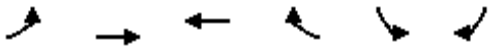
Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	542	50	314	196	71	27	198	624	350	368	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.91	0.88	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	571	53	331	206	75	28	208	657	368	387	53
RTOR Reduction (vph)	0	0	41	0	0	53	0	0	323	0	0	28
Lane Group Flow (vph)	52	571	12	331	206	22	28	208	334	368	387	25
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.4	18.0	18.0	10.3	23.9	23.9	1.7	18.8	18.8	21.6	38.7	38.7
Effective Green, g (s)	5.4	20.0	19.0	11.3	25.9	24.9	2.7	20.8	19.8	22.6	40.7	39.7
Actuated g/C Ratio	0.06	0.24	0.22	0.13	0.31	0.29	0.03	0.25	0.23	0.27	0.48	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	113	1201	355	458	1555	465	56	1249	652	472	2443	742
v/s Ratio Prot	0.03	c0.11		c0.10	0.04		0.02	0.04		c0.21	0.08	
v/s Ratio Perm			0.01			0.01			c0.12			0.02
v/c Ratio	0.46	0.48	0.03	0.72	0.13	0.05	0.50	0.17	0.51	0.78	0.16	0.03
Uniform Delay, d1	38.2	27.8	25.7	35.2	21.3	21.4	40.3	25.1	28.2	28.7	12.4	12.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.3	0.0	5.6	0.0	0.0	6.9	0.1	0.7	8.0	0.0	0.0
Delay (s)	41.2	28.1	25.7	40.8	21.3	21.5	47.2	25.2	28.9	36.7	12.4	12.2
Level of Service	D	C	C	D	C	C	D	C	C	D	B	B
Approach Delay (s)		28.9			31.9			28.6			23.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	11.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	78	1439	631	7	71	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1547	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1547	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	82	1515	664	7	75	12
RTOR Reduction (vph)	0	0	0	5	0	8
Lane Group Flow (vph)	82	1515	664	2	75	4
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.9	27.5	19.6	19.6	21.2	21.2
Effective Green, g (s)	3.9	27.5	19.6	19.6	21.2	21.2
Actuated g/C Ratio	0.07	0.49	0.35	0.35	0.37	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	2466	1758	535	662	584
v/s Ratio Prot	0.05	c0.30	0.13		c0.04	
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.67	0.61	0.38	0.00	0.11	0.01
Uniform Delay, d1	25.8	10.7	14.0	12.2	11.6	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.6	0.5	0.1	0.0	0.3	0.0
Delay (s)	39.4	11.2	14.1	12.2	12.0	11.2
Level of Service	D	B	B	B	B	B
Approach Delay (s)		12.6	14.1		11.8	
Approach LOS		B	B		B	

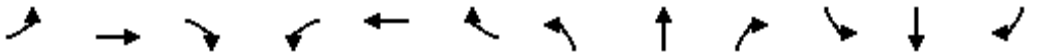
Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1460	50	1	676	37	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1547	1770	5085	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1547	1770	5085	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1537	53	1	712	39	1
RTOR Reduction (vph)	0	31	0	0	0	1
Lane Group Flow (vph)	1537	22	1	712	39	0
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	22.8	22.8	0.7	27.5	20.1	20.1
Effective Green, g (s)	22.8	22.8	0.7	27.5	20.1	20.1
Actuated g/C Ratio	0.41	0.41	0.01	0.49	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2085	634	22	2515	640	565
v/s Ratio Prot	c0.30		0.00	c0.14	c0.02	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.74	0.03	0.05	0.28	0.06	0.00
Uniform Delay, d1	13.9	9.8	27.1	8.3	11.6	11.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0	0.9	0.1	0.2	0.0
Delay (s)	15.3	9.8	28.0	8.3	11.8	11.3
Level of Service	B	A	C	A	B	B
Approach Delay (s)	15.1			8.3	11.8	
Approach LOS	B			A	B	

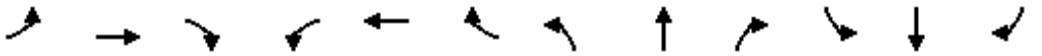
Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	1368	58	99	531	88	55	76	134	335	93	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	1440	61	104	559	93	58	80	141	353	98	124
RTOR Reduction (vph)	0	0	30	0	0	59	0	0	120	0	0	85
Lane Group Flow (vph)	65	1440	31	104	559	34	58	80	21	353	98	39
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.1	33.5	33.5	7.1	34.5	34.5	6.5	13.5	13.5	22.7	29.7	29.7
Effective Green, g (s)	7.1	35.5	34.5	8.1	36.5	35.5	7.5	14.5	14.5	23.7	30.7	30.7
Actuated g/C Ratio	0.07	0.37	0.36	0.08	0.38	0.37	0.08	0.15	0.15	0.24	0.32	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	130	1865	564	148	1917	581	137	279	237	433	591	502
v/s Ratio Prot	0.04	c0.28		c0.06	0.11		0.03	c0.04		c0.20	0.05	
v/s Ratio Perm			0.02			0.02			0.01			0.02
v/c Ratio	0.50	0.77	0.06	0.70	0.29	0.06	0.42	0.29	0.09	0.82	0.17	0.08
Uniform Delay, d1	43.1	27.1	20.5	43.2	21.1	19.8	42.6	36.6	35.5	34.5	23.8	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	2.0	0.0	14.0	0.1	0.0	2.1	0.6	0.2	11.2	0.1	0.1
Delay (s)	46.1	29.1	20.5	57.2	21.2	19.9	44.7	37.1	35.6	45.7	24.0	23.2
Level of Service	D	C	C	E	C	B	D	D	D	D	C	C
Approach Delay (s)		29.5			26.0			37.9			37.2	
Approach LOS		C			C			D			D	

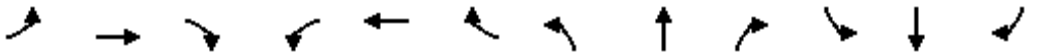
Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	352	1298	100	297	431	78	71	764	682	334	971	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1553	3433	5085	1554	3433	3539	1558	3433	3539	1558
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1553	3433	5085	1554	3433	3539	1558	3433	3539	1558
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	371	1366	105	313	454	82	75	804	718	352	1022	264
RTOR Reduction (vph)	0	0	77	0	0	68	0	0	174	0	0	166
Lane Group Flow (vph)	371	1366	28	313	454	14	75	804	544	352	1022	98
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.1	25.0	25.0	9.0	15.9	15.9	7.2	33.0	33.0	9.0	34.8	34.8
Effective Green, g (s)	19.1	28.0	26.0	10.0	18.9	16.9	8.2	36.4	34.0	10.0	38.2	35.8
Actuated g/C Ratio	0.20	0.29	0.27	0.10	0.20	0.18	0.09	0.38	0.35	0.10	0.40	0.37
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	683	1483	421	358	1001	274	293	1342	552	358	1408	581
v/s Ratio Prot	0.11	c0.27		c0.09	0.09		0.02	0.23		c0.10	0.29	
v/s Ratio Perm			0.02			0.01			c0.35			0.06
v/c Ratio	0.54	0.92	0.07	0.87	0.45	0.05	0.26	0.60	0.99	0.98	0.73	0.17
Uniform Delay, d1	34.5	32.9	26.0	42.4	34.0	32.9	41.0	23.9	30.8	42.9	24.5	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	9.9	0.1	19.8	0.5	0.1	0.2	1.0	34.6	42.7	2.3	0.3
Delay (s)	35.0	42.8	26.1	62.2	34.5	33.0	41.2	25.0	65.4	85.6	26.7	20.4
Level of Service	D	D	C	E	C	C	D	C	E	F	C	C
Approach Delay (s)		40.3			44.6			43.9			38.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

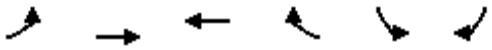


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2302	0	0	790	98	0	0	0	246	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Util. Factor	1.00	0.91			0.91	1.00				1.00		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				1770		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	2423	0	0	832	103	0	0	0	259	0	8
RTOR Reduction (vph)	0	0	0	0	0	39	0	0	0	0	0	6
Lane Group Flow (vph)	7	2423	0	0	832	64	0	0	0	259	0	2
Turn Type	Prot		Perm	Perm		Perm				Prot		custom
Protected Phases	7	4			8					6		
Permitted Phases			4	8		8						6
Actuated Green, G (s)	1.1	48.4			43.3	43.3				15.8		15.8
Effective Green, g (s)	2.1	51.4			46.3	46.3				16.8		16.8
Actuated g/C Ratio	0.03	0.69			0.62	0.62				0.23		0.23
Clearance Time (s)	4.0	6.0			6.0	6.0				4.0		4.0
Vehicle Extension (s)	2.0	4.1			4.1	4.1				2.0		2.0
Lane Grp Cap (vph)	50	3522			3173	988				401		358
v/s Ratio Prot	0.00	c0.48			0.16					c0.15		
v/s Ratio Perm						0.04						0.00
v/c Ratio	0.14	0.69			0.26	0.07				0.65		0.01
Uniform Delay, d1	35.2	6.7			6.3	5.5				26.0		22.2
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	0.5	0.6			0.1	0.0				2.7		0.0
Delay (s)	35.6	7.3			6.3	5.5				28.7		22.2
Level of Service	D	A			A	A				C		C
Approach Delay (s)		7.4			6.2			0.0			28.5	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2574	12	66	877	9	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2709	13	69	923	9	119
RTOR Reduction (vph)	0	4	0	0	0	100
Lane Group Flow (vph)	2709	9	69	923	9	19
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	54.4	54.4	7.2	65.6	13.5	13.5
Effective Green, g (s)	57.4	57.4	8.2	68.6	14.5	14.5
Actuated g/C Ratio	0.64	0.64	0.09	0.76	0.16	0.16
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	3243	1010	161	3876	285	255
v/s Ratio Prot	c0.53		c0.04	0.18	0.01	
v/s Ratio Perm		0.01				c0.01
v/c Ratio	0.84	0.01	0.43	0.24	0.03	0.08
Uniform Delay, d1	12.6	5.9	38.7	3.1	31.8	32.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.0	0.7	0.0	0.0	0.0
Delay (s)	14.7	5.9	39.4	3.2	31.8	32.1
Level of Service	B	A	D	A	C	C
Approach Delay (s)	14.7			5.7	32.1	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



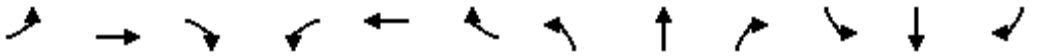
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	17	2640	853	175	430	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1536	1770	1558
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1536	1770	1558
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	2779	898	184	453	53
RTOR Reduction (vph)	0	0	0	83	0	37
Lane Group Flow (vph)	18	2779	898	101	453	16
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.2	50.8	44.6	44.6	24.6	24.6
Effective Green, g (s)	3.2	53.8	47.6	47.6	25.6	25.6
Actuated g/C Ratio	0.04	0.62	0.55	0.55	0.30	0.30
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	66	3170	2805	847	525	462
v/s Ratio Prot	0.01	c0.55	0.18		c0.26	
v/s Ratio Perm				0.07		0.01
v/c Ratio	0.27	0.88	0.32	0.12	0.86	0.03
Uniform Delay, d1	40.4	13.5	10.5	9.3	28.7	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	3.1	0.1	0.1	13.3	0.0
Delay (s)	41.2	16.6	10.6	9.4	42.0	21.6
Level of Service	D	B	B	A	D	C
Approach Delay (s)		16.8	10.4		39.8	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	86.3	Sum of lost time (s)	6.9
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

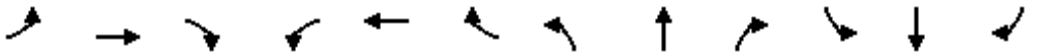
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	2700	238	30	929	176	34	5	1	177	65	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.6	3.6	3.6	3.9	3.9	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.98	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1681	1706	1583	1681	1695	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.98	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1681	1706	1583	1681	1695	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	135	2842	251	32	978	185	36	5	1	186	68	24
RTOR Reduction (vph)	0	0	40	0	0	73	0	0	1	0	5	0
Lane Group Flow (vph)	135	2842	211	32	978	112	21	20	0	139	134	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	14.6	94.3	94.3	5.0	84.7	84.7	7.2	7.2	7.2	19.0	19.0	
Effective Green, g (s)	15.6	97.3	97.3	6.0	87.7	87.7	8.2	8.2	8.2	20.0	20.0	
Actuated g/C Ratio	0.11	0.67	0.67	0.04	0.60	0.60	0.06	0.06	0.06	0.14	0.14	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.6	4.6	4.6	4.9	4.9	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	4.5	4.5	4.5	3.1	3.1	
Lane Grp Cap (vph)	190	3412	1062	73	3076	957	95	96	90	232	234	
v/s Ratio Prot	c0.08	c0.56		0.02	0.19		c0.01	0.01		c0.08	0.08	
v/s Ratio Perm			0.13			0.07			0.00			
v/c Ratio	0.71	0.83	0.20	0.44	0.32	0.12	0.22	0.21	0.00	0.60	0.57	
Uniform Delay, d1	62.5	17.8	9.1	67.9	14.0	12.2	65.3	65.3	64.5	58.7	58.5	
Progression Factor	1.00	1.00	1.00	1.30	0.29	0.39	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.9	2.5	0.4	1.5	0.3	0.2	2.0	1.9	0.0	4.2	3.4	
Delay (s)	72.5	20.3	9.5	89.4	4.3	5.0	67.4	67.2	64.5	62.9	61.9	
Level of Service	E	C	A	F	A	A	E	E	E	E	E	
Approach Delay (s)		21.7			6.7			67.2			62.4	
Approach LOS		C			A			E			E	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



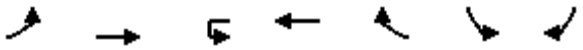
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	2609	116	267	942	126	167	131	520	132	116	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.7	4.7	3.0	2.7	2.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	49	2746	122	281	992	133	176	138	547	139	122	46
RTOR Reduction (vph)	0	0	56	0	0	64	0	0	130	0	0	41
Lane Group Flow (vph)	49	2746	66	281	992	69	176	138	417	139	122	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.2	75.7	75.7	12.0	72.5	72.5	25.0	26.3	26.3	11.3	12.6	12.6
Effective Green, g (s)	16.2	78.7	78.7	13.0	75.5	75.5	26.0	29.3	27.3	12.3	15.6	15.6
Actuated g/C Ratio	0.11	0.54	0.54	0.09	0.52	0.52	0.18	0.20	0.19	0.08	0.11	0.11
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.8	3.8	2.0	3.8	3.8
Lane Grp Cap (vph)	384	2760	859	308	3337	824	616	715	298	291	381	170
v/s Ratio Prot	0.01	c0.54		c0.08	0.15		0.05	0.04		c0.04	c0.03	
v/s Ratio Perm			0.04			0.04			c0.26			0.00
v/c Ratio	0.13	0.99	0.08	0.91	0.30	0.08	0.29	0.19	1.40	0.48	0.32	0.03
Uniform Delay, d1	58.0	33.0	15.8	65.4	19.7	17.4	51.5	48.0	58.9	63.3	59.8	57.9
Progression Factor	0.83	0.75	1.36	0.81	0.75	1.32	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	12.1	0.1	28.8	0.2	0.2	0.1	0.2	199.0	0.5	0.6	0.1
Delay (s)	48.4	37.0	21.6	81.8	15.0	23.2	51.6	48.2	257.9	63.7	60.4	58.0
Level of Service	D	D	C	F	B	C	D	D	F	E	E	E
Approach Delay (s)		36.5			29.1			182.1			61.6	
Approach LOS		D			C			F			E	

Intersection Summary			
HCM Average Control Delay	58.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



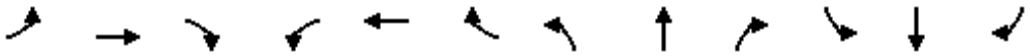
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	3174	0	186	1351	77	0	0	59	14	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0		4.0	2.0	4.0			4.0	4.0		
Lane Util. Factor		0.86		1.00	0.86	1.00			1.00	1.00		
Frt		1.00		1.00	1.00	0.85			0.85	1.00		
Flt Protected		1.00		0.95	1.00	1.00			1.00	0.95		
Satd. Flow (prot)		6408		1770	6408	1583			1583	1770		
Flt Permitted		1.00		0.95	1.00	1.00			1.00	0.95		
Satd. Flow (perm)		6408		1770	6408	1583			1583	1770		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	3341	0	196	1422	81	0	0	62	15	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	56	0	0	0
Lane Group Flow (vph)	0	3341	0	196	1422	65	0	0	6	15	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		96.0		13.0	114.0	114.0			12.8	3.2		
Effective Green, g (s)		99.0		14.0	117.0	115.0			13.8	4.2		
Actuated g/C Ratio		0.68		0.10	0.81	0.79			0.10	0.03		
Clearance Time (s)		5.0		5.0	5.0	5.0			5.0	5.0		
Vehicle Extension (s)		3.0		3.0	3.0	3.0			3.0	3.0		
Lane Grp Cap (vph)		4375		171	5171	1255			151	51		
v/s Ratio Prot		c0.52		c0.11	0.22					c0.01		
v/s Ratio Perm						0.04			c0.00			
v/c Ratio		0.76		1.15	0.27	0.05			0.04	0.29		
Uniform Delay, d1		15.2		65.5	3.5	3.2			59.6	68.9		
Progression Factor		0.43		0.67	2.21	3.79			1.00	1.00		
Incremental Delay, d2		0.1		111.9	0.0	0.0			0.1	3.2		
Delay (s)		6.6		155.9	7.7	12.3			59.7	72.2		
Level of Service		A		F	A	B			E	E		
Approach Delay (s)		6.6			25.0			59.7			72.2	
Approach LOS		A			C			E			E	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



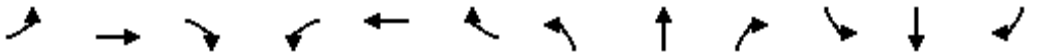
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	17	3230	0	1583	32	536	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6		2.6	2.6	3.9	3.9
Lane Util. Factor	1.00	0.86		0.86	1.00	0.97	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	6408		6408	1583	3433	1583
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	6408		6408	1583	3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	3400	0	1666	34	564	33
RTOR Reduction (vph)	0	0	0	0	10	0	27
Lane Group Flow (vph)	18	3400	0	1666	24	564	6
Turn Type	Prot		Prot		Perm		Perm
Protected Phases	7	4	3	8		6	
Permitted Phases					8		6
Actuated Green, G (s)	4.1	106.7		98.6	98.6	27.4	27.4
Effective Green, g (s)	5.1	110.1		102.0	102.0	28.4	28.4
Actuated g/C Ratio	0.04	0.76		0.70	0.70	0.20	0.20
Clearance Time (s)	4.0	6.0		6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.8		4.8	4.8	2.0	2.0
Lane Grp Cap (vph)	62	4866		4508	1114	672	310
v/s Ratio Prot	0.01	c0.53		0.26		c0.16	
v/s Ratio Perm					0.02		0.00
v/c Ratio	0.29	0.70		0.37	0.02	0.84	0.02
Uniform Delay, d1	68.2	8.9		8.6	6.5	56.1	47.1
Progression Factor	1.10	0.64		0.47	0.15	1.00	1.00
Incremental Delay, d2	0.6	0.6		0.1	0.0	8.7	0.0
Delay (s)	75.6	6.3		4.1	1.0	64.8	47.1
Level of Service	E	A		A	A	E	D
Approach Delay (s)		6.7		4.1		63.8	
Approach LOS		A		A		E	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	1351	100	60	1590	68	10	10	30	10	10	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.86	1.00	1.00	0.86	1.00	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	
Satd. Flow (prot)	1770	6408	1583	1770	6408	1583	1770	1863	1583		1732	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	
Satd. Flow (perm)	1770	6408	1583	1770	6408	1583	1770	1863	1583		1732	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	1422	105	63	1674	72	11	11	32	11	11	16
RTOR Reduction (vph)	0	0	36	0	0	24	0	0	28	0	15	0
Lane Group Flow (vph)	58	1422	69	63	1674	48	11	11	4	0	23	0
Turn Type	Prot		Perm	Prot		Perm	Split		pm+ov	Split		
Protected Phases	7	4		3	8		6	6	3	2	2	
Permitted Phases			4			8			6			
Actuated Green, G (s)	9.2	95.9	95.9	9.5	96.2	96.2	10.0	10.0	19.5		10.1	
Effective Green, g (s)	9.2	95.9	95.9	9.5	96.2	96.2	10.0	10.0	19.5		10.1	
Actuated g/C Ratio	0.06	0.66	0.66	0.07	0.66	0.66	0.07	0.07	0.13		0.07	
Clearance Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	112	4238	1047	116	4251	1050	122	128	262		121	
v/s Ratio Prot	0.03	0.22		c0.04	c0.26		c0.01	0.01	0.00		c0.01	
v/s Ratio Perm			0.04			0.03			0.00			
v/c Ratio	0.52	0.34	0.07	0.54	0.39	0.05	0.09	0.09	0.02		0.19	
Uniform Delay, d1	65.8	10.7	8.7	65.6	11.1	8.5	63.2	63.2	54.4		63.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	4.0	0.2	0.1	5.1	0.3	0.1	0.3	0.3	0.0		0.8	
Delay (s)	69.8	10.9	8.8	70.8	11.4	8.5	63.6	63.5	54.5		64.4	
Level of Service	E	B	A	E	B	A	E	E	D		E	
Approach Delay (s)		12.9			13.3			58.2			64.4	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

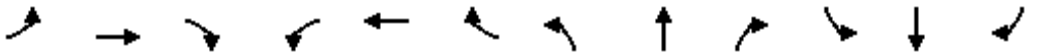


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	737	2399	800	161	1289	411	247	476	191	190	571	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6	2.6	3.0	2.6	2.6	3.0	2.6	3.0	3.0	1.9	1.9
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.94	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	4990	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	4990	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	776	2525	842	169	1357	433	260	501	201	200	601	218
RTOR Reduction (vph)	0	0	125	0	0	137	0	0	0	0	0	178
Lane Group Flow (vph)	776	2525	717	169	1357	296	260	501	201	200	601	40
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			2
Actuated Green, G (s)	42.0	79.9	79.9	10.7	48.6	48.6	11.7	22.4	145.0	12.0	23.4	23.4
Effective Green, g (s)	43.0	83.3	83.3	11.7	52.0	52.0	12.7	25.8	145.0	13.0	26.8	26.8
Actuated g/C Ratio	0.30	0.57	0.57	0.08	0.36	0.36	0.09	0.18	1.00	0.09	0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.4		2.0	6.0	6.0
Lane Grp Cap (vph)	1018	3681	909	277	2298	568	437	630	1583	308	940	293
v/s Ratio Prot	0.23	0.39		0.05	c0.21		0.05	c0.14		0.06	c0.12	
v/s Ratio Perm			c0.45			0.19			0.13			0.03
v/c Ratio	0.76	0.69	0.79	0.61	0.59	0.52	0.59	0.80	0.13	0.65	0.64	0.14
Uniform Delay, d1	46.4	21.7	24.0	64.4	37.8	36.7	63.7	57.1	0.0	63.8	54.6	49.4
Progression Factor	0.79	0.64	0.49	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.8	5.1	2.8	1.1	3.4	1.5	7.0	0.2	3.5	2.4	0.6
Delay (s)	38.9	14.7	16.9	67.2	39.0	40.1	65.1	64.1	0.2	67.3	57.0	50.0
Level of Service	D	B	B	E	D	D	E	E	A	E	E	D
Approach Delay (s)		19.7			41.6			51.0			57.6	
Approach LOS		B			D			D			E	

Intersection Summary			
HCM Average Control Delay	33.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	7.1
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

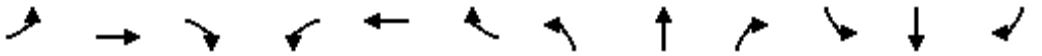
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1390	49	117	1324	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	4.0		5.0
Lane Util. Factor	0.86	1.00	1.00	0.91		1.00
Frt	1.00	0.85	1.00	1.00		0.86
Flt Protected	1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)	6408	1583	1770	5085		1611
Flt Permitted	1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)	6408	1583	1770	5085		1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1463	52	123	1394	0	26
RTOR Reduction (vph)	0	9	0	0	0	23
Lane Group Flow (vph)	1463	43	123	1394	0	3
Turn Type		Perm	Prot			Over
Protected Phases	4		3	Free		3
Permitted Phases		4				
Actuated Green, G (s)	119.6	119.6	15.4	145.0		15.4
Effective Green, g (s)	119.6	119.6	15.4	145.0		15.4
Actuated g/C Ratio	0.82	0.82	0.11	1.00		0.11
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	5285	1306	188	5085		171
v/s Ratio Prot	0.23		c0.07	0.27		0.00
v/s Ratio Perm		0.03				
v/c Ratio	0.28	0.03	0.65	0.27		0.02
Uniform Delay, d1	2.9	2.3	62.2	0.0		58.0
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.0	0.0	7.9	0.1		0.0
Delay (s)	2.9	2.3	70.2	0.1		58.1
Level of Service	A	A	E	A		E
Approach Delay (s)	2.9			5.8	58.1	
Approach LOS	A			A	E	

Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	5.0
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	990	425	516	976	400	314	0	662	2	606	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	6.0	2.0	4.0	2.0	4.0		4.0	6.0	4.0	2.0
Lane Util. Factor		0.86	1.00	0.97	0.91	1.00	0.97		0.88	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		6408	1583	3433	5085	1583	3433		2787	1770	3539	1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		6408	1583	3433	5085	1583	3433		2787	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1042	447	543	1027	421	331	0	697	2	638	159
RTOR Reduction (vph)	0	0	189	0	0	0	0	0	448	0	0	0
Lane Group Flow (vph)	0	1042	258	543	1027	421	331	0	249	2	638	159
Turn Type			Prot	Prot		Free	Prot		custom	Split		Free
Protected Phases		4	4	3	8		2		2 3	1	1	
Permitted Phases						Free						Free
Actuated Green, G (s)		47.7	47.7	26.6	78.3	145.0	17.3		49.9	31.4	31.4	145.0
Effective Green, g (s)		49.7	47.7	28.6	80.3	145.0	19.3		51.9	31.4	33.4	145.0
Actuated g/C Ratio		0.34	0.33	0.20	0.55	1.00	0.13		0.36	0.22	0.23	1.00
Clearance Time (s)		6.0	6.0	4.0	6.0		6.0			6.0	6.0	
Vehicle Extension (s)		4.8	4.8	2.0	4.8		2.0			4.7	4.7	
Lane Grp Cap (vph)		2196	521	677	2816	1583	457		998	383	815	1583
v/s Ratio Prot		0.16	c0.16	c0.16	0.20		c0.10		0.09	0.00	c0.18	
v/s Ratio Perm						0.27						0.10
v/c Ratio		0.47	0.50	0.80	0.36	0.27	0.72		0.25	0.01	0.78	0.10
Uniform Delay, d1		37.4	39.0	55.5	18.1	0.0	60.3		32.8	44.6	52.4	0.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.3	1.4	6.4	0.4	0.4	4.8		0.0	0.0	5.6	0.1
Delay (s)		37.7	40.5	61.9	18.5	0.4	65.1		32.9	44.6	58.0	0.1
Level of Service		D	D	E	B	A	E		C	D	E	A
Approach Delay (s)		38.5			26.5			43.2			46.4	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

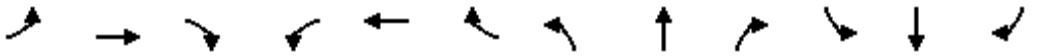


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	466	604	5	205	23	368	43	2	69	117	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	491	636	5	216	24	387	45	2	73	123	0
RTOR Reduction (vph)	0	0	436	0	0	14	0	0	1	0	0	0
Lane Group Flow (vph)	0	491	200	5	216	10	387	45	1	73	123	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		19.5	19.5	0.5	25.0	25.0	12.4	20.4	20.4	4.7	12.7	
Effective Green, g (s)		21.5	20.5	1.5	27.0	26.0	13.4	22.4	21.4	5.7	14.7	
Actuated g/C Ratio		0.33	0.31	0.02	0.41	0.40	0.21	0.34	0.33	0.09	0.23	
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1169	498	41	1468	632	707	1218	520	155	799	
v/s Ratio Prot		c0.14		0.00	c0.06		c0.11	0.01		0.04	c0.03	
v/s Ratio Perm			0.13			0.01			0.00			
v/c Ratio		0.42	0.40	0.12	0.15	0.02	0.55	0.04	0.00	0.47	0.15	
Uniform Delay, d1		17.0	17.5	31.2	11.9	11.8	23.1	14.2	14.7	28.3	20.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.5	1.3	0.0	0.0	0.9	0.0	0.0	2.3	0.1	
Delay (s)		17.2	18.0	32.5	11.9	11.8	24.0	14.2	14.7	30.5	20.3	
Level of Service		B	B	C	B	B	C	B	B	C	C	
Approach Delay (s)		17.7			12.3			22.9			24.1	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

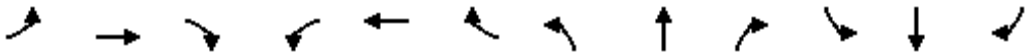
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	535	12	41	221	13	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3539	1583	1770	3539	1770	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (perm)	3539	1583	1770	3539	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	563	13	43	233	14	0
RTOR Reduction (vph)	0	9	0	0	0	0
Lane Group Flow (vph)	563	4	43	233	14	0
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	13.2	13.2	2.2	20.4	8.1	
Effective Green, g (s)	13.2	13.2	2.2	20.4	8.1	
Actuated g/C Ratio	0.34	0.34	0.06	0.53	0.21	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1213	543	101	1875	372	
v/s Ratio Prot	c0.16		c0.02	0.07		
v/s Ratio Perm		0.00			c0.01	
v/c Ratio	0.46	0.01	0.43	0.12	0.04	
Uniform Delay, d1	9.9	8.3	17.5	4.6	12.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.0	2.9	0.0	0.0	
Delay (s)	10.2	8.3	20.4	4.6	12.1	
Level of Service	B	A	C	A	B	
Approach Delay (s)	10.1			7.1	12.1	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	38.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



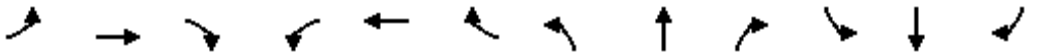
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	524	8	35	226	170	18	703	79	278	571	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	552	8	37	238	179	19	740	83	293	601	83
RTOR Reduction (vph)	0	0	6	0	0	142	0	0	55	0	0	45
Lane Group Flow (vph)	147	552	2	37	238	37	19	740	28	293	601	38
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.1	22.3	22.3	3.8	17.0	17.0	2.2	27.9	27.9	12.3	38.0	38.0
Effective Green, g (s)	10.1	24.3	23.3	4.8	19.0	18.0	3.2	29.9	28.9	13.3	40.0	39.0
Actuated g/C Ratio	0.12	0.28	0.27	0.06	0.22	0.21	0.04	0.35	0.33	0.15	0.46	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	402	1432	427	191	779	330	127	1226	530	529	2357	715
v/s Ratio Prot	c0.04	c0.11		0.01	0.07		0.01	c0.21		c0.09	0.12	
v/s Ratio Perm			0.00			0.02			0.02			0.02
v/c Ratio	0.37	0.39	0.01	0.19	0.31	0.11	0.15	0.60	0.05	0.55	0.25	0.05
Uniform Delay, d1	35.1	25.0	23.0	38.9	28.1	27.7	40.2	23.3	19.4	33.8	14.1	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.0	0.5	0.2	0.2	0.5	0.8	0.0	1.3	0.1	0.0
Delay (s)	35.7	25.2	23.0	39.4	28.4	27.8	40.8	24.1	19.5	35.0	14.1	13.3
Level of Service	D	C	C	D	C	C	D	C	B	D	B	B
Approach Delay (s)		27.3			29.1			24.1			20.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	86.3	Sum of lost time (s)	11.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



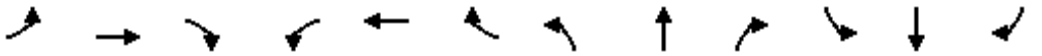
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	877	3	20	423	10	7	5	97	37	4	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.90	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	1770	1596		1770	1676	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	1770	1596		1770	1676	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	923	3	21	445	11	7	5	102	39	4	8
RTOR Reduction (vph)	0	0	2	0	0	5	0	80	0	0	7	0
Lane Group Flow (vph)	0	923	1	21	445	6	7	27	0	39	5	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		20.2	20.2	0.4	24.6	24.6	7.9	10.2		1.2	3.5	
Effective Green, g (s)		20.2	20.2	0.4	24.6	24.6	7.9	10.2		1.2	3.5	
Actuated g/C Ratio		0.42	0.42	0.01	0.51	0.51	0.16	0.21		0.02	0.07	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1489	666	15	1814	811	291	339		44	122	
v/s Ratio Prot		c0.26		c0.01	0.13		0.00	c0.02		c0.02	0.00	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.62	0.00	1.40	0.25	0.01	0.02	0.08		0.89	0.04	
Uniform Delay, d1		10.9	8.1	23.8	6.5	5.7	16.8	15.1		23.3	20.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.0	379.3	0.1	0.0	0.2	0.1		92.1	0.1	
Delay (s)		11.7	8.1	403.1	6.6	5.7	17.0	15.2		115.4	20.8	
Level of Service		B	A	F	A	A	B	B		F	C	
Approach Delay (s)		11.7			24.0			15.3			93.1	
Approach LOS		B			C			B			F	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	951	12	103	489	154	25	142	212	22	224	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	3.0	4.7	4.7	3.0	4.3	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	1001	13	108	515	162	26	149	223	23	236	133
RTOR Reduction (vph)	0	0	6	0	0	95	0	0	176	0	0	103
Lane Group Flow (vph)	104	1001	7	108	515	67	26	149	47	23	236	30
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	7.0	29.0	29.0	7.2	29.2	29.2	3.7	14.4	14.4	3.7	15.7	15.7
Effective Green, g (s)	8.0	30.0	30.0	8.2	30.2	30.2	4.7	15.4	15.4	4.7	16.7	16.7
Actuated g/C Ratio	0.11	0.41	0.41	0.11	0.41	0.41	0.06	0.21	0.21	0.06	0.23	0.23
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.3	5.3	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	193	1448	648	198	1458	652	113	391	333	113	424	361
v/s Ratio Prot	0.06	c0.28		c0.06	0.15		c0.01	0.08		0.01	c0.13	
v/s Ratio Perm			0.00			0.04			0.03			0.02
v/c Ratio	0.54	0.69	0.01	0.55	0.35	0.10	0.23	0.38	0.14	0.20	0.56	0.08
Uniform Delay, d1	30.9	17.8	12.8	30.8	14.8	13.2	32.6	24.9	23.6	32.5	25.0	22.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	1.7	0.0	1.6	0.3	0.1	0.4	0.2	0.1	0.3	0.9	0.0
Delay (s)	32.4	19.5	12.9	32.4	15.1	13.3	33.0	25.1	23.6	32.9	25.9	22.3
Level of Service	C	B	B	C	B	B	C	C	C	C	C	C
Approach Delay (s)		20.6			17.1			24.8			25.1	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	13.7
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

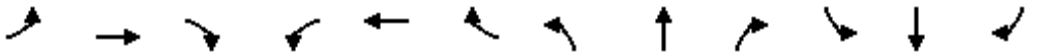


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	1309	7	91	665	36	25	26	19	50	6	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	5.7	4.0	4.7	4.7	4.9	4.9	4.9	3.9	4.9	3.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	1378	7	96	700	38	26	27	20	53	6	12
RTOR Reduction (vph)	0	0	2	0	0	14	0	0	19	0	0	11
Lane Group Flow (vph)	29	1378	5	96	700	24	26	27	1	53	6	1
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	2.5	47.4	47.4	7.3	52.2	52.2	5.2	5.2	5.2	5.7	5.7	5.7
Effective Green, g (s)	3.5	48.4	47.4	7.3	53.2	53.2	5.2	5.2	5.2	6.7	5.7	6.7
Actuated g/C Ratio	0.04	0.57	0.56	0.09	0.63	0.63	0.06	0.06	0.06	0.08	0.07	0.08
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.9	4.9	4.9	4.9	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	73	2013	882	152	2212	990	108	114	97	139	125	125
v/s Ratio Prot	0.02	c0.39		c0.05	0.20		c0.01	0.01		c0.03	0.00	
v/s Ratio Perm			0.00			0.02			0.00			0.00
v/c Ratio	0.40	0.68	0.01	0.63	0.32	0.02	0.24	0.24	0.01	0.38	0.05	0.01
Uniform Delay, d1	39.8	13.0	8.4	37.6	7.5	6.1	38.1	38.1	37.5	37.2	37.2	36.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	1.1	0.0	6.1	0.1	0.0	0.4	0.4	0.0	0.6	0.1	0.0
Delay (s)	41.1	14.1	8.4	43.7	7.6	6.1	38.5	38.5	37.6	37.9	37.2	36.1
Level of Service	D	B	A	D	A	A	D	D	D	D	D	D
Approach Delay (s)		14.6			11.7			38.2			37.5	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	85.1	Sum of lost time (s)	17.5
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

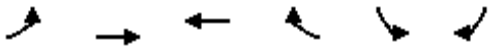
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1365	91	33	507	45	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1437	96	35	534	47	128
RTOR Reduction (vph)	0	43	0	0	0	109
Lane Group Flow (vph)	1437	53	35	534	47	19
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	29.7	29.7	1.3	36.0	8.2	8.2
Effective Green, g (s)	29.7	29.7	1.3	36.0	8.2	8.2
Actuated g/C Ratio	0.55	0.55	0.02	0.66	0.15	0.15
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1939	867	42	2351	268	239
v/s Ratio Prot	c0.41		c0.02	0.15	c0.03	
v/s Ratio Perm		0.03				0.01
v/c Ratio	0.74	0.06	0.83	0.23	0.18	0.08
Uniform Delay, d1	9.3	5.7	26.3	3.6	20.1	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.0	77.0	0.0	0.3	0.1
Delay (s)	10.9	5.8	103.3	3.6	20.4	19.9
Level of Service	B	A	F	A	C	B
Approach Delay (s)	10.6			9.8	20.0	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



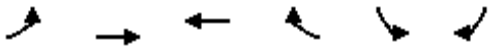
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	765	653	477	398	31	311	1077	948	40	1176	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.94	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	4990	3500		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	4990	3500		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	805	687	502	419	33	327	1134	998	42	1238	33
RTOR Reduction (vph)	0	0	152	0	5	0	0	0	192	0	0	21
Lane Group Flow (vph)	73	805	535	502	447	0	327	1134	806	42	1238	12
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	7.8	29.2	29.2	10.0	31.1		13.4	45.7	45.7	4.7	37.0	37.0
Effective Green, g (s)	8.8	31.7	31.7	11.0	33.6		14.4	49.1	49.1	5.7	40.4	40.4
Actuated g/C Ratio	0.08	0.29	0.29	0.10	0.31		0.13	0.45	0.45	0.05	0.37	0.37
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	276	1026	459	502	1076		452	2284	711	179	1880	585
v/s Ratio Prot	0.02	0.23		c0.10	0.13		c0.10	0.22		0.01	0.24	
v/s Ratio Perm			c0.34						c0.51			0.01
v/c Ratio	0.26	0.78	1.17	1.00	0.42		0.72	0.50	1.13	0.23	0.66	0.02
Uniform Delay, d1	47.2	35.7	38.8	49.1	30.1		45.5	21.3	30.1	49.7	28.7	21.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	4.5	96.0	40.2	0.4		4.8	0.3	76.8	0.2	1.1	0.0
Delay (s)	47.4	40.1	134.8	89.3	30.4		50.4	21.7	106.9	50.0	29.8	21.9
Level of Service	D	D	F	F	C		D	C	F	D	C	C
Approach Delay (s)		82.0			61.4			60.1			30.2	
Approach LOS		F			E			E			C	

Intersection Summary			
HCM Average Control Delay	59.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	109.3	Sum of lost time (s)	11.8
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



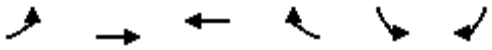
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	7	1707	812	71	177	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	1797	855	75	186	19
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	7	1797	855	75	186	19
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.4	41.5	36.4	64.3	12.8	64.3
Effective Green, g (s)	2.4	44.5	39.4	64.3	14.3	64.3
Actuated g/C Ratio	0.04	0.69	0.61	1.00	0.22	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	66	2449	2169	1583	394	1583
v/s Ratio Prot	0.00	c0.51	0.24		c0.11	
v/s Ratio Perm				0.05		0.01
v/c Ratio	0.11	0.73	0.39	0.05	0.47	0.01
Uniform Delay, d1	29.9	6.2	6.4	0.0	21.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.3	0.2	0.1	0.3	0.0
Delay (s)	30.2	7.5	6.6	0.1	22.0	0.0
Level of Service	C	A	A	A	C	A
Approach Delay (s)		7.5	6.0		20.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	5.5
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	8	1836	857	10	44	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.97	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3533		1737	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3533		1737	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	1933	902	11	46	14
RTOR Reduction (vph)	0	0	1	0	12	0
Lane Group Flow (vph)	8	1933	912	0	48	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.3	49.6	44.3		7.1	
Effective Green, g (s)	2.3	52.3	47.0		8.1	
Actuated g/C Ratio	0.03	0.79	0.71		0.12	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	61	2787	2501		212	
v/s Ratio Prot	0.00	c0.55	0.26		c0.03	
v/s Ratio Perm						
v/c Ratio	0.13	0.69	0.36		0.23	
Uniform Delay, d1	31.1	3.3	3.8		26.3	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.9	0.2		0.2	
Delay (s)	31.4	4.2	4.0		26.5	
Level of Service	C	A	A		C	
Approach Delay (s)		4.3	4.0		26.5	
Approach LOS		A	A		C	

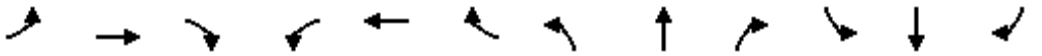
Intersection Summary			
HCM Average Control Delay	4.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	37	1906	859	13	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	5.7	3.0	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1527	1770	1548
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1527	1770	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	39	2006	904	14	13	42
RTOR Reduction (vph)	0	0	0	5	0	37
Lane Group Flow (vph)	39	2006	904	9	13	5
Confl. Peds. (#/hr)				10		10
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.8	50.2	43.4	43.4	7.2	7.2
Effective Green, g (s)	3.8	52.9	46.1	44.4	8.2	8.2
Actuated g/C Ratio	0.06	0.78	0.68	0.65	0.12	0.12
Clearance Time (s)	4.0	6.7	6.7	6.7	4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	4.3	2.0	2.0
Lane Grp Cap (vph)	99	2749	2396	996	213	186
v/s Ratio Prot	0.02	c0.57	0.26		c0.01	
v/s Ratio Perm				0.01		0.00
v/c Ratio	0.39	0.73	0.38	0.01	0.06	0.03
Uniform Delay, d1	31.0	3.9	4.8	4.1	26.5	26.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.1	0.2	0.0	0.0	0.0
Delay (s)	32.0	5.0	4.9	4.2	26.6	26.5
Level of Service	C	A	A	A	C	C
Approach Delay (s)		5.5	4.9		26.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	7.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	1443	167	230	737	228	121	451	784	155	487	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	136	1519	176	242	776	240	127	475	825	163	513	157
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	136	1519	176	242	776	240	127	475	825	163	513	157
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	8.3	55.8	120.0	12.6	60.1	120.0	7.8	22.7	120.0	9.5	24.4	120.0
Effective Green, g (s)	9.3	58.8	120.0	13.6	63.1	120.0	8.8	25.7	120.0	10.5	27.4	120.0
Actuated g/C Ratio	0.08	0.49	1.00	0.11	0.53	1.00	0.07	0.21	1.00	0.09	0.23	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	239	2243	1400	350	2407	1400	227	682	1400	270	727	1400
v/s Ratio Prot	0.04	c0.33		0.08	0.17		0.04	c0.15		0.05	c0.16	
v/s Ratio Perm			0.13			0.17			c0.59			0.11
v/c Ratio	0.57	0.68	0.13	0.69	0.32	0.17	0.56	0.70	0.59	0.60	0.71	0.11
Uniform Delay, d1	53.4	23.4	0.0	51.2	16.2	0.0	53.7	43.5	0.0	52.7	42.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	1.7	0.2	4.7	0.1	0.3	1.7	3.6	1.8	2.6	3.6	0.2
Delay (s)	55.3	25.0	0.2	55.9	16.4	0.3	55.4	47.1	1.8	55.3	46.2	0.2
Level of Service	E	C	A	E	B	A	E	D	A	E	D	A
Approach Delay (s)		24.9			20.9			21.7			39.3	
Approach LOS		C			C			C			D	

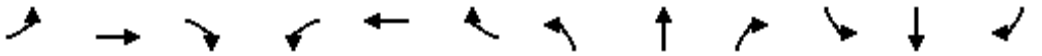
Intersection Summary			
HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2563	9	117	954	211	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	3.6	3.6
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5082		1770	5085	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5082		1770	5085	1770	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2698	9	123	1004	222	224
RTOR Reduction (vph)	0	0	0	0	0	125
Lane Group Flow (vph)	2707	0	123	1004	222	99
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	74.7		11.4	90.1	19.3	19.3
Effective Green, g (s)	76.7		11.4	92.1	20.6	20.6
Actuated g/C Ratio	0.64		0.10	0.77	0.17	0.17
Clearance Time (s)	5.7		4.0	5.7	4.9	4.9
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	3248		168	3903	304	265
v/s Ratio Prot	c0.53		c0.07	0.20	c0.13	
v/s Ratio Perm						0.06
v/c Ratio	0.83		0.73	0.26	0.73	0.37
Uniform Delay, d1	16.7		52.8	4.0	47.1	44.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7		13.2	0.2	7.5	0.3
Delay (s)	19.4		66.0	4.2	54.6	44.3
Level of Service	B		E	A	D	D
Approach Delay (s)	19.4			10.9	49.4	
Approach LOS	B			B	D	

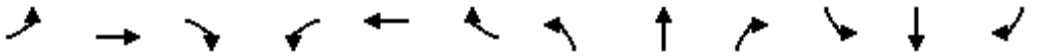
Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



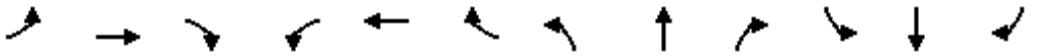
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	675	1919	92	532	851	96	82	1316	556	87	374	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	6.0	5.7	4.0	4.0	6.0	4.0	4.0	6.4	4.0
Lane Util. Factor	0.97	0.91	1.00	0.94	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	711	2020	97	560	896	101	86	1385	585	92	394	129
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	711	2020	97	560	896	101	86	1385	585	92	394	129
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	41.3	64.3	150.0	17.0	40.3	150.0	7.4	42.0	150.0	5.0	39.2	150.0
Effective Green, g (s)	41.3	64.3	150.0	17.0	40.3	150.0	7.4	42.0	150.0	5.0	39.2	150.0
Actuated g/C Ratio	0.28	0.43	1.00	0.11	0.27	1.00	0.05	0.28	1.00	0.03	0.26	1.00
Clearance Time (s)	5.7	5.7		6.0	5.7		4.0	6.0		4.0	6.4	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	3.7	
Lane Grp Cap (vph)	945	2180	1583	566	1366	1583	169	1424	1583	114	1675	1583
v/s Ratio Prot	0.21	c0.40		c0.11	0.18		0.03	c0.27		c0.03	0.06	
v/s Ratio Perm			0.06			0.06			c0.37			0.08
v/c Ratio	0.75	0.93	0.06	0.99	0.66	0.06	0.51	0.97	0.37	0.81	0.24	0.08
Uniform Delay, d1	49.7	40.6	0.0	66.4	48.7	0.0	69.5	53.4	0.0	72.0	43.6	0.0
Progression Factor	1.00	1.00	1.00	0.58	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	8.3	0.1	33.3	2.3	0.1	0.9	17.7	0.7	31.1	0.1	0.1
Delay (s)	52.7	48.9	0.1	71.8	38.4	0.1	70.4	71.1	0.7	103.1	43.7	0.1
Level of Service	D	D	A	E	D	A	E	E	A	F	D	A
Approach Delay (s)		48.2			47.9			51.0			43.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	48.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



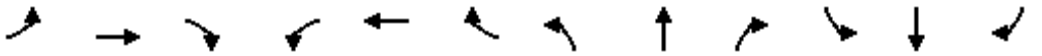
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1972	81	156	1051	124	137	962	422	78	425	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0	3.4	3.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	263	2076	85	164	1106	131	144	1013	444	82	447	346
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	0	0	0	212
Lane Group Flow (vph)	263	2076	58	164	1106	131	144	1013	444	82	447	134
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			Free			6
Actuated Green, G (s)	14.6	67.1	67.1	7.0	61.5	150.0	30.3	46.5	150.0	7.0	23.2	23.2
Effective Green, g (s)	15.6	70.1	70.1	10.4	64.9	150.0	31.3	49.9	150.0	8.0	26.2	26.2
Actuated g/C Ratio	0.10	0.47	0.47	0.07	0.43	1.00	0.21	0.33	1.00	0.05	0.17	0.17
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1		2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	357	2376	740	238	2773	1583	716	1177	1583	183	888	276
v/s Ratio Prot	0.08	c0.41		c0.05	0.17		0.04	c0.29		0.02	c0.09	
v/s Ratio Perm			0.04			0.08			0.28			0.08
v/c Ratio	0.74	0.87	0.08	0.69	0.40	0.08	0.20	0.86	0.28	0.45	0.50	0.49
Uniform Delay, d1	65.2	36.0	22.1	68.2	29.2	0.0	49.0	46.8	0.0	68.9	56.0	55.8
Progression Factor	1.14	0.34	0.03	1.18	1.27	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	2.8	0.1	6.2	0.1	0.1	0.1	7.0	0.4	0.6	0.7	2.1
Delay (s)	78.3	15.2	0.7	86.6	37.3	0.1	49.1	53.8	0.4	69.5	56.7	57.9
Level of Service	E	B	A	F	D	A	D	D	A	E	E	E
Approach Delay (s)		21.6			39.6			38.6			58.4	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM Average Control Delay	35.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



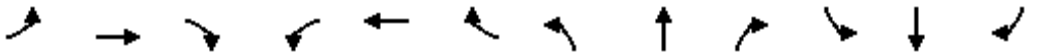
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	2376	22	40	1211	71	46	39	35	106	3	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	2501	23	42	1275	75	48	41	37	112	3	28
RTOR Reduction (vph)	0	0	5	0	0	22	0	0	35	0	0	26
Lane Group Flow (vph)	31	2501	18	42	1275	53	48	41	2	112	3	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	102.7	102.7	7.8	105.5	105.5	10.6	8.7	8.7	13.1	10.3	10.3
Effective Green, g (s)	5.0	102.7	102.7	7.8	105.5	105.5	10.6	8.7	8.7	13.1	10.3	10.3
Actuated g/C Ratio	0.03	0.68	0.68	0.05	0.70	0.70	0.07	0.06	0.06	0.09	0.07	0.07
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.5	2.5	2.0	3.1	3.1
Lane Grp Cap (vph)	59	3482	1084	92	3576	1113	125	108	92	155	128	109
v/s Ratio Prot	0.02	c0.49		c0.02	0.25		0.03	c0.02		c0.06	0.00	
v/s Ratio Perm			0.01			0.03			0.00			0.00
v/c Ratio	0.53	0.72	0.02	0.46	0.36	0.05	0.38	0.38	0.02	0.72	0.02	0.02
Uniform Delay, d1	71.3	14.7	7.5	69.0	8.8	6.8	66.6	68.1	66.6	66.7	65.2	65.1
Progression Factor	1.35	0.36	0.03	0.86	0.44	0.31	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.8	0.0	1.1	0.1	0.0	0.7	1.6	0.1	13.1	0.1	0.1
Delay (s)	98.8	6.1	0.3	60.4	3.9	2.2	67.3	69.7	66.7	79.8	65.2	65.2
Level of Service	F	A	A	E	A	A	E	E	E	E	E	E
Approach Delay (s)		7.2			5.5			67.9			76.6	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



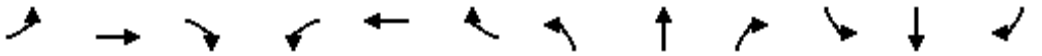
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	1380	1074	1113	820	186	563	1024	496	158	903	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.7	3.0	2.0	4.6	3.0	4.7	-0.4	3.0
Lane Util. Factor	0.94	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4990	3539	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4990	3539	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	1453	1131	1172	863	196	593	1078	522	166	951	38
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	31	1453	1131	1172	863	196	593	1078	522	166	951	38
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.4	48.0	150.0	36.0	78.9	150.0	25.0	28.4	150.0	13.9	25.0	150.0
Effective Green, g (s)	6.4	51.0	150.0	37.0	81.9	150.0	26.0	31.8	150.0	14.9	28.4	150.0
Actuated g/C Ratio	0.04	0.34	1.00	0.25	0.55	1.00	0.17	0.21	1.00	0.10	0.19	1.00
Clearance Time (s)	4.0	6.0		4.0	5.7		3.0	8.0		5.7	3.0	
Vehicle Extension (s)	2.0	4.1		3.0	4.5		4.1	4.1		4.1	4.1	
Lane Grp Cap (vph)	213	1203	1583	847	2776	1583	595	1078	1583	341	963	1583
v/s Ratio Prot	0.01	c0.41		c0.34	0.17		c0.17	c0.21		0.05	0.19	
v/s Ratio Perm			0.71			0.12			0.33			0.02
v/c Ratio	0.15	1.21	0.71	1.38	0.31	0.12	1.00	1.00	0.33	0.49	0.99	0.02
Uniform Delay, d1	69.2	49.5	0.0	56.5	18.6	0.0	62.0	59.1	0.0	63.9	60.6	0.0
Progression Factor	0.73	0.75	1.00	0.70	0.77	1.00	0.51	0.62	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	99.3	2.0	178.9	0.2	0.1	29.5	22.7	0.4	1.6	25.8	0.0
Delay (s)	50.4	136.7	2.0	218.3	14.5	0.1	60.9	59.3	0.4	65.5	86.4	0.0
Level of Service	D	F	A	F	B	A	E	E	A	E	F	A
Approach Delay (s)		77.4			120.3			45.7			80.5	
Approach LOS		E			F			D			F	

Intersection Summary			
HCM Average Control Delay	81.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	116.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	215	4	160	57	15	48	215	1651	117	314	1855	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	2.0	3.0	3.0	3.0	3.0	2.6		9.0	2.6	2.6
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.86		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	6344		3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	6344		3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	226	4	168	60	16	51	226	1738	123	331	1953	193
RTOR Reduction (vph)	0	0	149	0	0	48	0	6	0	0	0	58
Lane Group Flow (vph)	226	4	19	60	16	3	226	1855	0	331	1953	135
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8						6
Actuated Green, G (s)	14.7	14.7	14.7	8.0	8.0	8.0	14.7	82.0		19.3	93.6	93.6
Effective Green, g (s)	15.7	16.7	16.7	10.0	10.0	10.0	15.7	85.4		21.3	97.0	97.0
Actuated g/C Ratio	0.10	0.11	0.11	0.07	0.07	0.07	0.10	0.57		0.14	0.65	0.65
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	6.0		11.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	359	207	176	229	124	106	359	3612		487	3288	1024
v/s Ratio Prot	c0.07	0.00		c0.02	0.01		c0.07	0.29		0.10	c0.38	
v/s Ratio Perm			0.01			0.00						0.09
v/c Ratio	0.63	0.02	0.11	0.26	0.13	0.03	0.63	0.51		0.68	0.59	0.13
Uniform Delay, d1	64.4	59.4	59.9	66.5	65.9	65.5	64.4	19.7		61.1	15.2	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.27	0.13		0.96	0.88	1.47
Incremental Delay, d2	3.4	0.0	0.3	0.6	0.5	0.1	1.3	0.2		3.1	0.2	0.0
Delay (s)	67.8	59.4	60.2	67.1	66.4	65.6	83.1	2.8		61.4	13.6	15.1
Level of Service	E	E	E	E	E	E	F	A		E	B	B
Approach Delay (s)		64.5			66.4			11.5			20.1	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰↰		↱↱
Volume (vph)	0	1181	10	0	1822	579	0	0	0	118	0	553
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			0%			0%			0%	
Total Lost time (s)		4.7	5.7		4.7	3.0				4.3		4.3
Lane Util. Factor		0.91	1.00		0.91	1.00				0.97		0.88
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5212	1623		5085	1583				3433		2787
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5212	1623		5085	1583				3433		2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1243	11	0	1918	609	0	0	0	124	0	582
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	1243	7	0	1918	609	0	0	0	124	0	570
Turn Type			Perm			Free				Prot		custom
Protected Phases		2			6					4		
Permitted Phases			2			Free						4
Actuated Green, G (s)		45.0	45.0		45.0	75.0				19.0		19.0
Effective Green, g (s)		46.0	45.0		46.0	75.0				20.0		20.0
Actuated g/C Ratio		0.61	0.60		0.61	1.00				0.27		0.27
Clearance Time (s)		5.7	5.7		5.7					5.3		5.3
Vehicle Extension (s)		4.3	4.3		3.9					2.0		2.0
Lane Grp Cap (vph)		3197	974		3119	1583				915		743
v/s Ratio Prot		0.24			c0.38					0.04		
v/s Ratio Perm			0.00			0.38						c0.20
v/c Ratio		0.39	0.01		0.61	0.38				0.14		0.77
Uniform Delay, d1		7.4	6.0		9.0	0.0				20.9		25.4
Progression Factor		0.86	0.54		0.87	1.00				1.00		1.00
Incremental Delay, d2		0.3	0.0		0.3	0.6				0.0		4.3
Delay (s)		6.7	3.2		8.2	0.6				20.9		29.7
Level of Service		A	A		A	A				C		C
Approach Delay (s)		6.7			6.4			0.0			28.1	
Approach LOS		A			A			A			C	

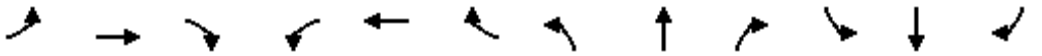
Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	918	381	0	1811	590	429
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	0%	
Total Lost time (s)	4.7	4.7		4.7	6.3	6.3
Lane Util. Factor	0.91	1.00		0.91	0.94	0.88
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	5212	1623		5085	4990	2787
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	5212	1623		5085	4990	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	966	401	0	1906	621	452
RTOR Reduction (vph)	0	141	0	0	0	360
Lane Group Flow (vph)	966	260	0	1906	621	92
Turn Type		Perm				Perm
Protected Phases	2			6	8	
Permitted Phases		2				8
Actuated Green, G (s)	47.7	47.7		47.7	14.3	14.3
Effective Green, g (s)	48.7	48.7		48.7	15.3	15.3
Actuated g/C Ratio	0.65	0.65		0.65	0.20	0.20
Clearance Time (s)	5.7	5.7		5.7	7.3	7.3
Vehicle Extension (s)	3.8	3.8		4.3	2.0	2.0
Lane Grp Cap (vph)	3384	1054		3302	1018	569
v/s Ratio Prot	0.19			c0.37	c0.12	
v/s Ratio Perm		0.16				0.03
v/c Ratio	0.29	0.25		0.58	0.61	0.16
Uniform Delay, d1	5.7	5.5		7.4	27.1	24.6
Progression Factor	0.72	3.19		0.82	1.00	1.00
Incremental Delay, d2	0.1	0.1		0.6	0.8	0.0
Delay (s)	4.1	17.6		6.6	27.9	24.6
Level of Service	A	B		A	C	C
Approach Delay (s)	8.1			6.6	26.5	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

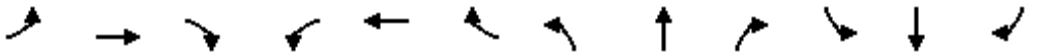
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	130	275	353	219	36	329	665	298	97	1262	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-5%			0%	
Total Lost time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	137	289	372	231	38	346	700	314	102	1328	101
RTOR Reduction (vph)	0	0	234	0	0	30	0	0	95	0	0	46
Lane Group Flow (vph)	65	137	55	372	231	8	346	700	219	102	1328	55
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.3	17.1	17.1	20.5	31.7	31.7	23.1	84.1	104.6	8.9	69.9	69.9
Effective Green, g (s)	6.3	17.1	17.1	20.5	31.7	31.7	23.1	84.1	104.6	8.9	69.9	69.9
Actuated g/C Ratio	0.04	0.11	0.11	0.14	0.21	0.21	0.15	0.56	0.70	0.06	0.47	0.47
Clearance Time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	4.3	4.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	144	403	180	469	748	335	542	2922	1132	204	2370	738
v/s Ratio Prot	0.02	0.04		c0.11	c0.07		c0.10	0.13	0.03	0.03	c0.26	
v/s Ratio Perm			0.03			0.01			0.11			0.03
v/c Ratio	0.45	0.34	0.31	0.79	0.31	0.02	0.64	0.24	0.19	0.50	0.56	0.07
Uniform Delay, d1	70.2	61.2	61.0	62.7	49.9	46.9	59.5	16.7	7.9	68.4	28.9	22.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.72	0.19	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.7	1.2	8.4	0.4	0.0	1.7	0.2	0.0	0.7	1.0	0.2
Delay (s)	71.0	61.9	62.3	71.1	50.3	46.9	50.1	12.2	1.6	69.1	29.9	22.3
Level of Service	E	E	E	E	D	D	D	B	A	E	C	C
Approach Delay (s)		63.3			62.1			19.4			32.0	
Approach LOS		E			E			B			C	

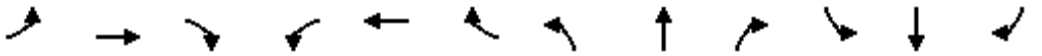
Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



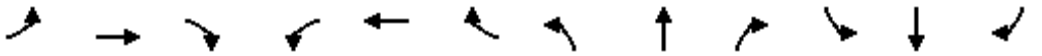
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	18	50	138	12	35	13	521	145	80	1328	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	1491		1593	1490		1593	4577	1425	1593	3185	1425
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1593	1491		1593	1490		1593	4577	1425	1593	3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	19	53	145	13	37	14	548	153	84	1398	3
RTOR Reduction (vph)	0	49	0	0	30	0	0	0	60	0	0	1
Lane Group Flow (vph)	9	23	0	145	20	0	14	548	93	84	1398	2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	0.6	8.4		14.1	21.9		1.9	69.7	69.7	8.8	76.6	76.6
Effective Green, g (s)	1.6	9.9		15.1	23.4		2.9	72.7	72.7	9.8	79.6	79.6
Actuated g/C Ratio	0.01	0.08		0.13	0.19		0.02	0.61	0.61	0.08	0.66	0.66
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	21	123		200	291		38	2773	863	130	2113	945
v/s Ratio Prot	0.01	c0.02		c0.09	0.01		0.01	0.12		c0.05	c0.44	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.43	0.19		0.72	0.07		0.37	0.20	0.11	0.65	0.66	0.00
Uniform Delay, d1	58.7	51.3		50.5	39.4		57.6	10.6	10.0	53.4	12.1	6.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.6		10.5	0.1		2.2	0.2	0.3	8.0	0.9	0.0
Delay (s)	63.8	51.9		61.0	39.5		59.8	10.7	10.2	61.4	13.1	6.8
Level of Service	E	D		E	D		E	B	B	E	B	A
Approach Delay (s)		53.3			55.5			11.6			15.8	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



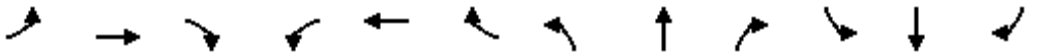
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	9	24	62	3	62	6	587	51	43	1115	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	9	25	65	3	65	6	618	54	45	1174	3
RTOR Reduction (vph)	0	0	23	0	0	55	0	0	29	0	0	2
Lane Group Flow (vph)	7	9	2	65	3	10	6	618	25	45	1174	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	5.6	5.6	4.7	9.5	9.5	0.8	28.3	28.3	2.5	30.0	30.0
Effective Green, g (s)	0.8	5.6	5.6	4.7	9.5	9.5	0.8	28.3	28.3	2.5	30.0	30.0
Actuated g/C Ratio	0.01	0.09	0.09	0.08	0.16	0.16	0.01	0.46	0.46	0.04	0.49	0.49
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	23	324	145	136	550	246	23	2355	733	72	2497	777
v/s Ratio Prot	0.00	0.00		c0.04	0.00		0.00	0.12		c0.03	c0.23	
v/s Ratio Perm			0.00			c0.01			0.02			0.00
v/c Ratio	0.30	0.03	0.02	0.48	0.01	0.04	0.26	0.26	0.03	0.62	0.47	0.00
Uniform Delay, d1	29.9	25.3	25.2	27.0	21.8	21.9	29.9	10.0	8.9	28.8	10.3	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	0.0	0.0	2.6	0.0	0.1	6.0	0.1	0.0	15.7	0.1	0.0
Delay (s)	37.2	25.3	25.3	29.7	21.8	22.0	35.8	10.1	9.0	44.5	10.4	7.9
Level of Service	D	C	C	C	C	C	D	B	A	D	B	A
Approach Delay (s)		27.3			25.7			10.2			11.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



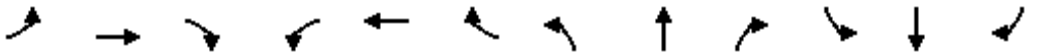
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	133	4	2	85	8	7	1	0	36	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	4.5	4.5	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539	1583	1770	1863		1770	1863	1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539	1583	1770	1863		1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	140	4	2	89	8	7	1	0	38	5	1
RTOR Reduction (vph)	0	0	3	0	0	5	0	0	0	0	0	1
Lane Group Flow (vph)	0	140	1	2	89	3	7	1	0	38	5	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		8.4	8.4	0.4	14.3	14.3	0.4	2.5		12.0	14.1	14.1
Effective Green, g (s)		8.4	8.4	0.4	14.3	14.3	0.4	2.5		12.0	14.1	14.1
Actuated g/C Ratio		0.19	0.19	0.01	0.33	0.33	0.01	0.06		0.28	0.33	0.33
Clearance Time (s)		5.0	5.0	5.0	4.5	4.5	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		687	307	16	1169	523	16	108		491	607	515
v/s Ratio Prot		c0.04		0.00	c0.03		0.00	0.00		c0.02	c0.00	
v/s Ratio Perm			0.00			0.00						0.00
v/c Ratio		0.20	0.00	0.12	0.08	0.01	0.44	0.01		0.08	0.01	0.00
Uniform Delay, d1		14.6	14.1	21.3	10.0	9.7	21.3	19.2		11.6	9.9	9.8
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1	0.0	3.5	0.0	0.0	18.0	0.0		0.1	0.0	0.0
Delay (s)		14.8	14.1	24.8	10.0	9.7	39.3	19.3		11.6	9.9	9.8
Level of Service		B	B	C	A	A	D	B		B	A	A
Approach Delay (s)		14.8			10.3			36.8			11.4	
Approach LOS		B			B			D			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.10		
Actuated Cycle Length (s)	43.3	Sum of lost time (s)	14.5
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



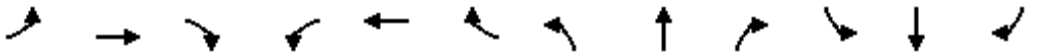
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	148	19	210	56	75	12	640	449	64	975	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.3	4.3	4.0	3.3	4.3
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	156	20	221	59	79	13	674	473	67	1026	8
RTOR Reduction (vph)	0	0	17	0	0	59	0	0	276	0	0	4
Lane Group Flow (vph)	31	156	3	221	59	20	13	674	197	67	1026	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.4	10.6	10.6	7.3	16.5	16.5	0.6	27.7	27.7	3.0	30.1	30.1
Effective Green, g (s)	2.4	11.6	11.6	8.3	17.5	17.5	1.6	29.7	28.7	4.0	32.1	31.1
Actuated g/C Ratio	0.03	0.17	0.17	0.12	0.25	0.25	0.02	0.43	0.42	0.06	0.47	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.5	5.5	2.0	5.5	5.5
Lane Grp Cap (vph)	62	596	267	213	899	402	41	2192	659	103	2369	715
v/s Ratio Prot	0.02	c0.04		c0.12	0.02		0.01	0.13		c0.04	c0.20	
v/s Ratio Perm			0.00			0.01			0.12			0.00
v/c Ratio	0.50	0.26	0.01	1.04	0.07	0.05	0.32	0.31	0.30	0.65	0.43	0.01
Uniform Delay, d1	32.7	24.9	23.9	30.3	19.5	19.4	33.1	12.9	13.4	31.8	12.3	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.1	0.0	71.8	0.0	0.0	1.6	0.2	0.6	10.7	0.3	0.0
Delay (s)	35.0	25.0	23.9	102.1	19.5	19.4	34.7	13.1	14.0	42.4	12.6	10.4
Level of Service	C	C	C	F	B	B	C	B	B	D	B	B
Approach Delay (s)		26.4			70.4			13.7			14.4	
Approach LOS		C			E			B			B	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



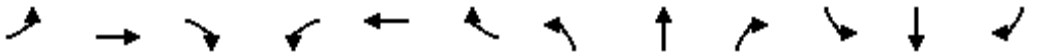
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	673	0	3	314	0	37	2	23	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0			5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00			1.00
Frt	1.00	1.00		1.00	1.00		1.00	1.00	0.85			0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	3539		1770	3539		1770	1863	1583			1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	3539		1770	3539		1770	1863	1583			1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	708	0	3	331	0	39	2	24	0	0	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	16	0	0	1
Lane Group Flow (vph)	1	708	0	3	331	0	39	2	8	0	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	16.2		0.4	16.2		1.7	15.5	15.5			8.8
Effective Green, g (s)	0.4	16.2		0.4	16.2		1.7	15.5	15.5			8.8
Actuated g/C Ratio	0.01	0.34		0.01	0.34		0.04	0.33	0.33			0.19
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	15	1217		15	1217		64	613	521			296
v/s Ratio Prot	0.00	c0.20		c0.00	0.09		c0.02	0.00				
v/s Ratio Perm									c0.00			0.00
v/c Ratio	0.07	0.58		0.20	0.27		0.61	0.00	0.02			0.00
Uniform Delay, d1	23.2	12.7		23.2	11.2		22.4	10.6	10.7			15.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00			1.00
Incremental Delay, d2	1.9	0.7		6.5	0.1		15.3	0.0	0.0			0.0
Delay (s)	25.0	13.4		29.7	11.3		37.7	10.6	10.7			15.6
Level of Service	C	B		C	B		D	B	B			B
Approach Delay (s)		13.4			11.5			26.9			15.6	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	47.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



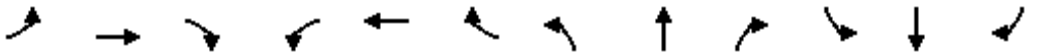
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	732	68	8	212	4	86	28	32	6	100	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	2.5	3.5	3.5	2.5	3.5	3.5	2.5	3.5	3.5	2.5	3.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	38	771	72	8	223	4	91	29	34	6	105	65
RTOR Reduction (vph)	0	0	48	0	0	3	0	0	23	0	0	47
Lane Group Flow (vph)	38	771	24	8	223	1	91	29	11	6	105	18
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.5	15.8	15.8	0.6	14.9	14.9	3.4	15.9	15.9	0.6	13.1	13.1
Effective Green, g (s)	2.5	17.8	16.8	1.6	16.9	15.9	4.4	17.9	16.9	1.6	15.1	14.1
Actuated g/C Ratio	0.05	0.35	0.33	0.03	0.33	0.31	0.09	0.35	0.33	0.03	0.30	0.28
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	1238	522	56	1175	494	153	655	526	56	553	439
v/s Ratio Prot	c0.02	c0.22		0.00	0.06		c0.05	c0.02		0.00	c0.06	
v/s Ratio Perm			0.02			0.00			0.01			0.01
v/c Ratio	0.44	0.62	0.05	0.14	0.19	0.00	0.59	0.04	0.02	0.11	0.19	0.04
Uniform Delay, d1	23.5	13.8	11.6	24.0	12.1	12.0	22.4	10.9	11.4	24.0	13.3	13.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	1.0	0.0	1.2	0.1	0.0	6.1	0.0	0.0	0.8	0.2	0.0
Delay (s)	27.0	14.7	11.6	25.2	12.2	12.0	28.5	10.9	11.5	24.8	13.5	13.5
Level of Service	C	B	B	C	B	B	C	B	B	C	B	B
Approach Delay (s)		15.0			12.6			21.4			13.9	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



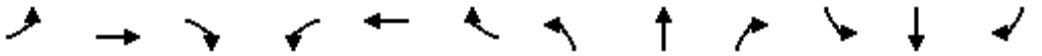
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	870	7	13	225	0	19	3	86	0	2	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539		1770	1863	1583		1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539		1770	1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	916	7	14	237	0	20	3	91	0	2	17
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	65	0	0	14
Lane Group Flow (vph)	15	916	3	14	237	0	20	3	26	0	2	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	20.2	20.2	0.4	20.2		0.5	14.1	14.1		8.6	8.6
Effective Green, g (s)	0.4	20.2	20.2	0.4	20.2		0.5	14.1	14.1		8.6	8.6
Actuated g/C Ratio	0.01	0.41	0.41	0.01	0.41		0.01	0.28	0.28		0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	14	1438	643	14	1438		18	529	449		322	274
v/s Ratio Prot	c0.01	c0.26		0.01	0.07		c0.01	0.00			0.00	
v/s Ratio Perm			0.00						c0.02			0.00
v/c Ratio	1.07	0.64	0.00	1.00	0.16		1.11	0.01	0.06		0.01	0.01
Uniform Delay, d1	24.7	11.8	8.8	24.7	9.4		24.6	12.8	13.0		17.0	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	265.6	0.9	0.0	240.5	0.1		250.0	0.0	0.1		0.0	0.0
Delay (s)	290.2	12.7	8.8	265.2	9.4		274.6	12.8	13.0		17.0	17.0
Level of Service	F	B	A	F	A		F	B	B		B	B
Approach Delay (s)		17.2			23.7			58.9			17.0	
Approach LOS		B			C			E			B	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	49.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



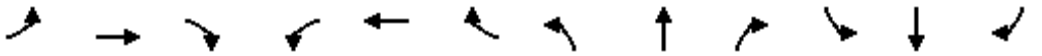
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	821	98	84	200	3	20	36	47	18	89	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.2	4.2	3.5	3.2	4.2	3.5	2.5	3.5	3.5	2.5	3.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	864	103	88	211	3	21	38	49	19	94	19
RTOR Reduction (vph)	0	0	60	0	0	2	0	0	39	0	0	16
Lane Group Flow (vph)	40	864	43	88	211	1	21	38	10	19	94	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.7	24.9	24.9	6.6	28.8	28.8	2.3	11.4	11.4	1.1	10.2	10.2
Effective Green, g (s)	3.7	26.9	25.9	7.6	30.8	29.8	3.3	13.4	12.4	2.1	12.2	11.2
Actuated g/C Ratio	0.06	0.43	0.41	0.12	0.49	0.48	0.05	0.21	0.20	0.03	0.19	0.18
Clearance Time (s)	4.5	5.2	5.2	4.5	5.2	5.2	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	104	1518	654	215	1738	752	93	398	313	59	362	283
v/s Ratio Prot	0.02	c0.24		c0.05	0.06		c0.01	0.02		0.01	c0.05	
v/s Ratio Perm			0.03			0.00			0.01			0.00
v/c Ratio	0.38	0.57	0.07	0.41	0.12	0.00	0.23	0.10	0.03	0.32	0.26	0.01
Uniform Delay, d1	28.4	13.5	11.1	25.5	8.6	8.6	28.5	19.8	20.3	29.6	21.4	21.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.8	0.1	1.3	0.1	0.0	1.2	0.1	0.0	3.2	0.4	0.0
Delay (s)	30.8	14.3	11.2	26.7	8.7	8.6	29.7	19.9	20.3	32.8	21.8	21.2
Level of Service	C	B	B	C	A	A	C	B	C	C	C	C
Approach Delay (s)		14.7			14.0			22.0			23.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	12.7
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



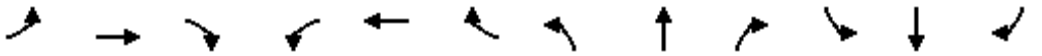
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	890	0	50	0	0	94	26	1369	29	505	1503	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97		1.00			1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	937	0	53	0	0	99	27	1441	31	532	1582	259
RTOR Reduction (vph)	0	0	31	0	0	7	0	0	14	0	0	103
Lane Group Flow (vph)	937	0	22	0	0	92	27	1441	17	532	1582	156
Turn Type	Prot		custom	Prot		Over	Prot		Perm	Prot		Perm
Protected Phases	7		4	3		1	5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	38.4		38.4			38.0	3.5	38.1	38.1	38.0	72.6	72.6
Effective Green, g (s)	38.4		38.4			38.0	3.5	38.1	38.1	38.0	72.6	72.6
Actuated g/C Ratio	0.30		0.30			0.29	0.03	0.29	0.29	0.29	0.56	0.56
Clearance Time (s)	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1018		469			465	48	1496	466	519	2851	887
v/s Ratio Prot	c0.27		0.01			0.06	0.02	c0.28		c0.30	0.31	
v/s Ratio Perm									0.01			0.10
v/c Ratio	0.92		0.05			0.20	0.56	0.96	0.04	1.03	0.55	0.18
Uniform Delay, d1	44.1		32.5			34.3	62.2	45.0	32.6	45.8	18.1	13.9
Progression Factor	1.00		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.1		0.0			0.2	14.2	15.3	0.0	46.0	0.2	0.1
Delay (s)	57.1		32.5			34.5	76.5	60.3	32.6	91.8	18.4	14.0
Level of Service	E		C			C	E	E	C	F	B	B
Approach Delay (s)		55.8			34.5			60.0			34.4	
Approach LOS		E			C			E			C	

Intersection Summary			
HCM Average Control Delay	46.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	129.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



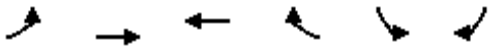
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1141	66	31	1151	12	0	8	2	103	22	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	4.0	4.0	2.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	1201	69	33	1212	13	0	8	2	108	23	20
RTOR Reduction (vph)	0	0	42	0	0	8	0	0	2	0	0	13
Lane Group Flow (vph)	8	1201	27	33	1212	5	0	8	0	108	23	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	21.6	21.6	1.2	22.3	22.3		9.8	9.8	6.0	20.8	20.8
Effective Green, g (s)	1.5	24.6	22.6	2.2	25.3	23.3		10.8	10.8	7.0	21.8	21.8
Actuated g/C Ratio	0.03	0.42	0.39	0.04	0.43	0.40		0.18	0.18	0.12	0.37	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	45	2135	611	66	2195	629		343	292	211	693	589
v/s Ratio Prot	0.00	0.24		c0.02	c0.24			0.00		c0.06	c0.01	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.18	0.56	0.04	0.50	0.55	0.01		0.02	0.00	0.51	0.03	0.01
Uniform Delay, d1	27.9	12.9	11.2	27.7	12.4	10.7		19.6	19.5	24.2	11.7	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.3	0.0	5.8	0.3	0.0		0.0	0.0	2.1	0.0	0.0
Delay (s)	29.8	13.3	11.3	33.5	12.7	10.7		19.6	19.5	26.3	11.7	11.6
Level of Service	C	B	B	C	B	B		B	B	C	B	B
Approach Delay (s)		13.3			13.2			19.6			22.1	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



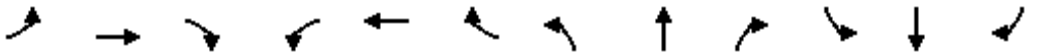
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	1101	1	235	1025	34	62	469	356	99	853	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	145	1159	1	247	1079	36	65	494	375	104	898	419
RTOR Reduction (vph)	0	0	1	0	0	23	0	0	146	0	0	151
Lane Group Flow (vph)	145	1159	0	247	1079	13	65	494	229	104	898	268
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.7	29.2	29.2	12.0	32.5	32.5	3.7	26.3	26.3	5.2	27.8	27.8
Effective Green, g (s)	8.7	29.2	29.2	12.0	32.5	32.5	3.7	26.3	26.3	5.2	27.8	27.8
Actuated g/C Ratio	0.09	0.31	0.31	0.13	0.35	0.35	0.04	0.28	0.28	0.06	0.30	0.30
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	322	1602	499	444	1783	555	137	1443	449	193	1525	475
v/s Ratio Prot	0.04	c0.23		c0.07	c0.21		0.02	0.10		c0.03	c0.18	
v/s Ratio Perm			0.00			0.01			0.14			0.17
v/c Ratio	0.45	0.72	0.00	0.56	0.61	0.02	0.47	0.34	0.51	0.54	0.59	0.57
Uniform Delay, d1	39.7	28.2	21.8	37.9	24.8	19.7	43.5	26.3	27.8	42.6	27.6	27.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	1.6	0.0	1.5	0.6	0.0	2.6	0.1	0.9	2.9	0.6	1.5
Delay (s)	40.7	29.8	21.8	39.4	25.4	19.7	46.1	26.5	28.7	45.5	28.2	28.9
Level of Service	D	C	C	D	C	B	D	C	C	D	C	C
Approach Delay (s)		31.0			27.8			28.7			29.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



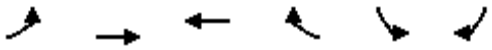
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	254	1318	977	98	50	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	267	1387	1028	103	53	87
RTOR Reduction (vph)	0	0	0	69	0	72
Lane Group Flow (vph)	267	1387	1028	34	53	15
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	14.5	39.1	19.6	19.6	10.1	10.1
Effective Green, g (s)	14.5	39.1	19.6	19.6	10.1	10.1
Actuated g/C Ratio	0.24	0.66	0.33	0.33	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	434	3359	1684	524	302	270
v/s Ratio Prot	c0.15	0.27	c0.20		c0.03	
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.62	0.41	0.61	0.07	0.18	0.05
Uniform Delay, d1	19.9	4.7	16.6	13.5	21.0	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1	0.7	0.1	0.3	0.1
Delay (s)	22.5	4.8	17.3	13.6	21.3	20.6
Level of Service	C	A	B	B	C	C
Approach Delay (s)		7.6	16.9		20.9	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	59.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



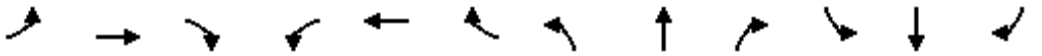
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	523	835	10	168	654	145	29	520	395	242	629	392
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	4.0	3.0	5.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	551	879	11	177	688	153	31	547	416	255	662	413
RTOR Reduction (vph)	0	0	7	0	0	118	0	0	173	0	0	230
Lane Group Flow (vph)	551	879	4	177	688	35	31	547	243	255	662	183
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.0	30.4	30.4	9.3	20.7	20.7	2.2	27.1	27.1	8.2	33.1	33.1
Effective Green, g (s)	20.0	33.4	31.4	10.3	23.7	21.7	3.2	29.1	28.1	9.2	35.1	34.1
Actuated g/C Ratio	0.21	0.35	0.33	0.11	0.25	0.23	0.03	0.30	0.29	0.10	0.37	0.36
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.8	4.8	3.0	4.8	4.8
Lane Grp Cap (vph)	715	1769	518	368	1255	358	114	1541	463	329	1859	562
v/s Ratio Prot	c0.16	c0.17		0.05	0.14		0.01	0.11		c0.07	0.13	
v/s Ratio Perm			0.00			0.02			c0.15			0.12
v/c Ratio	0.77	0.50	0.01	0.48	0.55	0.10	0.27	0.35	0.52	0.78	0.36	0.33
Uniform Delay, d1	35.8	24.7	21.8	40.3	31.5	29.4	45.3	26.1	28.4	42.4	22.2	22.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.2	0.0	1.0	0.5	0.1	1.3	0.3	1.9	10.9	0.2	0.7
Delay (s)	41.0	24.9	21.8	41.3	32.0	29.5	46.6	26.4	30.3	53.3	22.4	23.2
Level of Service	D	C	C	D	C	C	D	C	C	D	C	C
Approach Delay (s)		31.0			33.2			28.6			28.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



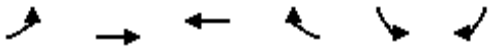
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1472	934	144	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0		5.0
Lane Util. Factor		0.91	0.91	1.00		1.00
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		5085	5085	1583		1583
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		5085	5085	1583		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1549	983	152	0	35
RTOR Reduction (vph)	0	0	0	68	0	28
Lane Group Flow (vph)	0	1549	983	84	0	7
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)		23.5	23.5	23.5		8.8
Effective Green, g (s)		23.5	23.5	23.5		8.8
Actuated g/C Ratio		0.56	0.56	0.56		0.21
Clearance Time (s)		5.0	5.0	5.0		5.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		2825	2825	879		329
v/s Ratio Prot		c0.30	0.19			
v/s Ratio Perm				0.05		c0.00
v/c Ratio		0.55	0.35	0.10		0.02
Uniform Delay, d1		6.0	5.2	4.4		13.3
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.2	0.1	0.0		0.0
Delay (s)		6.2	5.3	4.5		13.4
Level of Service		A	A	A		B
Approach Delay (s)		6.2	5.1		13.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



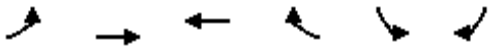
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1364	102	4	896	63	151	63	14	184	112	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	5.0	3.0	4.0	5.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	1436	107	4	943	66	159	66	15	194	118	33
RTOR Reduction (vph)	0	0	61	0	0	40	0	0	12	0	0	26
Lane Group Flow (vph)	6	1436	46	4	943	26	159	66	3	194	118	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.7	23.9	23.9	0.7	23.9	23.9	9.7	11.4	11.4	10.4	12.1	12.1
Effective Green, g (s)	1.7	25.9	24.9	1.7	25.9	24.9	10.7	13.4	12.4	11.4	14.1	13.1
Actuated g/C Ratio	0.03	0.40	0.39	0.03	0.40	0.39	0.17	0.21	0.19	0.18	0.22	0.20
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	4.8	4.8	3.0	4.8	4.8	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	2045	612	47	2045	612	294	388	305	313	408	322
v/s Ratio Prot	c0.00	c0.28		0.00	0.19		0.09	0.04		c0.11	c0.06	
v/s Ratio Perm			0.03			0.02			0.00			0.00
v/c Ratio	0.13	0.70	0.07	0.09	0.46	0.04	0.54	0.17	0.01	0.62	0.29	0.02
Uniform Delay, d1	30.6	16.0	12.5	30.6	14.1	12.3	24.6	20.9	21.0	24.5	21.0	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.3	0.1	0.8	0.3	0.1	2.0	0.2	0.0	3.6	0.4	0.0
Delay (s)	31.9	17.4	12.6	31.4	14.5	12.4	26.6	21.1	21.0	28.1	21.4	20.5
Level of Service	C	B	B	C	B	B	C	C	C	C	C	C
Approach Delay (s)		17.1			14.4			24.8			25.1	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



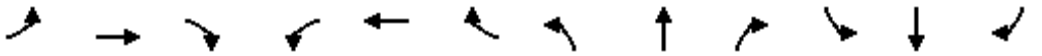
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	169	1394	907	162	56	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	178	1467	955	171	59	60
RTOR Reduction (vph)	0	0	0	111	0	48
Lane Group Flow (vph)	178	1467	955	60	59	12
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	8.0	30.8	17.8	17.8	10.2	10.2
Effective Green, g (s)	8.0	30.8	17.8	17.8	10.2	10.2
Actuated g/C Ratio	0.16	0.60	0.35	0.35	0.20	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	278	3071	1775	552	354	317
v/s Ratio Prot	c0.10	c0.29	0.19		c0.03	
v/s Ratio Perm				0.04		0.01
v/c Ratio	0.64	0.48	0.54	0.11	0.17	0.04
Uniform Delay, d1	20.2	5.6	13.3	11.2	16.9	16.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.1	0.3	0.1	0.2	0.0
Delay (s)	25.1	5.7	13.6	11.3	17.1	16.5
Level of Service	C	A	B	B	B	B
Approach Delay (s)		7.8	13.3		16.8	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	73	1377	1044	38	121	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	4.5	3.5	4.5
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	1449	1099	40	127	26
RTOR Reduction (vph)	0	0	0	24	0	20
Lane Group Flow (vph)	77	1449	1099	16	127	6
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.8	27.5	19.2	19.2	11.5	11.5
Effective Green, g (s)	4.8	29.5	21.2	20.2	12.5	11.5
Actuated g/C Ratio	0.10	0.60	0.43	0.41	0.26	0.23
Clearance Time (s)	4.5	5.5	5.5	5.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	173	3061	2200	653	452	372
v/s Ratio Prot	0.04	c0.28	0.22		c0.07	
v/s Ratio Perm				0.01		0.00
v/c Ratio	0.45	0.47	0.50	0.03	0.28	0.02
Uniform Delay, d1	20.8	5.4	10.1	8.6	14.6	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.1	0.2	0.0	0.3	0.0
Delay (s)	22.7	5.5	10.2	8.6	15.0	14.4
Level of Service	C	A	B	A	B	B
Approach Delay (s)		6.4	10.2		14.9	
Approach LOS		A	B		B	

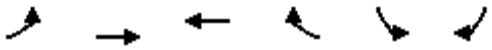
Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	1290	74	265	823	284	207	913	541	379	865	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	3.0	2.7	2.7	3.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	131	1358	78	279	866	299	218	961	569	399	911	325
RTOR Reduction (vph)	0	0	53	0	0	185	0	0	134	0	0	150
Lane Group Flow (vph)	131	1358	26	279	866	114	218	961	435	399	911	175
Heavy Vehicles (%)	2%	4%	2%	2%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.9	36.8	36.8	10.0	37.9	37.9	11.3	36.0	36.0	14.0	38.7	38.7
Effective Green, g (s)	10.9	39.8	37.8	12.0	40.2	40.2	13.3	38.0	38.0	15.0	40.7	40.7
Actuated g/C Ratio	0.09	0.34	0.32	0.10	0.34	0.34	0.11	0.32	0.32	0.13	0.34	0.34
Clearance Time (s)	5.0	6.0	6.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	4.7	4.7	3.0	3.0	3.0	3.0	4.8	4.8	3.0	4.7	4.7
Lane Grp Cap (vph)	315	1671	504	347	1688	526	384	1627	506	433	1742	542
v/s Ratio Prot	0.04	c0.27		c0.08	0.17		0.06	0.19		c0.12	c0.18	
v/s Ratio Perm			0.02			0.07			c0.27			0.11
v/c Ratio	0.42	0.81	0.05	0.80	0.51	0.22	0.57	0.59	0.86	0.92	0.52	0.32
Uniform Delay, d1	50.9	36.1	28.1	52.2	31.5	28.1	50.0	33.9	37.9	51.3	31.3	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	3.5	0.1	12.7	0.3	0.2	1.9	0.8	14.7	24.9	0.5	0.7
Delay (s)	51.8	39.6	28.1	64.9	31.7	28.3	52.0	34.7	52.6	76.3	31.8	29.5
Level of Service	D	D	C	E	C	C	D	C	D	E	C	C
Approach Delay (s)		40.0			37.4			42.7			42.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	40.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	118.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

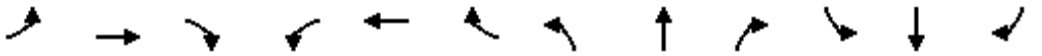
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	573	1515	1089	80	135	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1478	1770	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	603	1595	1146	84	142	260
RTOR Reduction (vph)	0	0	0	47	0	178
Lane Group Flow (vph)	603	1595	1146	37	142	82
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	9.0	36.1	23.1	23.1	6.7	15.7
Effective Green, g (s)	10.0	39.1	26.1	26.1	7.7	17.7
Actuated g/C Ratio	0.17	0.65	0.44	0.44	0.13	0.30
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	573	2310	1542	644	228	963
v/s Ratio Prot	c0.18	c0.45	0.32		c0.08	0.01
v/s Ratio Perm				0.02		0.02
v/c Ratio	1.05	0.69	0.74	0.06	0.62	0.08
Uniform Delay, d1	24.9	6.6	14.1	9.8	24.7	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.1	1.0	2.1	0.1	3.8	0.0
Delay (s)	77.1	7.6	16.2	9.8	28.5	15.3
Level of Service	E	A	B	A	C	B
Approach Delay (s)		26.6	15.8		19.9	
Approach LOS		C	B		B	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	13.1
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

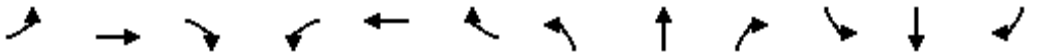
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	543	1129	48	78	791	100	128	0	409	271	0	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0	5.0	2.0	4.0	3.0	2.0		3.0	3.7		2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.99	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1526	1770	3539	1562	1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1526	1770	3539	1562	1770		1583	1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	572	1188	51	82	833	105	135	0	431	285	0	267
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	158	0	0	0
Lane Group Flow (vph)	572	1188	25	82	833	105	135	0	273	285	0	267
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot		Perm	Prot		Free	Prot		custom	Prot		Free
Protected Phases	7	4		3	8		5			6		
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	32.0	53.3	53.3	7.0	28.3	110.8	15.0		15.0	15.8		110.8
Effective Green, g (s)	34.0	55.3	54.3	9.0	30.3	110.8	17.0		16.0	17.8		110.8
Actuated g/C Ratio	0.31	0.50	0.49	0.08	0.27	1.00	0.15		0.14	0.16		1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0		4.0	5.7		
Vehicle Extension (s)	2.0	4.8	4.8	2.0	4.8		2.0		2.0	2.0		
Lane Grp Cap (vph)	543	1766	748	144	968	1562	272		229	284		1583
v/s Ratio Prot	c0.32	0.34		0.05	c0.24		0.08			c0.16		
v/s Ratio Perm			0.02			0.07			c0.17			0.17
v/c Ratio	1.05	0.67	0.03	0.57	0.86	0.07	0.50		1.19	1.00		0.17
Uniform Delay, d1	38.4	20.9	14.6	49.0	38.2	0.0	43.0		47.4	46.5		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	53.4	1.3	0.0	3.1	8.5	0.1	0.5		120.8	54.3		0.2
Delay (s)	91.8	22.2	14.7	52.1	46.8	0.1	43.5		168.2	100.8		0.2
Level of Service	F	C	B	D	D	A	D		F	F		A
Approach Delay (s)		44.0			42.4			138.4			52.2	
Approach LOS		D			D			F			D	

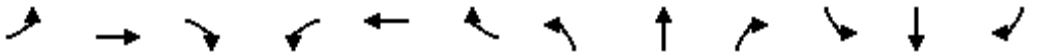
Intersection Summary			
HCM Average Control Delay	58.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	12.7
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	462	1033	66	184	46	343	1497	74	55	1123	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	180	486	1087	69	194	48	361	1576	78	58	1182	186
RTOR Reduction (vph)	0	0	107	0	0	25	0	0	45	0	0	0
Lane Group Flow (vph)	180	486	980	69	194	23	361	1576	33	58	1182	186
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	9.3	60.0	60.0	4.0	55.7	55.7	11.0	33.0	33.0	3.0	25.0	120.0
Effective Green, g (s)	10.3	63.0	63.0	5.0	58.2	58.2	12.0	36.0	36.0	4.0	28.0	120.0
Actuated g/C Ratio	0.09	0.52	0.52	0.04	0.49	0.49	0.10	0.30	0.30	0.03	0.23	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	295	1858	831	74	2466	768	343	1526	475	59	1495	1583
v/s Ratio Prot	0.05	0.14		c0.04	0.04		c0.11	c0.31		0.03	0.18	
v/s Ratio Perm			c0.62			0.01			0.02			0.12
v/c Ratio	0.61	0.26	1.18	0.93	0.08	0.03	1.05	1.03	0.07	0.98	0.79	0.12
Uniform Delay, d1	52.9	15.7	28.5	57.3	16.5	16.2	54.0	42.0	30.0	58.0	43.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1	92.9	80.5	0.0	0.0	63.0	31.9	0.3	110.3	3.1	0.2
Delay (s)	55.5	15.8	121.4	137.8	16.6	16.2	117.0	73.9	30.3	168.3	46.4	0.2
Level of Service	E	B	F	F	B	B	F	E	C	F	D	A
Approach Delay (s)		85.3			43.4			80.0			45.3	
Approach LOS		F			D			E			D	

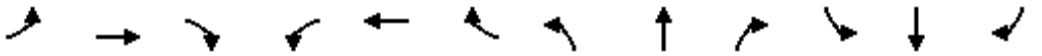
Intersection Summary			
HCM Average Control Delay	70.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	65	24	380	372	434	187	878	600	513	591	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0	5.0	3.0	2.6	5.0	5.0	2.6	3.0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1545	3433	1863	1565	1770	3539	1570	3433	3539	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1545	3433	1863	1565	1770	3539	1570	3433	3539	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	68	25	400	392	457	197	924	632	540	622	57
RTOR Reduction (vph)	0	0	22	0	0	157	0	0	87	0	0	0
Lane Group Flow (vph)	5	68	3	400	392	300	197	924	545	540	622	57
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		pm+ov	Prot		pm+ov	Prot		Free
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	1.6	9.1	9.1	17.4	24.9	41.6	11.7	22.2	39.6	16.7	28.2	85.4
Effective Green, g (s)	2.6	9.1	10.1	17.4	24.9	41.6	12.7	25.6	39.6	16.7	31.6	85.4
Actuated g/C Ratio	0.03	0.11	0.12	0.20	0.29	0.49	0.15	0.30	0.46	0.20	0.37	1.00
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	6.0	5.0	5.0	6.0	
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0	2.0	3.9	3.0	3.0	3.9	
Lane Grp Cap (vph)	54	199	183	699	543	854	263	1061	728	671	1310	1548
v/s Ratio Prot	0.00	0.04		0.12	c0.21	0.07	0.11	c0.26	c0.15	c0.16	0.18	
v/s Ratio Perm			0.00			0.12			0.19			0.04
v/c Ratio	0.09	0.34	0.02	0.57	0.72	0.35	0.75	0.87	0.75	0.80	0.47	0.04
Uniform Delay, d1	40.3	35.4	33.3	30.6	27.1	13.5	34.8	28.3	18.8	32.8	20.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.4	0.0	1.1	4.7	0.3	9.8	8.2	4.2	7.0	0.4	0.0
Delay (s)	40.5	35.7	33.3	31.8	31.9	13.8	44.6	36.5	23.0	39.8	20.9	0.0
Level of Service	D	D	C	C	C	B	D	D	C	D	C	A
Approach Delay (s)		35.4			25.2			32.6			28.3	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	85.4	Sum of lost time (s)	12.6
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

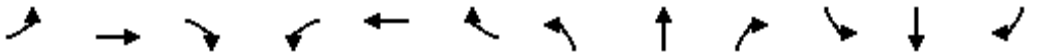
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	493	3	28	829	437	2	753	27	310	709	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	4.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1554	3433	3539	1562	3433	3539	1562	3433	3539	1559
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1554	3433	3539	1562	3433	3539	1562	3433	3539	1559
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	519	3	29	873	460	2	793	28	326	746	19
RTOR Reduction (vph)	0	0	2	0	0	0	0	0	0	0	0	10
Lane Group Flow (vph)	47	519	1	29	873	460	2	793	28	326	746	9
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	3		4	8		5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)	5.2	20.7	20.7	10.9	25.4	92.1	1.4	30.9	92.1	11.6	41.1	41.1
Effective Green, g (s)	6.2	21.7	21.7	11.9	26.4	92.1	2.4	31.9	92.1	12.6	42.1	42.1
Actuated g/C Ratio	0.07	0.24	0.24	0.13	0.29	1.00	0.03	0.35	1.00	0.14	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	5.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	3.0		2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)	231	834	366	444	1014	1562	89	1226	1562	470	1618	713
v/s Ratio Prot	0.01	c0.15		0.01	c0.25		0.00	c0.22		c0.09	0.21	
v/s Ratio Perm			0.00			0.29			0.02			0.01
v/c Ratio	0.20	0.62	0.00	0.07	0.86	0.29	0.02	0.65	0.02	0.69	0.46	0.01
Uniform Delay, d1	40.6	31.5	26.9	35.2	31.1	0.0	43.7	25.4	0.0	37.9	17.2	13.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.0	0.0	0.0	7.6	0.5	0.0	1.6	0.0	3.6	0.4	0.0
Delay (s)	40.8	32.6	26.9	35.2	38.7	0.5	43.7	26.9	0.0	41.5	17.6	13.7
Level of Service	D	C	C	D	D	A	D	C	A	D	B	B
Approach Delay (s)		33.2			25.7			26.0			24.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	92.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

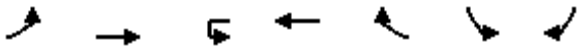
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	10	154	20	3	1	61	1078	7	1	878	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1798	1478		1778		1770	3539	1583	1770	3539	1583
Flt Permitted		0.97	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1798	1478		1778		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	11	162	21	3	1	64	1135	7	1	924	11
RTOR Reduction (vph)	0	0	137	0	1	0	0	0	2	0	0	5
Lane Group Flow (vph)	0	40	25	0	24	0	64	1135	5	1	924	6
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		5.6	5.6		0.5		1.6	24.1	24.1	0.4	22.9	22.9
Effective Green, g (s)		7.5	7.5		2.4		2.6	27.1	27.1	1.4	25.9	25.9
Actuated g/C Ratio		0.15	0.15		0.05		0.05	0.56	0.56	0.03	0.53	0.53
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1	2.0	4.1	4.1
Lane Grp Cap (vph)		276	227		87		94	1965	879	51	1878	840
v/s Ratio Prot		c0.02			c0.01		c0.04	c0.32		0.00	0.26	
v/s Ratio Perm			0.02						0.00			0.00
v/c Ratio		0.14	0.11		0.28		0.68	0.58	0.01	0.02	0.49	0.01
Uniform Delay, d1		17.9	17.8		22.4		22.7	7.1	4.8	23.0	7.3	5.4
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1		0.6		14.9	0.5	0.0	0.1	0.3	0.0
Delay (s)		18.0	17.9		23.0		37.6	7.6	4.8	23.1	7.6	5.4
Level of Service		B	B		C		D	A	A	C	A	A
Approach Delay (s)		17.9			23.0			9.2			7.6	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	7.4
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



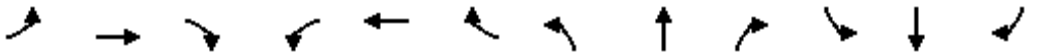
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	868	2222	0	1665	58	87	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	4.0	5.0	4.0
Lane Util. Factor	1.00	0.91		0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085		5085	1548	1770	1562
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085		5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	914	2339	0	1753	61	92	221
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	914	2339	0	1753	61	92	221
Confl. Peds. (#/hr)					5		5
Turn Type	Prot		Prot		Free		Free
Protected Phases	5	2	1	6		7	
Permitted Phases					Free		Free
Actuated Green, G (s)	61.0	125.0		59.0	150.0	15.0	150.0
Effective Green, g (s)	61.0	125.0		59.0	150.0	15.0	150.0
Actuated g/C Ratio	0.41	0.83		0.39	1.00	0.10	1.00
Clearance Time (s)	5.0	5.0		5.0		5.0	
Vehicle Extension (s)	3.0	3.0		3.0		3.0	
Lane Grp Cap (vph)	720	4238		2000	1548	177	1562
v/s Ratio Prot	c0.52	0.46		c0.34		c0.05	
v/s Ratio Perm					0.04		0.14
v/c Ratio	1.27	0.55		0.88	0.04	0.52	0.14
Uniform Delay, d1	44.5	3.9		42.1	0.0	64.1	0.0
Progression Factor	0.42	0.40		0.74	1.00	1.00	1.00
Incremental Delay, d2	122.3	0.0		5.4	0.0	10.5	0.2
Delay (s)	140.9	1.6		36.7	0.0	74.6	0.2
Level of Service	F	A		D	A	E	A
Approach Delay (s)		40.7		35.5		22.1	
Approach LOS		D		D		C	

Intersection Summary			
HCM Average Control Delay	37.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	119.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2202	107	100	1603	120	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.0	3.0	3.0	3.6	3.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1548	1770	4916	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1548	1770	4916	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2318	113	105	1687	126	157
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2318	113	105	1687	126	157
Confl. Peds. (#/hr)		5				5
Parking (#/hr)				0		
Turn Type		Free	Prot			Free
Protected Phases	4		3	8	2	
Permitted Phases		Free				Free
Actuated Green, G (s)	106.4	150.0	12.9	123.3	16.1	150.0
Effective Green, g (s)	109.4	150.0	13.9	126.3	17.1	150.0
Actuated g/C Ratio	0.73	1.00	0.09	0.84	0.11	1.00
Clearance Time (s)	6.0		4.0	6.0	4.6	
Vehicle Extension (s)	4.1		2.0	4.1	2.0	
Lane Grp Cap (vph)	3709	1548	164	4139	202	1562
v/s Ratio Prot	c0.46		c0.06	0.34	c0.07	
v/s Ratio Perm		0.07				0.10
v/c Ratio	0.62	0.07	0.64	0.41	0.62	0.10
Uniform Delay, d1	10.1	0.0	65.6	2.9	63.4	0.0
Progression Factor	0.24	1.00	1.04	0.76	1.00	1.00
Incremental Delay, d2	0.7	0.1	5.6	0.3	4.3	0.1
Delay (s)	3.1	0.1	74.1	2.4	67.6	0.1
Level of Service	A	A	E	A	E	A
Approach Delay (s)	3.0			6.6	30.2	
Approach LOS	A			A	C	

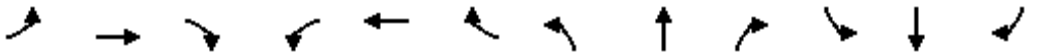
Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	257	2087	1	44	1502	954	3	5	32	414	3	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.3	2.3	3.0	2.3	3.0		3.0	6.3	5.0	5.0	3.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.99		1.00	0.97	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	1510	1770	5085	1562		1828	1542	3221	1616	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	1510	1770	5085	1562		1828	1542	3221	1616	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	271	2197	1	46	1581	1004	3	5	34	436	3	194
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	30	0	0	0
Lane Group Flow (vph)	271	2197	1	46	1581	1004	0	8	4	292	147	194
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Perm	Prot		Free	Split		custom	Split		Free
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			Free			1			Free
Actuated Green, G (s)	27.8	100.9	100.9	8.0	81.1	150.0		1.5	18.6	18.6	18.6	150.0
Effective Green, g (s)	28.8	104.3	104.3	9.0	84.5	150.0		2.5	19.6	20.9	20.9	150.0
Actuated g/C Ratio	0.19	0.70	0.70	0.06	0.56	1.00		0.02	0.13	0.14	0.14	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7			4.0	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	340	3536	1050	106	2865	1562		30	201	449	225	1583
v/s Ratio Prot	c0.15	0.43		0.03	0.31			0.00		0.09	0.09	
v/s Ratio Perm			0.00			c0.64			0.00			0.12
v/c Ratio	0.80	0.62	0.00	0.43	0.55	0.64		0.27	0.02	0.65	0.65	0.12
Uniform Delay, d1	57.8	12.3	7.0	68.0	20.8	0.0		72.8	56.8	61.1	61.1	0.0
Progression Factor	1.34	0.27	0.40	0.90	0.72	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.1	0.7	0.0	2.5	0.2	1.8		4.7	0.0	3.4	6.7	0.2
Delay (s)	87.4	4.0	2.8	63.9	15.0	1.8		77.6	56.9	64.4	67.8	0.2
Level of Service	F	A	A	E	B	A		E	E	E	E	A
Approach Delay (s)		13.1			10.8			60.8			45.5	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

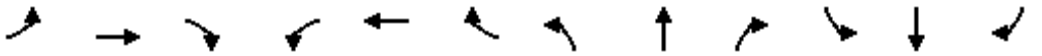
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	2	36	14	1	65	15	2438	43	101	2419	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.86	1.00	0.97	0.86	1.00
Frpb, ped/bikes		1.00	0.96	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1777	1527	1681	1695	1583	1770	6408	1550	3433	6408	1546
Flt Permitted		0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1777	1527	1681	1695	1583	1770	6408	1550	3433	6408	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	2	38	15	1	68	16	2566	45	106	2546	3
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	10	0	0	1
Lane Group Flow (vph)	0	62	2	8	8	68	16	2566	35	106	2546	2
Confl. Peds. (#/hr)			5						5			5
Turn Type	Split		Perm	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	1	1		2	2		3	8		7	4	
Permitted Phases			1			Free			8			4
Actuated Green, G (s)		8.4	8.4	5.7	5.7	150.0	2.9	108.6	108.6	8.9	114.6	114.6
Effective Green, g (s)		9.4	9.4	6.7	6.7	150.0	3.9	112.0	112.0	9.9	118.0	118.0
Actuated g/C Ratio		0.06	0.06	0.04	0.04	1.00	0.03	0.75	0.75	0.07	0.79	0.79
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0	2.8	2.8		2.0	3.7	3.7	2.0	3.7	3.7
Lane Grp Cap (vph)		111	96	75	76	1583	46	4785	1157	227	5041	1216
v/s Ratio Prot		c0.03		c0.00	0.00		0.01	c0.40		c0.03	0.40	
v/s Ratio Perm			0.00			0.04			0.02			0.00
v/c Ratio		0.56	0.02	0.11	0.11	0.04	0.35	0.54	0.03	0.47	0.51	0.00
Uniform Delay, d1		68.3	66.0	68.8	68.8	0.0	71.8	8.0	4.9	67.5	5.7	3.4
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.11	0.13	0.05	0.90	0.76	0.77
Incremental Delay, d2		3.4	0.0	0.6	0.5	0.1	1.4	0.1	0.0	0.5	0.3	0.0
Delay (s)		71.7	66.0	69.3	69.3	0.1	81.4	1.2	0.2	61.4	4.6	2.6
Level of Service		E	E	E	E	A	F	A	A	E	A	A
Approach Delay (s)		69.6			13.2			1.7			6.8	
Approach LOS		E			B			A			A	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

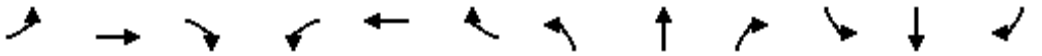
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	2223	180	366	2311	133	207	78	310	63	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	6408	1537	3433	6408	1560	1681	1730	1583	1681	1717	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	6408	1537	3433	6408	1560	1681	1730	1583	1681	1717	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	2340	189	385	2433	140	218	82	326	66	16	7
RTOR Reduction (vph)	0	0	67	0	0	0	0	0	233	0	0	0
Lane Group Flow (vph)	15	2340	122	385	2433	140	148	152	93	41	41	7
Confl. Peds. (#/hr)			10			10						10
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Free
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	6.4	80.8	80.8	22.8	97.2	150.0	18.3	18.3	18.3	9.7	9.7	150.0
Effective Green, g (s)	7.4	84.2	81.8	23.8	100.6	150.0	19.3	19.3	19.3	10.7	10.7	150.0
Actuated g/C Ratio	0.05	0.56	0.55	0.16	0.67	1.00	0.13	0.13	0.13	0.07	0.07	1.00
Clearance Time (s)	4.0	6.4	6.4	4.0	6.4		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.0	3.7	3.7	2.0	3.7		2.5	2.5	2.5	3.0	3.0	
Lane Grp Cap (vph)	169	3597	838	545	4298	1560	216	223	204	120	122	1560
v/s Ratio Prot	0.00	c0.37		c0.11	0.38		c0.09	0.09		c0.02	0.02	
v/s Ratio Perm			0.08			0.09			0.06			0.00
v/c Ratio	0.09	0.65	0.15	0.71	0.57	0.09	0.69	0.68	0.46	0.34	0.34	0.00
Uniform Delay, d1	68.1	22.7	16.8	59.8	13.1	0.0	62.4	62.4	60.5	66.3	66.3	0.0
Progression Factor	0.75	0.91	1.35	1.07	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.8	0.3	1.6	0.1	0.1	8.0	7.6	1.2	1.7	1.6	0.0
Delay (s)	51.1	21.6	23.0	65.5	10.5	0.1	70.4	70.0	61.7	68.0	67.9	0.0
Level of Service	D	C	C	E	B	A	E	E	E	E	E	A
Approach Delay (s)		21.9			17.1			65.8			62.6	
Approach LOS		C			B			E			E	

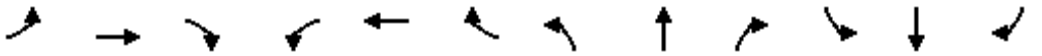
Intersection Summary			
HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	1443	772	84	1564	399	910	528	44	933	779	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4	4.0	4.0	6.4	4.0	4.0	6.0	4.0	7.7	6.7	4.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.97	0.91	1.00	0.94	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	3433	5085	1583	4990	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	3433	5085	1583	4990	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	321	1519	813	88	1646	420	958	556	46	982	820	316
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	321	1519	813	88	1646	420	958	556	46	982	820	316
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	15.0	50.9	150.0	7.4	40.9	150.0	42.0	24.3	150.0	43.3	28.6	150.0
Effective Green, g (s)	15.0	50.9	150.0	7.4	40.9	150.0	42.0	24.3	150.0	43.3	28.6	150.0
Actuated g/C Ratio	0.10	0.34	1.00	0.05	0.27	1.00	0.28	0.16	1.00	0.29	0.19	1.00
Clearance Time (s)	6.4	6.4		4.0	6.4		4.0	6.0		7.7	6.7	
Vehicle Extension (s)	2.0	3.7		2.0	4.1		2.0	4.1		3.0	4.5	
Lane Grp Cap (vph)	343	2174	1583	169	1747	1583	961	824	1583	1440	970	1583
v/s Ratio Prot	c0.09	0.24		0.03	c0.26		c0.28	0.11		0.20	c0.16	
v/s Ratio Perm			0.51			0.27			0.03			0.20
v/c Ratio	0.94	0.70	0.51	0.52	0.94	0.27	1.00	0.67	0.03	0.68	0.85	0.20
Uniform Delay, d1	67.0	42.9	0.0	69.6	53.4	0.0	53.9	59.1	0.0	47.3	58.6	0.0
Progression Factor	0.77	0.67	1.00	1.06	0.58	1.00	1.00	1.00	1.00	0.56	0.62	1.00
Incremental Delay, d2	27.2	0.8	0.9	1.1	9.8	0.3	28.0	2.4	0.0	1.2	6.6	0.2
Delay (s)	79.1	29.7	0.9	75.0	40.6	0.3	82.0	61.6	0.0	27.8	42.9	0.2
Level of Service	E	C	A	E	D	A	F	E	A	C	D	A
Approach Delay (s)		26.9			34.2			72.3			29.5	
Approach LOS		C			C			E			C	

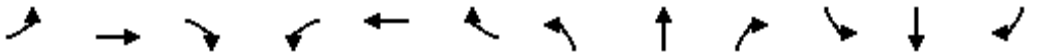
Intersection Summary			
HCM Average Control Delay	37.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	2364	4	13	2092	249	67	0	141	106	1	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	1525	1770	5085	1525	1681	1681	1523	1681	1687	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	1525	1770	5085	1525	1681	1681	1523	1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	2488	4	14	2202	262	71	0	148	112	1	31
RTOR Reduction (vph)	0	0	1	0	0	63	0	0	86	0	0	29
Lane Group Flow (vph)	52	2488	3	14	2202	199	35	36	62	56	57	2
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	9.6	109.8	109.8	2.0	102.2	102.2	8.5	8.5	8.5	11.1	11.1	11.1
Effective Green, g (s)	9.6	109.8	109.8	2.0	102.2	102.2	8.5	8.5	8.5	11.1	11.1	11.1
Actuated g/C Ratio	0.06	0.73	0.73	0.01	0.68	0.68	0.06	0.06	0.06	0.07	0.07	0.07
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	2.0	2.0	3.6	3.6	3.6
Lane Grp Cap (vph)	113	3722	1116	24	3465	1039	95	95	86	124	125	117
v/s Ratio Prot	0.03	c0.49		0.01	c0.43		0.02	0.02		0.03	c0.03	
v/s Ratio Perm			0.00			0.13			c0.04			0.00
v/c Ratio	0.46	0.67	0.00	0.58	0.64	0.19	0.37	0.38	0.72	0.45	0.46	0.02
Uniform Delay, d1	67.7	10.5	5.4	73.6	13.4	8.8	68.2	68.2	69.6	66.5	66.6	64.4
Progression Factor	0.73	0.32	0.07	1.30	0.40	0.13	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.4	0.0	13.3	0.5	0.2	0.9	0.9	22.2	3.2	3.2	0.1
Delay (s)	50.5	3.7	0.4	108.9	6.0	1.4	69.0	69.1	91.8	69.7	69.7	64.5
Level of Service	D	A	A	F	A	A	E	E	F	E	E	E
Approach Delay (s)		4.7			6.1			84.5			68.6	
Approach LOS		A			A			F			E	

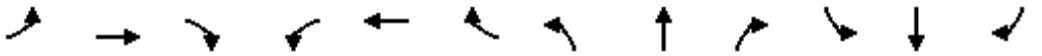
Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	169	2354	68	297	1936	211	306	235	325	705	95	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3485	6504	1590	3433	5085	1554	3433	5085	1539	3433	5085	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3485	6504	1590	3433	5085	1554	3433	5085	1539	3433	5085	1545
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	178	2478	72	313	2038	222	322	247	342	742	100	129
RTOR Reduction (vph)	0	0	18	0	0	78	0	0	119	0	0	102
Lane Group Flow (vph)	178	2478	54	313	2038	144	322	247	223	742	100	27
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	62.5	105.8	14.0	68.5	68.5	43.3	20.5	20.5	33.0	10.2	10.2
Effective Green, g (s)	8.0	62.5	105.8	14.0	68.5	68.5	43.3	20.5	20.5	33.0	10.2	10.2
Actuated g/C Ratio	0.05	0.42	0.71	0.09	0.46	0.46	0.29	0.14	0.14	0.22	0.07	0.07
Clearance Time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.8	4.8	2.5	2.5	4.8	4.8	2.5	3.4	3.4	2.5	3.4	3.4
Lane Grp Cap (vph)	186	2710	1164	320	2322	710	991	695	210	755	346	105
v/s Ratio Prot	0.05	c0.38	0.01	c0.09	0.40		0.09	0.05		c0.22	0.02	
v/s Ratio Perm			0.02			0.09			c0.14			0.02
v/c Ratio	0.96	0.91	0.05	0.98	0.88	0.20	0.32	0.36	1.06	0.98	0.29	0.26
Uniform Delay, d1	70.8	41.2	6.7	67.8	37.0	24.4	41.9	58.8	64.8	58.2	66.5	66.3
Progression Factor	1.18	0.62	0.04	0.71	0.50	0.36	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	45.5	4.8	0.0	36.0	3.2	0.2	0.1	0.4	79.2	28.3	0.5	1.5
Delay (s)	129.2	30.3	0.3	84.2	21.8	8.9	42.0	59.1	144.0	86.5	67.0	67.8
Level of Service	F	C	A	F	C	A	D	E	F	F	E	E
Approach Delay (s)		36.0			28.3			84.9			82.0	
Approach LOS		D			C			F			F	

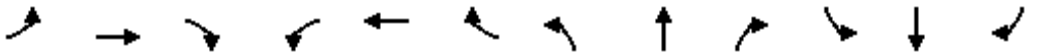
Intersection Summary			
HCM Average Control Delay	45.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	357	2403	696	216	2127	3	188	177	153	14	46	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	6.7	5.7	4.0	4.0	4.6	4.6
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1553	4990	1863	1562	1770	1863	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1553	4990	1863	1562	1770	1863	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	376	2529	733	227	2239	3	198	186	161	15	48	138
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	0	0	0	131
Lane Group Flow (vph)	376	2529	733	227	2239	2	198	186	161	15	48	7
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Free	Prot		Perm	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Actuated Green, G (s)	20.1	92.8	150.0	13.4	86.1	86.1	14.4	22.5	150.0	1.6	8.1	8.1
Effective Green, g (s)	20.1	92.8	150.0	13.4	86.1	86.1	14.4	22.5	150.0	1.6	8.1	8.1
Actuated g/C Ratio	0.13	0.62	1.00	0.09	0.57	0.57	0.10	0.15	1.00	0.01	0.05	0.05
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	6.7	5.7		4.0	4.6	4.6
Vehicle Extension (s)	2.0	4.1		2.0	4.1	4.1	2.0	4.3		2.0	2.0	2.0
Lane Grp Cap (vph)	460	3146	1562	307	2919	891	479	279	1562	19	101	150
v/s Ratio Prot	c0.11	c0.50		0.07	0.44		0.04	c0.10		0.01	0.03	
v/s Ratio Perm			c0.47			0.00			0.10			0.00
v/c Ratio	0.82	0.80	0.47	0.74	0.77	0.00	0.41	0.67	0.10	0.79	0.48	0.05
Uniform Delay, d1	63.2	21.7	0.0	66.6	24.3	13.6	63.8	60.2	0.0	74.0	68.9	67.3
Progression Factor	1.24	0.15	1.00	1.33	0.65	0.18	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.9	0.4	6.5	1.1	0.0	0.2	6.8	0.1	102.4	1.3	0.1
Delay (s)	82.4	4.1	0.4	95.2	16.9	2.4	64.0	67.0	0.1	176.5	70.2	67.3
Level of Service	F	A	A	F	B	A	E	E	A	F	E	E
Approach Delay (s)		11.4			24.1			46.2			76.2	
Approach LOS		B			C			D			E	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



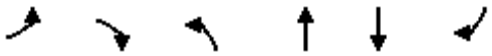
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	354	2018	4	10	1699	111	0	0	0	110	0	659
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4				6.0	6.0	6.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98				1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)	3433	5084		1770	5085	1555				1681	1681	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)	3433	5084		1770	5085	1555				1681	1681	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	373	2124	4	11	1788	117	0	0	0	116	0	694
RTOR Reduction (vph)	0	0	0	0	0	44	0	0	0	0	0	644
Lane Group Flow (vph)	373	2128	0	11	1788	73	0	0	0	58	58	50
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	22.6	114.8		1.2	93.4	93.4				10.8	10.8	10.8
Effective Green, g (s)	22.6	114.8		1.2	93.4	93.4				10.8	10.8	10.8
Actuated g/C Ratio	0.15	0.77		0.01	0.62	0.62				0.07	0.07	0.07
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4				6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.7		2.0	3.7	3.7				2.0	2.0	2.0
Lane Grp Cap (vph)	517	3891		14	3166	968				121	121	201
v/s Ratio Prot	c0.11	0.42		0.01	c0.35					c0.03	0.03	
v/s Ratio Perm						0.05						0.02
v/c Ratio	0.72	0.55		0.79	0.56	0.08				0.48	0.48	0.25
Uniform Delay, d1	60.7	7.1		74.3	16.5	11.2				66.9	66.9	65.8
Progression Factor	0.62	0.04		0.93	1.00	1.39				1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1		117.1	0.7	0.1				1.1	1.1	0.2
Delay (s)	40.5	0.4		186.1	17.1	15.7				68.0	68.0	66.0
Level of Service	D	A		F	B	B				E	E	E
Approach Delay (s)		6.4			18.0			0.0			66.3	
Approach LOS		A			B			A			E	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

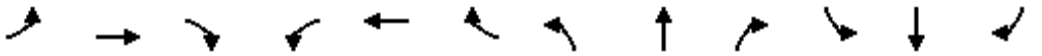
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	110	117	1642	47	64	1923
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	123	1728	49	67	2024
RTOR Reduction (vph)	0	110	0	12	0	0
Lane Group Flow (vph)	116	13	1728	37	67	2024
Turn Type		Perm		Perm	Prot	
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	15.5	15.5	109.5	109.5	8.9	122.4
Effective Green, g (s)	15.5	15.5	109.5	109.5	8.9	122.4
Actuated g/C Ratio	0.10	0.10	0.73	0.73	0.06	0.82
Clearance Time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Vehicle Extension (s)	2.5	2.5	3.5	3.5	2.0	3.7
Lane Grp Cap (vph)	183	164	3712	1156	105	4149
v/s Ratio Prot	c0.07		0.34		c0.04	c0.40
v/s Ratio Perm		0.01		0.02		
v/c Ratio	0.63	0.08	0.47	0.03	0.64	0.49
Uniform Delay, d1	64.5	60.8	8.3	5.6	69.0	4.2
Progression Factor	1.00	1.00	0.48	0.45	1.15	0.70
Incremental Delay, d2	6.1	0.1	0.4	0.0	7.9	0.4
Delay (s)	70.7	60.9	4.4	2.6	87.2	3.3
Level of Service	E	E	A	A	F	A
Approach Delay (s)	65.7		4.4			6.0
Approach LOS	E		A			A

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



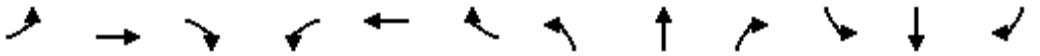
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	118	67	148	1584	1882	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	5085	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	124	71	156	1667	1981	183
RTOR Reduction (vph)	0	65	0	0	0	26
Lane Group Flow (vph)	124	6	156	1667	1981	157
Turn Type		Perm	Prot			Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Actuated Green, G (s)	12.1	12.1	13.5	126.5	108.7	108.7
Effective Green, g (s)	12.1	12.1	13.5	126.5	108.7	108.7
Actuated g/C Ratio	0.08	0.08	0.09	0.84	0.72	0.72
Clearance Time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.1	4.1	4.1
Lane Grp Cap (vph)	277	128	309	4288	3685	1147
v/s Ratio Prot	c0.04		c0.05	0.33	c0.39	
v/s Ratio Perm		0.00				0.10
v/c Ratio	0.45	0.04	0.50	0.39	0.54	0.14
Uniform Delay, d1	65.8	63.6	65.1	2.7	9.3	6.3
Progression Factor	1.00	1.00	1.23	0.63	0.18	0.07
Incremental Delay, d2	0.4	0.1	0.4	0.2	0.5	0.2
Delay (s)	66.2	63.7	80.2	2.0	2.2	0.7
Level of Service	E	E	F	A	A	A
Approach Delay (s)	65.3			8.7	2.1	
Approach LOS	E			A	A	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



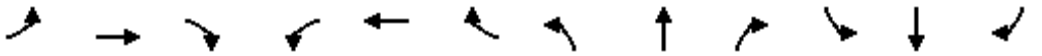
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	11	187	3	39	15	220	1689	8	9	1824	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1718	1583	1770	1784		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.86	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1517	1583	1770	1784		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	12	197	3	41	16	232	1778	8	9	1920	168
RTOR Reduction (vph)	0	0	162	0	9	0	0	0	3	0	0	40
Lane Group Flow (vph)	29	30	35	3	48	0	232	1778	5	9	1920	128
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	4.2	31.2	27.0	0.8	25.6		23.8	100.9	100.9	1.6	78.7	78.7
Effective Green, g (s)	4.2	31.2	27.0	0.8	25.6		23.8	100.9	100.9	1.6	78.7	78.7
Actuated g/C Ratio	0.03	0.21	0.18	0.01	0.17		0.16	0.67	0.67	0.01	0.52	0.52
Clearance Time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	2.5		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	47	321	285	9	304		281	3421	1065	19	2668	831
v/s Ratio Prot	c0.02	c0.00		0.00	c0.03		c0.13	0.35		0.01	c0.38	
v/s Ratio Perm		0.02	0.02						0.00			0.08
v/c Ratio	0.62	0.09	0.12	0.33	0.16		0.83	0.52	0.01	0.47	0.72	0.15
Uniform Delay, d1	72.1	48.0	51.6	74.3	53.0		61.1	12.4	8.1	73.8	27.2	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.58	1.70	1.41	1.06	0.34	0.18
Incremental Delay, d2	15.7	0.2	0.3	7.8	0.2		15.7	0.5	0.0	5.8	0.9	0.1
Delay (s)	87.8	48.1	51.8	82.1	53.2		51.3	21.5	11.4	83.9	10.3	3.4
Level of Service	F	D	D	F	D		D	C	B	F	B	A
Approach Delay (s)		55.5			54.6			24.9			10.1	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.7
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	8	5	147	247	297	32	1550	118	126	1610	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5068	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5068	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	8	5	155	260	313	34	1632	124	133	1695	40
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	2	8	0	155	260	313	34	1632	124	133	1734	0
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	1.1	8.9	8.9	18.8	25.8	150.0	6.4	93.5	150.0	10.2	97.3	
Effective Green, g (s)	1.1	8.9	8.9	18.8	25.8	150.0	6.4	93.5	150.0	10.2	97.3	
Actuated g/C Ratio	0.01	0.06	0.06	0.13	0.17	1.00	0.04	0.62	1.00	0.07	0.65	
Clearance Time (s)	4.0	4.9	4.9	4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	4.3		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	13	111	94	222	609	1583	76	3170	1583	233	3287	
v/s Ratio Prot	0.00	0.00		c0.09	c0.07		0.02	0.32		c0.04	c0.34	
v/s Ratio Perm			0.00			c0.20			0.08			
v/c Ratio	0.15	0.07	0.00	0.70	0.43	0.20	0.45	0.51	0.08	0.57	0.53	
Uniform Delay, d1	74.0	66.6	66.4	62.9	55.5	0.0	70.1	15.7	0.0	67.8	14.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.35	1.00	1.32	0.15	
Incremental Delay, d2	2.0	0.7	0.0	7.5	0.8	0.3	1.1	0.2	0.1	1.5	0.4	
Delay (s)	76.0	67.3	66.4	70.4	56.3	0.3	69.6	5.6	0.1	90.7	2.5	
Level of Service	E	E	E	E	E	A	E	A	A	F	A	
Approach Delay (s)		68.2			35.2			6.4			8.8	
Approach LOS		E			D			A			A	

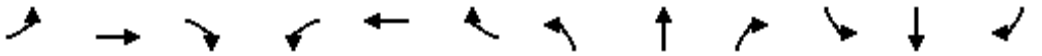
Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	1138	97	44	1707	617	277	1021	62	1029	489	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	5.7	5.7	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.94	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1554	3433	5085	1562	3433	5085	1553	4990	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1554	3433	5085	1562	3433	5085	1553	4990	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	1198	102	46	1797	649	292	1075	65	1083	515	181
RTOR Reduction (vph)	0	0	49	0	0	0	0	0	36	0	0	0
Lane Group Flow (vph)	100	1198	53	46	1797	649	292	1075	29	1083	515	181
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Perm	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			8			Free
Actuated Green, G (s)	5.0	56.8	56.8	4.0	55.8	150.0	16.5	35.8	35.8	33.7	53.0	150.0
Effective Green, g (s)	5.0	56.8	56.8	4.0	55.8	150.0	16.5	35.8	35.8	33.7	53.0	150.0
Actuated g/C Ratio	0.03	0.38	0.38	0.03	0.37	1.00	0.11	0.24	0.24	0.22	0.35	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	3.9	3.9	2.0	3.9		2.0	4.3	4.3	2.0	4.3	
Lane Grp Cap (vph)	114	1926	588	92	1892	1562	378	1214	371	1121	1797	1562
v/s Ratio Prot	c0.03	0.24		0.01	c0.35		0.09	c0.21		c0.22	0.10	
v/s Ratio Perm			0.03			c0.42			0.02			0.12
v/c Ratio	0.88	0.62	0.09	0.50	0.95	0.42	0.77	0.89	0.08	0.97	0.29	0.12
Uniform Delay, d1	72.2	37.9	30.0	72.0	45.7	0.0	64.9	55.1	44.3	57.6	34.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.61	1.00
Incremental Delay, d2	46.8	1.5	0.3	1.6	11.1	0.8	8.6	8.4	0.1	17.4	0.4	0.1
Delay (s)	119.0	39.4	30.3	73.6	56.8	0.8	73.6	63.5	44.4	62.8	21.5	0.1
Level of Service	F	D	C	E	E	A	E	E	D	E	C	A
Approach Delay (s)		44.4			42.5			64.7			44.5	
Approach LOS		D			D			E			D	

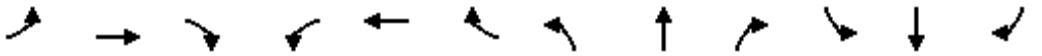
Intersection Summary			
HCM Average Control Delay	47.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	2	22	33	2	141	36	1088	29	70	540	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1777	1583		1779	1583	1770	3525		1770	3532	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1777	1583		1779	1583	1770	3525		1770	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	2	23	35	2	148	38	1145	31	74	568	8
RTOR Reduction (vph)	0	0	21	0	0	119	0	2	0	0	0	0
Lane Group Flow (vph)	0	49	2	0	37	29	38	1174	0	74	576	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		7.7	7.7		15.9	15.9	3.9	38.1		5.4	39.6	
Effective Green, g (s)		8.7	8.7		16.9	16.9	4.9	41.1		6.4	42.6	
Actuated g/C Ratio		0.10	0.10		0.20	0.20	0.06	0.48		0.08	0.50	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		182	162		355	315	102	1708		134	1774	
v/s Ratio Prot		c0.03			c0.02		0.02	c0.33		c0.04	0.16	
v/s Ratio Perm			0.00			0.02						
v/c Ratio		0.27	0.01		0.10	0.09	0.37	0.69		0.55	0.32	
Uniform Delay, d1		35.1	34.2		27.8	27.7	38.5	16.9		37.8	12.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.0	0.0	0.8	1.4		2.8	0.2	
Delay (s)		35.4	34.2		27.8	27.7	39.3	18.3		40.6	12.7	
Level of Service		D	C		C	C	D	B		D	B	
Approach Delay (s)		35.0			27.8			18.9			15.9	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	11.7
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

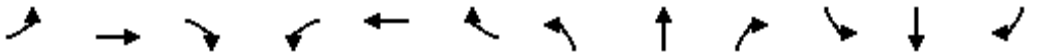


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	187	339	77	710	438	382	764	184	110	385	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1479	1856	3592	1476	3601	3592	1476	3565	5110	1459
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1479	1856	3592	1476	3601	3592	1476	3565	5110	1459
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	197	357	81	747	461	402	804	194	116	405	22
RTOR Reduction (vph)	0	0	110	0	0	241	0	0	98	0	0	15
Lane Group Flow (vph)	16	197	247	81	747	220	402	804	96	116	405	7
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	3.4	28.0	42.8	7.6	32.2	32.2	14.8	30.1	30.1	10.3	25.6	25.6
Effective Green, g (s)	4.4	31.0	44.8	8.6	35.2	35.2	15.8	33.1	33.1	11.3	28.6	28.6
Actuated g/C Ratio	0.05	0.32	0.47	0.09	0.37	0.37	0.17	0.35	0.35	0.12	0.30	0.30
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	86	1167	695	167	1325	545	596	1246	512	422	1532	437
v/s Ratio Prot	0.01	0.05	0.06	c0.04	c0.21		c0.11	c0.22		0.03	0.08	
v/s Ratio Perm			0.11			0.15			0.07			0.00
v/c Ratio	0.19	0.17	0.36	0.49	0.56	0.40	0.67	0.65	0.19	0.27	0.26	0.02
Uniform Delay, d1	43.8	23.0	16.1	41.3	24.0	22.3	37.4	26.2	21.8	38.3	25.4	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.1	0.8	0.8	0.8	2.4	1.4	0.3	0.1	0.2	0.0
Delay (s)	44.2	23.1	16.2	42.1	24.8	23.2	39.8	27.6	22.1	38.4	25.6	23.5
Level of Service	D	C	B	D	C	C	D	C	C	D	C	C
Approach Delay (s)		19.4			25.3			30.3			28.2	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	95.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	716	23	14	985	81	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	3.0	1.3	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	754	24	15	1037	85	138
RTOR Reduction (vph)	0	12	0	0	0	106
Lane Group Flow (vph)	754	12	15	1037	85	32
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	24.3	24.3	1.0	31.0	10.4	10.4
Effective Green, g (s)	27.0	25.3	2.0	33.7	11.4	11.4
Actuated g/C Ratio	0.55	0.51	0.04	0.68	0.23	0.23
Clearance Time (s)	5.7	5.7	4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1934	811	72	2414	408	365
v/s Ratio Prot	0.21		0.01	c0.29	c0.05	
v/s Ratio Perm		0.01				0.02
v/c Ratio	0.39	0.02	0.21	0.43	0.21	0.09
Uniform Delay, d1	6.5	5.9	22.9	3.5	15.4	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.5	0.2	0.1	0.0
Delay (s)	6.7	5.9	23.5	3.7	15.4	15.0
Level of Service	A	A	C	A	B	B
Approach Delay (s)	6.7			4.0	15.1	
Approach LOS	A			A	B	

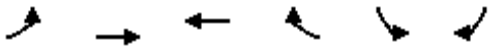
Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	4.3
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	169	558	62	383	218	584	1527	39	82	645	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	114	178	587	65	403	229	615	1607	41	86	679	18
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	114	178	587	65	403	229	615	1607	41	86	679	18
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.3	21.6	120.0	8.0	20.7	120.0	26.0	64.3	120.0	6.4	44.7	120.0
Effective Green, g (s)	10.3	24.3	120.0	9.0	23.4	120.0	27.0	67.3	120.0	7.4	47.7	120.0
Actuated g/C Ratio	0.09	0.20	1.00	0.08	0.19	1.00	0.22	0.56	1.00	0.06	0.40	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	295	717	1562	257	690	1562	772	2852	1562	212	2021	1562
v/s Ratio Prot	0.03	0.05		0.02	c0.11		c0.18	c0.32		0.03	0.13	
v/s Ratio Perm			c0.38			0.15			0.03			0.01
v/c Ratio	0.39	0.25	0.38	0.25	0.58	0.15	0.80	0.56	0.03	0.41	0.34	0.01
Uniform Delay, d1	51.9	40.2	0.0	52.3	43.9	0.0	43.9	16.9	0.0	54.2	25.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.7	0.2	1.7	0.2	5.3	0.8	0.0	0.5	0.1	0.0
Delay (s)	52.2	40.5	0.7	52.5	45.6	0.2	49.3	17.7	0.0	54.6	25.3	0.0
Level of Service	D	D	A	D	D	A	D	B	A	D	C	A
Approach Delay (s)		15.4			31.3			26.0			27.9	
Approach LOS		B			C			C			C	

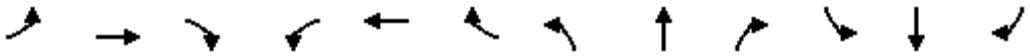
Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.6
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	125	847	611	399	400	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	2.0	2.0	1.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1512	1736	1536
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1512	1736	1536
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	132	892	643	420	421	145
RTOR Reduction (vph)	0	0	0	272	0	45
Lane Group Flow (vph)	132	892	643	148	421	100
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	7.0	28.7	16.7	16.7	16.3	23.3
Effective Green, g (s)	8.0	30.7	18.7	18.7	19.3	29.3
Actuated g/C Ratio	0.15	0.58	0.35	0.35	0.36	0.55
Clearance Time (s)	5.0	4.0	4.0	4.0	4.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	262	2011	1225	533	632	849
v/s Ratio Prot	0.08	c0.26	c0.19		c0.24	0.02
v/s Ratio Perm				0.10		0.04
v/c Ratio	0.50	0.44	0.52	0.28	0.67	0.12
Uniform Delay, d1	20.7	6.3	13.6	12.3	14.1	5.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.2	0.4	0.3	2.7	0.1
Delay (s)	22.2	6.5	14.0	12.6	16.8	5.7
Level of Service	C	A	B	B	B	A
Approach Delay (s)		8.5	13.5		14.0	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	5.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	766	11	63	994	121	31	3	30	127	5	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00			1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3431		1787	3438	1487	1787	1623			1694	1446
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3431		1787	3438	1487	1787	1623			1694	1446
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	200	806	12	66	1046	127	33	3	32	134	5	26
RTOR Reduction (vph)	0	1	0	0	0	71	0	29	0	0	0	0
Lane Group Flow (vph)	200	817	0	66	1046	56	33	6	0	0	139	26
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	8.2	30.0		2.7	24.5	24.5	4.7	4.7			5.1	5.1
Effective Green, g (s)	9.2	32.0		3.7	26.5	26.5	5.7	5.7			6.1	6.1
Actuated g/C Ratio	0.15	0.53		0.06	0.44	0.44	0.09	0.09			0.10	0.10
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	263	1824		110	1513	655	169	154			172	147
v/s Ratio Prot	c0.12	0.24		0.04	c0.30		c0.02	0.00			c0.08	
v/s Ratio Perm						0.04						0.02
v/c Ratio	0.76	0.45		0.60	0.69	0.09	0.20	0.04			0.81	0.18
Uniform Delay, d1	24.4	8.7		27.5	13.6	9.8	25.1	24.8			26.5	24.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	11.0	0.2		5.8	1.4	0.1	0.2	0.0			23.6	0.6
Delay (s)	35.5	8.8		33.3	14.9	9.9	25.3	24.8			50.0	25.3
Level of Service	D	A		C	B	A	C	C			D	C
Approach Delay (s)		14.1			15.4			25.1			46.1	
Approach LOS		B			B			C			D	

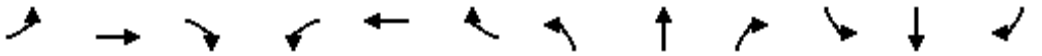
Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	12.7
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	961	282	343	864	130	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1564	1770	3539	1770	1571
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1564	1770	3539	1770	1571
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1012	297	361	909	137	222
RTOR Reduction (vph)	0	59	0	0	0	8
Lane Group Flow (vph)	1012	238	361	909	137	214
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	23.3	32.9	13.1	40.4	9.6	22.7
Effective Green, g (s)	25.3	34.9	14.1	42.4	10.6	24.7
Actuated g/C Ratio	0.42	0.58	0.23	0.71	0.18	0.41
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1492	988	416	2501	313	725
v/s Ratio Prot	c0.29	0.04	c0.20	0.26	c0.08	0.07
v/s Ratio Perm		0.11				0.07
v/c Ratio	0.68	0.24	0.87	0.36	0.44	0.30
Uniform Delay, d1	14.1	6.1	22.1	3.5	22.0	11.8
Progression Factor	1.00	1.00	1.12	1.08	1.00	1.00
Incremental Delay, d2	1.2	0.0	16.2	0.4	0.4	0.1
Delay (s)	15.3	6.2	40.9	4.1	22.4	11.9
Level of Service	B	A	D	A	C	B
Approach Delay (s)	13.2			14.6	15.9	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

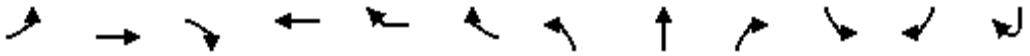
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	953	241	596	611	0	0	0	1135	0	0	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	4.0	4.0				4.0			5.0
Lane Util. Factor		0.91	1.00	0.97	0.95				1.00			1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00				1.00			1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00				1.00			1.00
Frt		1.00	0.85	1.00	1.00				0.86			0.86
Flt Protected		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (prot)		5085	1554	3433	3539				1611			1611
Flt Permitted		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (perm)		5085	1554	3433	3539				1611			1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1003	254	627	643	0	0	0	1195	0	0	646
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1003	196	627	643	0	0	0	1195	0	0	646
Confl. Peds. (#/hr)			5									
Turn Type			Perm	Prot					Free			custom
Protected Phases		2		1								
Permitted Phases			2		Free				Free			4
Actuated Green, G (s)		34.8	34.8	15.5	60.0				60.0			60.0
Effective Green, g (s)		34.8	34.8	15.5	60.0				60.0			60.0
Actuated g/C Ratio		0.58	0.58	0.26	1.00				1.00			1.00
Clearance Time (s)		5.7	5.7	4.0								5.0
Vehicle Extension (s)		3.4	3.4	2.0								3.0
Lane Grp Cap (vph)		2949	901	887	3539				1611			1611
v/s Ratio Prot		0.20		0.18								
v/s Ratio Perm			0.13		0.18				c0.74			0.40
v/c Ratio		0.34	0.22	0.71	0.18				0.74			0.40
Uniform Delay, d1		6.6	6.1	20.2	0.0				0.0			0.0
Progression Factor		0.38	0.16	1.21	1.00				1.00			1.00
Incremental Delay, d2		0.3	0.4	1.2	0.1				3.1			0.2
Delay (s)		2.7	1.4	25.7	0.1				3.1			0.2
Level of Service		A	A	C	A				A			A
Approach Delay (s)		2.5			12.7			3.1			0.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

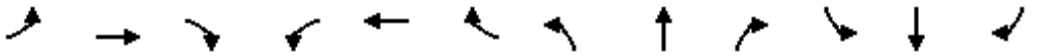
c Critical Lane Group



Movement	EBL	EBT	EBR	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL	SBR	SBR2
Lane Configurations												
Volume (vph)	201	1660	227	718	1065	303	162	375	718	91	327	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	5.7	5.7	5.7	4.0	5.3	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	0.86	0.86	1.00	1.00	0.95	1.00	0.97	0.88	
Frpb, ped/bikes	1.00	1.00	0.98	0.99	1.00	1.00	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	0.94	0.85	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1548	4466	1362	1583	1770	3539	1562	3433	2787	
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1548	4466	1362	1583	1770	3539	1562	3433	2787	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	212	1747	239	756	1121	319	171	395	756	96	344	61
RTOR Reduction (vph)	0	0	0	0	0	171	0	0	0	0	14	0
Lane Group Flow (vph)	212	1747	239	1317	560	148	171	395	756	96	391	0
Confl. Peds. (#/hr)			5		5				5		5	
Turn Type	Prot		Free		Prot	Perm	Prot		Free	Prot	custom	
Protected Phases	5	2		6	6		3	8		7	5	
Permitted Phases			Free			6			Free		4	
Actuated Green, G (s)	13.5	73.1	120.0	55.6	55.6	55.6	37.2	21.9	120.0	10.0	13.5	
Effective Green, g (s)	13.5	73.1	120.0	55.6	55.6	55.6	37.2	21.9	120.0	10.0	13.5	
Actuated g/C Ratio	0.11	0.61	1.00	0.46	0.46	0.46	0.31	0.18	1.00	0.08	0.11	
Clearance Time (s)	4.0	5.7		5.7	5.7	5.7	4.0	5.3		4.0	4.0	
Vehicle Extension (s)	2.0	3.4		3.4	3.4	3.4	4.0	4.0		2.0	2.0	
Lane Grp Cap (vph)	386	2156	1548	2069	631	733	549	646	1562	286	314	
v/s Ratio Prot	0.06	0.49		0.29	c0.41		0.10	c0.11		0.03	c0.14	
v/s Ratio Perm			0.15			0.09			c0.48			
v/c Ratio	0.55	0.81	0.15	0.64	0.89	0.20	0.31	0.61	0.48	0.34	1.24	
Uniform Delay, d1	50.4	18.1	0.0	24.5	29.3	19.1	31.6	45.1	0.0	51.9	53.2	
Progression Factor	0.98	0.89	1.00	0.47	0.48	0.10	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	2.8	0.2	0.6	13.0	0.1	0.4	2.0	1.1	0.3	134.0	
Delay (s)	49.8	18.9	0.2	12.2	27.1	2.0	32.1	47.1	1.1	52.1	187.3	
Level of Service	D	B	A	B	C	A	C	D	A	D	F	
Approach Delay (s)		19.9		14.5				18.8				
Approach LOS		B		B				B				

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

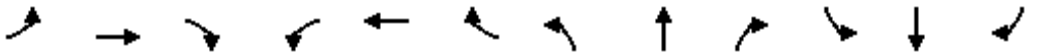
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	195	1961	327	70	1766	32	160	258	143	177	281	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.3	4.0	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.94	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	6408	1562	4990	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	6408	1562	4990	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	205	2064	344	74	1859	34	168	272	151	186	296	168
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	205	2064	344	74	1859	34	168	272	151	186	296	168
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.2	69.1	120.0	7.2	64.1	120.0	10.8	13.7	120.0	11.0	13.5	120.0
Effective Green, g (s)	12.2	69.1	120.0	7.2	64.1	120.0	10.8	13.7	120.0	11.0	13.5	120.0
Actuated g/C Ratio	0.10	0.58	1.00	0.06	0.53	1.00	0.09	0.11	1.00	0.09	0.11	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	3.9		2.0	3.5	
Lane Grp Cap (vph)	349	2928	1562	206	3423	1562	449	581	1562	315	572	1562
v/s Ratio Prot	0.06	c0.41		0.02	c0.29		0.03	c0.05		c0.05	0.06	
v/s Ratio Perm			c0.22			0.02			0.10			0.11
v/c Ratio	0.59	0.70	0.22	0.36	0.54	0.02	0.37	0.47	0.10	0.59	0.52	0.11
Uniform Delay, d1	51.5	18.2	0.0	54.2	18.3	0.0	51.4	49.7	0.0	52.3	50.2	0.0
Progression Factor	0.76	0.47	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.6	0.2	0.4	0.6	0.0	0.2	0.8	0.1	2.0	0.9	0.1
Delay (s)	40.5	9.1	0.2	54.6	19.0	0.0	51.6	50.5	0.1	54.3	51.1	0.1
Level of Service	D	A	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		10.4			20.0			38.0			38.8	
Approach LOS		B			B			D			D	

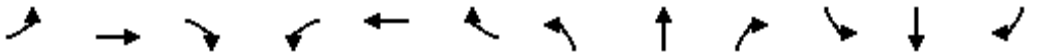
Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.4
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



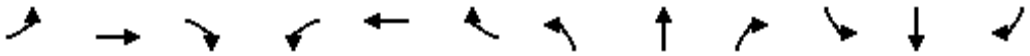
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	403	204	4	39	138	56	6	1270	82	54	1416	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.5	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	424	215	4	41	145	59	6	1337	86	57	1491	274
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	424	215	4	41	145	59	6	1337	86	57	1491	274
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	19.0	26.7	120.0	5.5	12.9	120.0	0.6	61.5	120.0	6.9	67.8	120.0
Effective Green, g (s)	20.0	29.2	120.0	6.5	15.4	120.0	1.6	64.0	120.0	7.9	70.3	120.0
Actuated g/C Ratio	0.17	0.24	1.00	0.05	0.13	1.00	0.01	0.53	1.00	0.07	0.59	1.00
Clearance Time (s)	4.0	5.7		4.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.3		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	572	861	1583	96	454	1583	24	2712	1583	117	2979	1583
v/s Ratio Prot	c0.12	0.06		0.02	c0.04		0.00	c0.26		0.03	c0.29	
v/s Ratio Perm			0.00			0.04			0.05			0.17
v/c Ratio	0.74	0.25	0.00	0.43	0.32	0.04	0.25	0.49	0.05	0.49	0.50	0.17
Uniform Delay, d1	47.5	36.6	0.0	54.9	47.5	0.0	58.6	17.7	0.0	54.1	14.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	0.2	0.0	1.1	0.5	0.0	2.0	0.2	0.1	1.2	0.6	0.2
Delay (s)	52.1	36.8	0.0	56.1	48.1	0.0	60.6	18.0	0.1	55.3	15.2	0.2
Level of Service	D	D	A	E	D	A	E	B	A	E	B	A
Approach Delay (s)		46.6			37.8			17.1			14.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



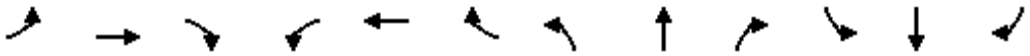
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	126	128	67	182	92	125	1252	51	173	1113	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	133	135	71	192	97	132	1318	54	182	1172	9
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	60	133	135	71	192	97	132	1318	54	182	1172	9
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.8	12.7	120.0	7.7	13.6	120.0	13.2	62.8	120.0	16.7	66.3	120.0
Effective Green, g (s)	7.8	15.2	120.0	8.7	16.1	120.0	14.2	65.3	120.0	17.7	68.8	120.0
Actuated g/C Ratio	0.06	0.13	1.00	0.07	0.13	1.00	0.12	0.54	1.00	0.15	0.57	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	115	448	1583	128	475	1583	209	2767	1583	261	2915	1583
v/s Ratio Prot	0.03	0.04		c0.04	c0.05		c0.07	c0.26		c0.10	0.23	
v/s Ratio Perm			c0.09			0.06			0.03			0.01
v/c Ratio	0.52	0.30	0.09	0.55	0.40	0.06	0.63	0.48	0.03	0.70	0.40	0.01
Uniform Delay, d1	54.3	47.6	0.0	53.8	47.6	0.0	50.4	16.8	0.0	48.6	14.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.4	0.1	2.9	0.7	0.1	4.5	0.6	0.0	6.4	0.1	0.0
Delay (s)	56.3	48.0	0.1	56.7	48.3	0.1	54.9	17.4	0.0	55.0	14.3	0.0
Level of Service	E	D	A	E	D	A	D	B	A	E	B	A
Approach Delay (s)		29.8			37.0			20.1			19.7	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



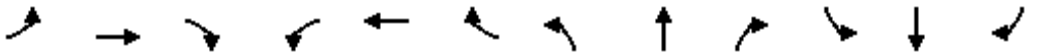
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	168	1261	440	60	1307	576	599	509	19	449	431	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	6.0		4.0	6.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91		0.94	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5058		4990	5044	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5058		4990	5044	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	177	1327	463	63	1376	606	631	536	20	473	454	26
RTOR Reduction (vph)	0	0	207	0	0	0	0	3	0	0	5	0
Lane Group Flow (vph)	177	1327	256	63	1376	606	631	553	0	473	475	0
Turn Type	Prot		Perm	Prot		Free	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free						
Actuated Green, G (s)	9.8	54.1	54.1	4.5	48.8	120.0	25.8	26.2		15.2	15.6	
Effective Green, g (s)	9.8	54.1	54.1	4.5	48.8	120.0	25.8	26.2		15.2	15.6	
Actuated g/C Ratio	0.08	0.45	0.45	0.04	0.41	1.00	0.22	0.22		0.13	0.13	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	280	2292	714	129	2068	1583	738	1104		632	656	
v/s Ratio Prot	0.05	c0.26		0.02	c0.27		c0.18	0.11		0.09	c0.09	
v/s Ratio Perm			0.16			0.38						
v/c Ratio	0.63	0.58	0.36	0.49	0.67	0.38	0.86	0.50		0.75	0.72	
Uniform Delay, d1	53.4	24.5	21.6	56.6	29.0	0.0	45.3	41.2		50.6	50.1	
Progression Factor	0.65	1.05	1.81	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.4	0.4	1.1	1.7	0.7	9.2	0.5		4.2	4.2	
Delay (s)	37.0	25.9	39.4	57.7	30.7	0.7	54.5	41.6		54.8	54.3	
Level of Service	D	C	D	E	C	A	D	D		D	D	
Approach Delay (s)		30.1			22.6			48.5			54.6	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	35.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



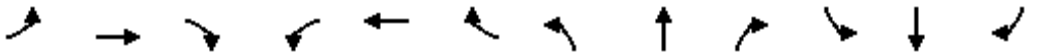
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	0	0	32	6	61	14	1112	13	35	489	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0				3.0	3.0	3.0	4.7		3.0	4.7	
Lane Util. Factor	1.00				1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00				1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770				1787	1583	1770	3533		1770	3535	
Flt Permitted	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770				1787	1583	1770	3533		1770	3535	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	0	0	34	6	64	15	1171	14	37	515	4
RTOR Reduction (vph)	0	0	0	0	0	55	0	1	0	0	0	0
Lane Group Flow (vph)	35	0	0	0	40	9	15	1184	0	37	519	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						4						
Actuated Green, G (s)	4.9				8.9	8.9	1.1	39.3		3.5	41.7	
Effective Green, g (s)	5.9				9.9	9.9	2.1	40.3		4.5	42.7	
Actuated g/C Ratio	0.08				0.13	0.13	0.03	0.54		0.06	0.57	
Clearance Time (s)	4.0				4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0				2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	141				238	211	50	1916		107	2032	
v/s Ratio Prot	c0.02				c0.02		0.01	c0.34		c0.02	0.15	
v/s Ratio Perm						0.01						
v/c Ratio	0.25				0.17	0.04	0.30	0.62		0.35	0.26	
Uniform Delay, d1	32.1				28.5	28.1	35.4	11.7		33.5	7.9	
Progression Factor	1.00				1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3				0.1	0.0	1.2	0.8		0.7	0.1	
Delay (s)	32.5				28.7	28.1	36.6	12.5		34.2	8.0	
Level of Service	C				C	C	D	B		C	A	
Approach Delay (s)		32.5			28.3			12.8			9.7	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	13.7
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



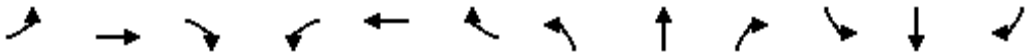
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	394	28	34	1144	70	43	5	18	22	17	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3505		1770	3539	1583		1783	1583		1812	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	3505		1770	3539	1583		1783	1583		1812	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	415	29	36	1204	74	45	5	19	23	18	8
RTOR Reduction (vph)	0	4	0	0	0	31	0	0	17	0	0	7
Lane Group Flow (vph)	61	440	0	36	1204	43	0	50	2	0	41	1
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	3.1	36.1		1.7	34.7	34.7		5.6	5.6		6.8	6.8
Effective Green, g (s)	4.1	39.1		2.7	37.7	35.7		6.6	6.6		7.8	7.8
Actuated g/C Ratio	0.06	0.58		0.04	0.56	0.53		0.10	0.10		0.11	0.11
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	107	2018		70	1965	832		173	154		208	182
v/s Ratio Prot	c0.03	0.13		0.02	c0.34			c0.03			c0.02	
v/s Ratio Perm						0.03			0.00			0.00
v/c Ratio	0.57	0.22		0.51	0.61	0.05		0.29	0.01		0.20	0.01
Uniform Delay, d1	31.0	7.0		32.0	10.2	7.8		28.5	27.7		27.2	26.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	4.5	0.2		2.6	1.1	0.1		0.3	0.0		0.2	0.0
Delay (s)	35.5	7.2		34.6	11.2	7.9		28.8	27.7		27.4	26.6
Level of Service	D	A		C	B	A		C	C		C	C
Approach Delay (s)		10.6			11.7			28.5			27.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	11.7
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



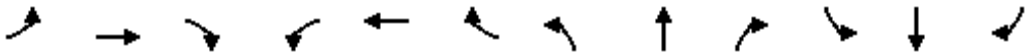
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	162	254	68	28	565	340	509	1222	34	202	697	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	171	267	72	29	595	358	536	1286	36	213	734	172
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	171	267	72	29	595	358	536	1286	36	213	734	172
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	15.2	36.0	120.0	6.0	26.8	120.0	22.6	47.6	120.0	11.0	36.0	120.0
Effective Green, g (s)	16.2	38.5	120.0	7.0	29.3	120.0	23.6	50.6	120.0	12.0	39.0	120.0
Actuated g/C Ratio	0.13	0.32	1.00	0.06	0.24	1.00	0.20	0.42	1.00	0.10	0.32	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	239	1135	1583	200	864	1583	675	2144	1583	343	1653	1583
v/s Ratio Prot	c0.10	0.08		0.01	c0.17		c0.16	c0.25		c0.06	0.14	
v/s Ratio Perm			0.05			0.23			0.02			0.11
v/c Ratio	0.72	0.24	0.05	0.14	0.69	0.23	0.79	0.60	0.02	0.62	0.44	0.11
Uniform Delay, d1	49.7	29.9	0.0	53.7	41.2	0.0	45.9	26.9	0.0	51.8	31.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	0.2	0.1	0.1	2.7	0.3	6.0	0.6	0.0	2.5	0.9	0.1
Delay (s)	57.9	30.1	0.1	53.8	43.9	0.3	51.9	27.5	0.0	54.3	32.8	0.1
Level of Service	E	C	A	D	D	A	D	C	A	D	C	A
Approach Delay (s)		35.2			28.3			34.0			31.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	443	0	0	194	272	2	2	0	430	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0		3.0	3.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		0.95	0.95	
Frt		1.00			1.00	0.85		1.00		1.00	0.99	
Flt Protected		1.00			1.00	1.00		0.98		0.95	0.95	
Satd. Flow (prot)		3539			1863	1583		1817		1681	1679	
Flt Permitted		1.00			1.00	1.00		1.00		0.95	0.95	
Satd. Flow (perm)		3539			1863	1583		1863		1681	1679	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	466	0	0	204	286	2	2	0	453	0	8
RTOR Reduction (vph)	0	0	0	0	0	119	0	0	0	0	3	0
Lane Group Flow (vph)	0	466	0	0	204	167	0	4	0	231	227	0
Turn Type						pt+ov	Perm			Split		
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases							3					
Actuated Green, G (s)		18.8			12.3	23.0		0.4		10.7	10.7	
Effective Green, g (s)		19.8			13.3	25.0		1.4		11.7	11.7	
Actuated g/C Ratio		0.46			0.31	0.58		0.03		0.27	0.27	
Clearance Time (s)		4.9			4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1			3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1637			579	925		61		460	459	
v/s Ratio Prot		c0.13			c0.11	0.11				c0.14	0.14	
v/s Ratio Perm								c0.00				
v/c Ratio		0.28			0.35	0.18		0.07		0.50	0.49	
Uniform Delay, d1		7.1			11.4	4.1		20.1		13.1	13.1	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.4	0.1		0.2		0.3	0.3	
Delay (s)		7.2			11.8	4.2		20.2		13.4	13.4	
Level of Service		A			B	A		C		B	B	
Approach Delay (s)		7.2			7.4			20.2			13.4	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	42.8	Sum of lost time (s)	13.8
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

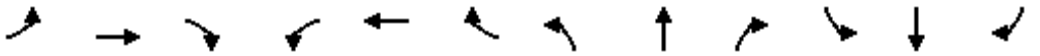


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	878	5	3	481	0	11	0	11	116	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9		3.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		1.00	1.00	
Frt		1.00		1.00	1.00			0.93		1.00	0.85	
Flt Protected		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3536		1770	3539			1695		1770	1583	
Flt Permitted		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3536		1770	3539			1695		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	924	5	3	506	0	12	0	12	122	0	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	12	0	0	3	0
Lane Group Flow (vph)	0	929	0	3	506	0	0	12	0	122	1	0
Turn Type				Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)		26.1		1.0	31.1			1.0		8.1	8.1	
Effective Green, g (s)		27.1		2.0	32.1			2.0		9.1	9.1	
Actuated g/C Ratio		0.51		0.04	0.60			0.04		0.17	0.17	
Clearance Time (s)		4.9		4.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1		2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1805		67	2139			64		303	271	
v/s Ratio Prot		c0.26		0.00	c0.14			c0.01		c0.07	0.00	
v/s Ratio Perm												
v/c Ratio		0.51		0.04	0.24			0.19		0.40	0.00	
Uniform Delay, d1		8.6		24.6	4.8			24.8		19.6	18.2	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.3		0.1	0.1			0.5		0.3	0.0	
Delay (s)		8.9		24.7	4.9			25.3		19.9	18.2	
Level of Service		A		C	A			C		B	B	
Approach Delay (s)		8.9			5.0			25.3			19.8	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	13.8
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

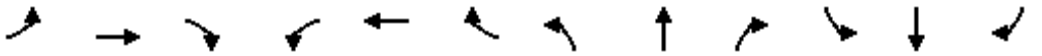
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	998	15	88	533	49	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		3.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3531		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3531		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1051	16	93	561	52	266
RTOR Reduction (vph)	1	0	0	0	0	162
Lane Group Flow (vph)	1066	0	93	561	52	104
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	23.5		3.1	30.6	7.7	7.7
Effective Green, g (s)	24.5		4.1	31.6	8.7	8.7
Actuated g/C Ratio	0.52		0.09	0.67	0.18	0.18
Clearance Time (s)	4.9		4.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	1833		154	2369	326	292
v/s Ratio Prot	c0.30		c0.05	0.16	0.03	
v/s Ratio Perm						c0.07
v/c Ratio	0.58		0.60	0.24	0.16	0.36
Uniform Delay, d1	7.8		20.8	3.1	16.2	16.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5		4.5	0.1	0.1	0.3
Delay (s)	8.3		25.3	3.1	16.3	17.1
Level of Service	A		C	A	B	B
Approach Delay (s)	8.3			6.3	17.0	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	47.2	Sum of lost time (s)	9.9
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



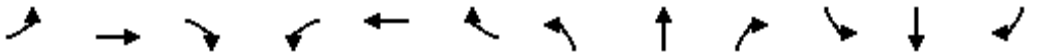
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	1161	4	34	730	75	4	6	12	378	4	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3537		1770	3490			1706		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3537		1770	3490			1706		1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	1222	4	36	768	79	4	6	13	398	4	39
RTOR Reduction (vph)	0	0	0	0	5	0	0	13	0	0	0	22
Lane Group Flow (vph)	52	1226	0	36	842	0	0	10	0	199	203	17
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	6.8	76.4		4.1	73.7			2.4		19.6	19.6	19.6
Effective Green, g (s)	7.8	77.4		5.1	74.7			3.4		20.6	20.6	20.6
Actuated g/C Ratio	0.06	0.65		0.04	0.62			0.03		0.17	0.17	0.17
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	115	2281		75	2173			48		289	290	272
v/s Ratio Prot	c0.03	c0.35		0.02	0.24			c0.01		0.12	c0.12	
v/s Ratio Perm												0.01
v/c Ratio	0.45	0.54		0.48	0.39			0.22		0.69	0.70	0.06
Uniform Delay, d1	54.0	11.6		56.2	11.3			57.0		46.7	46.8	41.6
Progression Factor	1.00	1.00		1.39	0.25			1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.9		1.6	0.1			0.8		6.1	6.7	0.1
Delay (s)	55.1	12.5		79.8	2.9			57.8		52.8	53.4	41.7
Level of Service	E	B		E	A			E		D	D	D
Approach Delay (s)		14.2			6.1			57.8			52.1	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



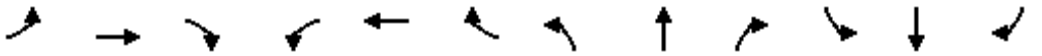
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	212	1334	15	70	665	910	19	7	29	689	11	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	1.00	*0.80		1.00	0.95	1.00	1.00	1.00	1.00	*0.70	*0.70	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	2975		1770	3539	1583	1770	1863	1583	1239	1244	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	2975		1770	3539	1583	1770	1863	1583	1239	1244	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	223	1404	16	74	700	958	20	7	31	725	12	195
RTOR Reduction (vph)	0	1	0	0	0	507	0	0	30	0	0	138
Lane Group Flow (vph)	223	1419	0	74	700	451	20	7	1	370	367	57
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	16.0	58.9		5.0	47.9	47.9	3.2	3.2	3.2	35.1	35.1	35.1
Effective Green, g (s)	16.0	58.9		5.0	47.9	47.9	3.2	3.2	3.2	35.1	35.1	35.1
Actuated g/C Ratio	0.13	0.49		0.04	0.40	0.40	0.03	0.03	0.03	0.29	0.29	0.29
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.3		2.0	3.5	3.5	2.0	2.0	2.0	2.3	2.3	2.3
Lane Grp Cap (vph)	236	1460		74	1413	632	47	50	42	362	364	463
v/s Ratio Prot	c0.13	c0.48		0.04	0.20		c0.01	0.00		c0.30	0.30	
v/s Ratio Perm						0.29			0.00			0.04
v/c Ratio	0.94	0.97		1.00	0.50	0.71	0.43	0.14	0.02	1.02	1.01	0.12
Uniform Delay, d1	51.6	29.8		57.5	27.0	30.3	57.5	57.1	56.9	42.5	42.5	31.2
Progression Factor	1.03	0.80		1.10	0.85	1.76	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.4	16.4		56.2	0.1	1.2	2.2	0.5	0.1	53.1	49.3	0.1
Delay (s)	92.4	40.1		119.1	23.1	54.4	59.7	57.5	56.9	95.5	91.7	31.2
Level of Service	F	D		F	C	D	E	E	E	F	F	C
Approach Delay (s)		47.2			44.5			58.0			80.6	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM Average Control Delay	53.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



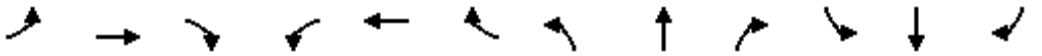
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1002	326	0	1482	1064	0	0	0	224	607	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.9		2.9	3.0				3.7	4.3	3.7
Lane Util. Factor		0.95	1.00		0.91	0.91				0.95	*0.85	1.00
Frt		1.00	0.85		0.98	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3539	1583		3308	1441				1681	1580	1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3539	1583		3308	1441				1681	1580	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1055	343	0	1560	1120	0	0	0	236	639	172
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	1055	343	0	1849	818	0	0	0	212	663	160
Turn Type			Prot			Free				Split		Prot
Protected Phases		2	2		6					4	4	4
Permitted Phases						Free						
Actuated Green, G (s)		62.1	62.1		62.1	120.0				47.7	47.7	47.7
Effective Green, g (s)		63.7	63.1		64.1	120.0				49.3	48.7	49.3
Actuated g/C Ratio		0.53	0.53		0.53	1.00				0.41	0.41	0.41
Clearance Time (s)		4.9	4.9		4.9					5.3	5.3	5.3
Vehicle Extension (s)		3.8	3.8		3.8					2.0	2.0	2.0
Lane Grp Cap (vph)		1879	832		1767	1441				691	641	650
v/s Ratio Prot		0.30	0.22		c0.56					0.13	c0.42	0.10
v/s Ratio Perm						0.57						
v/c Ratio		0.56	0.41		1.05	0.57				0.31	1.03	0.25
Uniform Delay, d1		18.8	17.2		28.0	0.0				23.8	35.6	23.2
Progression Factor		0.67	0.68		0.77	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.3	0.4		30.8	1.0				0.1	44.7	0.1
Delay (s)		13.0	12.1		52.2	1.0				23.9	80.3	23.2
Level of Service		B	B		D	A				C	F	C
Approach Delay (s)		12.7			36.6			0.0			59.5	
Approach LOS		B			D			A			E	

Intersection Summary			
HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	205	1021	0	0	1544	270	0	0	1391	0	0	1002
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.0			3.0			2.0
Lane Util. Factor	1.00	0.86			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			4794	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			4794	1362			1611			2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	1075	0	0	1625	284	0	0	1464	0	0	1055
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	9
Lane Group Flow (vph)	216	1075	0	0	1650	256	0	0	1464	0	0	1046
Turn Type	Prot					Free			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						Free			Free			
Actuated Green, G (s)	24.1	60.0			27.0	60.0			60.0			24.1
Effective Green, g (s)	26.1	60.0			29.0	60.0			60.0			26.1
Actuated g/C Ratio	0.44	1.00			0.48	1.00			1.00			0.44
Clearance Time (s)	4.0	4.9			4.9							4.0
Vehicle Extension (s)	2.0	3.9			3.8							2.0
Lane Grp Cap (vph)	770	6408			2317	1362			1611			1212
v/s Ratio Prot	0.12	0.17			0.34							0.38
v/s Ratio Perm						0.19			c0.91			
v/c Ratio	0.28	0.17			0.71	0.19			0.91			0.86
Uniform Delay, d1	10.9	0.0			12.2	0.0			0.0			15.3
Progression Factor	0.84	1.00			1.13	1.00			1.00			1.00
Incremental Delay, d2	0.1	0.0			1.6	0.3			9.1			6.3
Delay (s)	9.3	0.0			15.4	0.3			9.1			21.7
Level of Service	A	A			B	A			A			C
Approach Delay (s)		1.6			13.4			9.1			21.7	
Approach LOS		A			B			A			C	

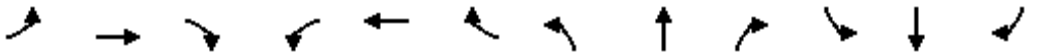
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	394	1805	213	109	1330	65	321	563	71	54	169	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9	4.9	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1554	3433	6358		3433	3539	1547	3433	5085	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1554	3433	6358		3433	3539	1547	3433	5085	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	415	1900	224	115	1400	68	338	593	75	57	178	172
RTOR Reduction (vph)	0	0	73	0	5	0	0	0	56	0	0	6
Lane Group Flow (vph)	415	1900	151	115	1463	0	338	593	19	57	178	166
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		custom	Prot			Prot		Perm	Prot		custom
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2 3						8			4 5
Actuated Green, G (s)	18.7	61.7	84.9	6.8	49.8		19.2	29.7	29.7	4.0	14.1	32.8
Effective Green, g (s)	18.7	61.7	80.9	6.8	49.8		19.2	29.7	29.7	4.0	14.1	32.8
Actuated g/C Ratio	0.16	0.51	0.67	0.06	0.41		0.16	0.25	0.25	0.03	0.12	0.27
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.9	4.9	4.0	5.3	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5	4.5	2.0	5.1	
Lane Grp Cap (vph)	535	2615	1048	195	2639		549	876	383	114	597	424
v/s Ratio Prot	0.12	c0.37		0.03	c0.23		c0.10	c0.17		0.02	0.04	
v/s Ratio Perm			0.10						0.01			0.11
v/c Ratio	0.78	0.73	0.14	0.59	0.55		0.62	0.68	0.05	0.50	0.30	0.39
Uniform Delay, d1	48.6	22.6	7.1	55.2	26.7		47.0	40.8	34.4	57.0	48.4	35.5
Progression Factor	0.93	0.85	0.14	0.77	0.66		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	1.5	0.0	2.6	0.3		1.4	2.5	0.1	1.3	0.6	1.3
Delay (s)	50.2	20.8	1.0	45.2	17.9		48.4	43.3	34.5	58.3	49.0	36.8
Level of Service	D	C	A	D	B		D	D	C	E	D	D
Approach Delay (s)		23.9			19.8			44.4			45.1	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

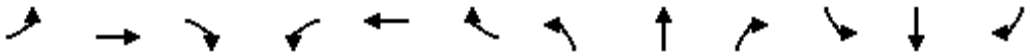
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	1946	44	43	1431	28	36	16	64	32	15	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5064		1770	5085	1523	1770	1863	1583	1681	1736	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (perm)	1770	5064		1770	5085	1523	1770	1863	1583	1681	1736	1555
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	2048	46	45	1506	29	38	17	67	34	16	40
RTOR Reduction (vph)	0	1	0	0	0	10	0	0	64	0	0	37
Lane Group Flow (vph)	93	2093	0	45	1506	19	38	17	3	24	26	3
Confl. Peds. (#/hr)			5			5						5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	17.1	82.8		4.8	70.5	70.5	5.6	5.6	5.6	9.9	9.9	9.9
Effective Green, g (s)	17.1	82.8		4.8	70.5	70.5	5.6	5.6	5.6	9.9	9.9	9.9
Actuated g/C Ratio	0.14	0.69		0.04	0.59	0.59	0.05	0.05	0.05	0.08	0.08	0.08
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.7		2.0	5.6	5.6	2.5	2.5	2.5	2.0	2.0	2.0
Lane Grp Cap (vph)	252	3494		71	2987	895	83	87	74	139	143	128
v/s Ratio Prot	0.05	c0.41		0.03	c0.30		c0.02	0.01		0.01	c0.01	
v/s Ratio Perm						0.01			0.00			0.00
v/c Ratio	0.37	0.60		0.63	0.50	0.02	0.46	0.20	0.04	0.17	0.18	0.03
Uniform Delay, d1	46.6	9.8		56.7	14.5	10.3	55.7	55.0	54.6	51.2	51.3	50.6
Progression Factor	0.56	0.15		0.76	2.05	3.46	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.6		11.4	0.3	0.0	2.9	0.8	0.2	0.2	0.2	0.0
Delay (s)	26.4	2.1		54.6	30.0	35.8	58.6	55.8	54.8	51.5	51.5	50.6
Level of Service	C	A		D	C	D	E	E	D	D	D	D
Approach Delay (s)		3.1			30.8			56.1			51.1	
Approach LOS		A			C			E			D	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

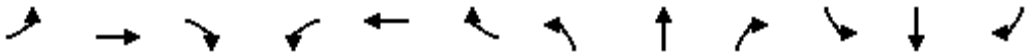
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	1917	37	15	1442	26	117	47	25	55	5	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	4.0		4.6	4.6	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00	0.90	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.97	
Satd. Flow (prot)	1770	5085	1435	1770	5085	1428	1681	1679		1681	1620	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.97	
Satd. Flow (perm)	1770	5085	1435	1770	5085	1428	1681	1679		1681	1620	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	2018	39	16	1518	27	123	49	26	58	5	12
RTOR Reduction (vph)	0	0	11	0	0	8	0	11	0	0	10	0
Lane Group Flow (vph)	12	2018	28	16	1518	19	100	87	0	38	27	0
Confl. Peds. (#/hr)			20			20						20
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.2	71.3	71.3	1.2	71.3	71.3	10.6	10.6		19.4	19.4	
Effective Green, g (s)	1.2	71.3	71.3	1.2	71.3	71.3	10.6	10.6		19.4	19.4	
Actuated g/C Ratio	0.01	0.59	0.59	0.01	0.59	0.59	0.09	0.09		0.16	0.16	
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	4.0		4.6	4.6	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.5	2.5		2.0	2.0	
Lane Grp Cap (vph)	18	3021	853	18	3021	848	148	148		272	262	
v/s Ratio Prot	0.01	c0.40		c0.01	0.30		c0.06	0.05		c0.02	0.02	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.67	0.67	0.03	0.89	0.50	0.02	0.68	0.59		0.14	0.10	
Uniform Delay, d1	59.2	16.4	10.1	59.3	14.1	10.0	53.0	52.6		43.1	42.9	
Progression Factor	0.77	0.27	0.05	0.81	0.29	0.05	1.00	1.00		1.00	1.00	
Incremental Delay, d2	46.8	0.7	0.0	147.1	0.6	0.0	10.5	4.9		0.1	0.1	
Delay (s)	92.4	5.2	0.6	195.2	4.6	0.6	63.6	57.5		43.2	42.9	
Level of Service	F	A	A	F	A	A	E	E		D	D	
Approach Delay (s)		5.6			6.5			60.6			43.1	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

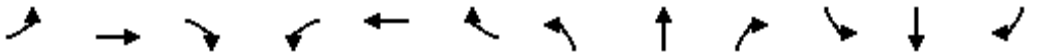
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	1788	61	11	1467	0	14	4	11	27	1	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.89		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5055		1770	5085		1770	1625		1770	1563	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5055		1770	5085		1770	1625		1770	1563	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	1882	64	12	1544	0	15	4	12	28	1	18
RTOR Reduction (vph)	0	2	0	0	0	0	0	11	0	0	17	0
Lane Group Flow (vph)	60	1944	0	12	1544	0	15	5	0	28	2	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	14.0	90.8		1.2	78.0		2.8	6.4		4.7	8.3	
Effective Green, g (s)	14.0	90.8		1.2	78.0		2.8	6.4		4.7	8.3	
Actuated g/C Ratio	0.12	0.76		0.01	0.65		0.02	0.05		0.04	0.07	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	5.8		2.0	5.8		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	207	3825		18	3305		41	87		69	108	
v/s Ratio Prot	0.03	c0.38		0.01	c0.30		0.01	c0.00		c0.02	0.00	
v/s Ratio Perm												
v/c Ratio	0.29	0.51		0.67	0.47		0.37	0.05		0.41	0.02	
Uniform Delay, d1	48.5	5.8		59.2	10.6		57.7	53.9		56.3	52.1	
Progression Factor	0.53	0.05		0.68	1.65		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.4		47.7	0.2		5.5	0.3		3.9	0.1	
Delay (s)	26.1	0.6		88.0	17.6		63.2	54.2		60.2	52.1	
Level of Service	C	A		F	B		E	D		E	D	
Approach Delay (s)		1.4			18.2			58.5			56.9	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

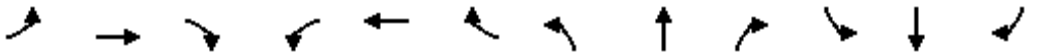
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	1582	50	44	1270	121	169	714	372	93	308	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.0	4.0	4.9	4.0	5.0	6.7	6.7	5.0	6.3	6.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1562	3433	5085	1555	3433	5085	1556
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1562	3433	5085	1555	3433	5085	1556
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	157	1665	53	46	1337	127	178	752	392	98	324	74
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	51	0	0	64
Lane Group Flow (vph)	157	1665	53	46	1337	127	178	752	341	98	324	10
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			8			4
Actuated Green, G (s)	11.9	62.7	120.0	2.4	53.2	120.0	18.4	29.3	29.3	5.0	16.3	16.3
Effective Green, g (s)	11.9	62.7	120.0	2.4	53.2	120.0	18.4	29.3	29.3	5.0	16.3	16.3
Actuated g/C Ratio	0.10	0.52	1.00	0.02	0.44	1.00	0.15	0.24	0.24	0.04	0.14	0.14
Clearance Time (s)	4.0	4.9		4.0	4.9		5.0	6.7	6.7	5.0	6.3	6.3
Vehicle Extension (s)	2.0	5.6		2.0	5.6		2.0	2.7	2.7	2.0	3.1	3.1
Lane Grp Cap (vph)	340	2657	1562	69	2254	1562	526	1242	380	143	691	211
v/s Ratio Prot	c0.05	c0.33		0.01	0.26		0.05	0.15		0.03	c0.06	
v/s Ratio Perm			0.03			0.08			c0.22			0.01
v/c Ratio	0.46	0.63	0.03	0.67	0.59	0.08	0.34	0.61	0.90	0.69	0.47	0.05
Uniform Delay, d1	51.0	20.3	0.0	58.4	25.2	0.0	45.4	40.2	43.9	56.7	47.9	45.1
Progression Factor	1.14	1.02	1.00	0.98	0.55	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.0	0.0	12.7	0.5	0.1	0.1	0.8	22.9	10.3	0.5	0.1
Delay (s)	58.6	21.8	0.0	69.8	14.3	0.1	45.5	41.0	66.8	67.0	48.4	45.2
Level of Service	E	C	A	E	B	A	D	D	E	E	D	D
Approach Delay (s)		24.3			14.8			49.3			51.6	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

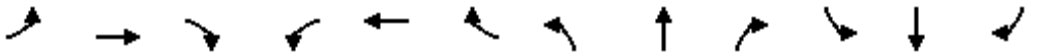


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	1455	199	268	1852	191	408	814	240	191	624	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	3.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	4.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1541
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1541
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	232	1532	209	282	1949	201	429	857	253	201	657	154
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	122
Lane Group Flow (vph)	232	1532	209	282	1949	201	429	857	253	201	657	32
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			4
Actuated Green, G (s)	9.8	45.3	120.0	12.0	49.5	120.0	17.4	29.9	120.0	11.1	23.6	23.6
Effective Green, g (s)	10.8	48.3	120.0	13.0	52.5	120.0	18.4	32.9	120.0	12.1	26.6	24.6
Actuated g/C Ratio	0.09	0.40	1.00	0.11	0.44	1.00	0.15	0.27	1.00	0.10	0.22	0.21
Clearance Time (s)	4.0	6.0		6.0	6.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.1		2.0	3.3		2.0	4.2		2.0	4.5	4.5
Lane Grp Cap (vph)	299	2047	1560	360	2225	1560	509	1394	1560	335	1127	316
v/s Ratio Prot	0.07	c0.30		0.08	c0.38		c0.13	c0.17		0.06	0.13	
v/s Ratio Perm			0.13			0.13			0.16			0.02
v/c Ratio	0.78	0.75	0.13	0.78	0.88	0.13	0.84	0.61	0.16	0.60	0.58	0.10
Uniform Delay, d1	53.4	30.7	0.0	52.1	30.8	0.0	49.4	38.0	0.0	51.6	41.7	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.9	2.6	0.2	9.9	4.3	0.2	11.6	1.0	0.2	1.9	1.1	0.2
Delay (s)	64.3	33.2	0.2	62.0	35.0	0.2	61.0	39.0	0.2	53.6	42.8	39.0
Level of Service	E	C	A	E	D	A	E	D	A	D	D	D
Approach Delay (s)		33.4			35.3			38.8			44.4	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	36.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

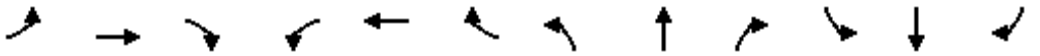
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	563	1625	397	565	2109	496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	4.0	5.3	5.3	6.0	6.0
Lane Util. Factor	0.97	0.88	0.95	1.00	0.97	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	2787	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	3539	1583	3433	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	593	1711	418	595	2220	522
RTOR Reduction (vph)	0	0	0	194	0	0
Lane Group Flow (vph)	593	1711	418	401	2220	522
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	22.7	150.0	29.7	29.7	81.0	116.0
Effective Green, g (s)	22.7	150.0	29.7	29.7	81.0	116.0
Actuated g/C Ratio	0.15	1.00	0.20	0.20	0.54	0.77
Clearance Time (s)	5.3		5.3	5.3	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	520	2787	701	313	1854	1441
v/s Ratio Prot	c0.17		0.12		c0.65	0.28
v/s Ratio Perm		0.61		c0.25		
v/c Ratio	1.14	0.61	0.60	1.28	1.20	0.36
Uniform Delay, d1	63.6	0.0	54.7	60.1	34.5	5.4
Progression Factor	0.81	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	73.7	0.4	1.4	148.7	94.4	0.2
Delay (s)	125.5	0.4	56.1	208.8	128.9	5.5
Level of Service	F	A	E	F	F	A
Approach Delay (s)	32.6		145.8			105.4
Approach LOS	C		F			F

Intersection Summary			
HCM Average Control Delay	84.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	104.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	2154	58	99	1811	91	84	141	131	42	16	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3525		3433	3539	1583	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3525		3433	3539	1583	1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	453	2267	61	104	1906	96	88	148	138	44	17	324
RTOR Reduction (vph)	0	1	0	0	0	14	0	0	116	0	0	222
Lane Group Flow (vph)	453	2327	0	104	1906	82	88	148	22	44	17	102
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	18.3	94.4		8.9	85.0	85.0	11.7	23.4	23.4	5.4	16.0	16.0
Effective Green, g (s)	18.3	94.4		8.9	85.0	85.0	11.7	23.4	23.4	5.4	16.0	16.0
Actuated g/C Ratio	0.12	0.63		0.06	0.57	0.57	0.08	0.16	0.16	0.04	0.11	0.11
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.9		2.0	3.9	3.9	2.0	4.4	4.4	2.0	3.6	3.6
Lane Grp Cap (vph)	419	2218		204	2005	897	138	291	247	124	199	169
v/s Ratio Prot	0.13	c0.66		0.03	c0.54		c0.05	c0.08		0.01	0.01	
v/s Ratio Perm						0.05			0.01			0.06
v/c Ratio	1.08	1.05		0.51	0.95	0.09	0.64	0.51	0.09	0.35	0.09	0.60
Uniform Delay, d1	65.8	27.8		68.4	30.5	14.8	67.1	58.0	54.2	70.6	60.4	64.0
Progression Factor	0.64	0.19		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	41.1	23.6		0.7	10.8	0.1	6.9	2.3	0.3	0.6	0.2	6.3
Delay (s)	83.3	28.9		69.2	41.3	14.9	74.0	60.3	54.4	71.2	60.6	70.3
Level of Service	F	C		E	D	B	E	E	D	E	E	E
Approach Delay (s)		37.7			41.5			61.4			70.0	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	42.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

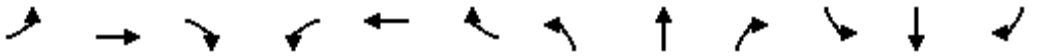


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	2352	6	13	1997	7	9	0	35	56	3	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3			11.0			11.0	11.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (prot)	1770	3538		1770	3537			1644			1778	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.92			0.70	1.00
Satd. Flow (perm)	1770	3538		1770	3537			1521			1309	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	2476	6	14	2102	7	9	0	37	59	3	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	35	0	0	0	21
Lane Group Flow (vph)	6	2482	0	14	2109	0	0	11	0	0	62	1
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	7	4		3	8			2			2	
Permitted Phases							2			2		2
Actuated Green, G (s)	0.8	80.3		2.4	81.9			7.0			7.0	7.0
Effective Green, g (s)	0.8	80.3		2.4	81.9			7.0			7.0	7.0
Actuated g/C Ratio	0.01	0.73		0.02	0.74			0.06			0.06	0.06
Clearance Time (s)	4.0	5.3		4.0	5.3			11.0			11.0	11.0
Vehicle Extension (s)	2.0	3.0		2.0	3.9			2.0			2.0	2.0
Lane Grp Cap (vph)	13	2583		39	2633			97			83	101
v/s Ratio Prot	c0.00	c0.70		0.01	c0.60							
v/s Ratio Perm								0.01			c0.05	0.00
v/c Ratio	0.46	0.96		0.36	0.80			0.12			0.75	0.01
Uniform Delay, d1	54.4	13.4		53.0	8.9			48.6			50.6	48.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	9.1	10.7		2.1	1.9			0.2			26.9	0.0
Delay (s)	63.5	24.1		55.1	10.8			48.8			77.6	48.3
Level of Service	E	C		E	B			D			E	D
Approach Delay (s)		24.2			11.1			48.8			69.9	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2464	21	370	2038	0	361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0	5.3		6.0
Lane Util. Factor	0.91		0.97	0.91		1.00
Frt	1.00		1.00	1.00		0.86
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5079		3433	5085		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5079		3433	5085		1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2594	22	389	2145	0	380
RTOR Reduction (vph)	1	0	0	0	0	1
Lane Group Flow (vph)	2615	0	389	2145	0	379
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	41.7		20.0	75.0		20.0
Effective Green, g (s)	41.7		20.0	75.0		20.0
Actuated g/C Ratio	0.56		0.27	1.00		0.27
Clearance Time (s)	7.3		6.0	5.3		6.0
Vehicle Extension (s)	3.5		2.0	3.5		2.0
Lane Grp Cap (vph)	2824		915	5085		430
v/s Ratio Prot	c0.51		0.11	0.42		c0.23
v/s Ratio Perm						
v/c Ratio	0.93		0.43	0.42		0.88
Uniform Delay, d1	15.2		22.7	0.0		26.4
Progression Factor	1.00		0.70	1.00		1.00
Incremental Delay, d2	6.6		0.0	0.1		18.1
Delay (s)	21.9		15.9	0.1		44.4
Level of Service	C		B	A		D
Approach Delay (s)	21.9			2.5	44.4	
Approach LOS	C			A	D	

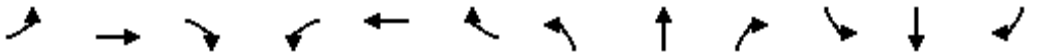
Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	1216	1298	90	1164	273	1129	688	147	213	182	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	4.0	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4916	2787	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4916	2787	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	327	1280	1366	95	1225	287	1188	724	155	224	192	121
RTOR Reduction (vph)	0	0	0	0	0	93	0	0	75	0	0	111
Lane Group Flow (vph)	327	1280	1366	95	1225	194	1188	724	80	224	192	10
Parking (#/hr)		0										
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			2			6
Actuated Green, G (s)	14.0	53.8	150.0	15.5	54.9	54.9	50.0	48.8	48.8	13.3	12.1	12.1
Effective Green, g (s)	14.0	53.8	150.0	15.5	54.9	54.9	50.0	48.8	48.8	13.3	12.1	12.1
Actuated g/C Ratio	0.09	0.36	1.00	0.10	0.37	0.37	0.33	0.33	0.33	0.09	0.08	0.08
Clearance Time (s)	4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.9		2.0	3.5	3.5	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	320	1763	2787	355	1295	579	1144	1151	515	304	410	128
v/s Ratio Prot	c0.10	0.26		0.03	c0.35		c0.35	0.20		c0.07	0.04	
v/s Ratio Perm			c0.49			0.12			0.05			0.01
v/c Ratio	1.02	0.73	0.49	0.27	0.95	0.34	1.04	0.63	0.16	0.74	0.47	0.08
Uniform Delay, d1	68.0	41.7	0.0	62.0	46.1	34.4	50.0	42.9	36.0	66.6	65.9	63.8
Progression Factor	1.08	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.6	0.6	0.2	0.1	15.0	1.6	37.1	1.2	0.2	7.8	1.1	0.3
Delay (s)	110.2	34.3	0.2	62.2	61.1	35.9	87.1	44.1	36.1	74.4	67.0	64.1
Level of Service	F	C	A	E	E	D	F	D	D	E	E	E
Approach Delay (s)		27.0			56.7			68.2			69.4	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	48.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

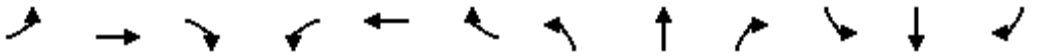


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	1345	75	11	1489	5	23	1	393	5	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.97	1.00
Satd. Flow (prot)	1762	3616		1711	3538			1777	1583		1799	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00		0.97	1.00
Satd. Flow (perm)	1762	3616		1711	3538			1777	1583		1799	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	1416	79	12	1567	5	24	1	414	5	2	1
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	63	0	0	1
Lane Group Flow (vph)	4	1492	0	12	1572	0	0	25	351	0	7	0
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	0.6	71.5		22.7	95.3			5.6	28.3		0.8	0.8
Effective Green, g (s)	1.6	74.0		23.7	97.8			7.1	31.3		2.3	2.3
Actuated g/C Ratio	0.01	0.62		0.20	0.81			0.06	0.26		0.02	0.02
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	23	2230		338	2883			105	446		34	28
v/s Ratio Prot	0.00	c0.41		0.01	0.44			0.01	c0.16		c0.00	
v/s Ratio Perm									0.06			0.00
v/c Ratio	0.17	0.67		0.04	0.55			0.24	0.79		0.21	0.00
Uniform Delay, d1	58.5	15.0		38.9	3.7			53.9	41.3		58.0	57.7
Progression Factor	1.00	1.00		1.20	0.61			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.8		0.0	0.7			0.4	8.3		1.1	0.0
Delay (s)	59.9	15.8		46.7	2.9			54.3	49.5		59.0	57.7
Level of Service	E	B		D	A			D	D		E	E
Approach Delay (s)		16.0			3.3			49.8			58.9	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

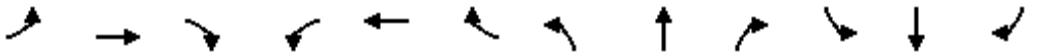
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1727	16	22	1365	140	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3534		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3534		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1818	17	23	1437	147	217
RTOR Reduction (vph)	1	0	0	0	0	89
Lane Group Flow (vph)	1834	0	23	1437	147	128
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	84.1		3.1	91.2	14.5	14.5
Effective Green, g (s)	86.1		5.1	93.2	16.5	16.5
Actuated g/C Ratio	0.72		0.04	0.78	0.14	0.14
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2536		75	2749	243	218
v/s Ratio Prot	c0.52		0.01	c0.41	c0.08	
v/s Ratio Perm						0.08
v/c Ratio	0.72		0.31	0.52	0.60	0.59
Uniform Delay, d1	10.0		55.7	5.0	48.7	48.6
Progression Factor	0.50		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.8	0.7	3.6	3.3
Delay (s)	5.9		56.6	5.8	52.2	51.9
Level of Service	A		E	A	D	D
Approach Delay (s)	5.9			6.6	52.0	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	306	906	686	153	513	28	752	1466	213	106	883	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3508		3433	3539	1552	3433	5085	1550
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3508		3433	3539	1552	3433	5085	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	322	954	722	161	540	29	792	1543	224	112	929	115
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	64	0	0	83
Lane Group Flow (vph)	322	954	722	161	566	0	792	1543	160	112	929	32
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	11.0	35.3	120.0	5.3	30.0		28.5	56.0	56.0	4.0	31.9	31.9
Effective Green, g (s)	12.0	36.8	120.0	6.3	31.5		29.5	57.5	57.0	5.0	33.4	32.9
Actuated g/C Ratio	0.10	0.31	1.00	0.05	0.26		0.25	0.48	0.48	0.04	0.28	0.27
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	343	1085	1561	180	921		844	1696	737	143	1415	425
v/s Ratio Prot	c0.09	c0.27		c0.05	0.16		c0.23	c0.44		0.03	c0.18	
v/s Ratio Perm			0.46						0.10			0.02
v/c Ratio	0.94	0.88	0.46	0.89	0.61		0.94	0.91	0.22	0.78	0.66	0.07
Uniform Delay, d1	53.6	39.5	0.0	56.5	38.9		44.4	28.9	18.4	57.0	38.2	32.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.82	1.25	1.53	1.00	1.00	1.00
Incremental Delay, d2	32.3	8.5	1.0	37.8	1.4		12.4	5.9	0.4	22.2	1.2	0.1
Delay (s)	86.0	48.0	1.0	94.3	40.3		49.0	42.1	28.6	79.2	39.5	32.4
Level of Service	F	D	A	F	D		D	D	C	E	D	C
Approach Delay (s)		37.1			52.2			43.1			42.6	
Approach LOS		D			D			D			D	

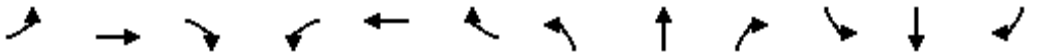
Intersection Summary			
HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	195	1200	2	19	678	78	43	63	79	4	8	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.98	1.00
Satd. Flow (prot)	1770	3538		1770	3471			1826	1550		1832	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00		0.98	1.00
Satd. Flow (perm)	1770	3538		1770	3471			1826	1550		1832	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	205	1263	2	20	714	82	45	66	83	4	8	5
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	50	0	0	5
Lane Group Flow (vph)	205	1265	0	20	791	0	0	111	33	0	12	0
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	20.6	85.1		2.9	67.4			12.3	12.3		2.4	2.4
Effective Green, g (s)	21.6	87.1		3.9	69.4			13.3	13.3		3.4	3.4
Actuated g/C Ratio	0.18	0.73		0.03	0.58			0.11	0.11		0.03	0.03
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	319	2568		58	2007			202	172		52	45
v/s Ratio Prot	c0.12	c0.36		0.01	c0.23			c0.06			c0.01	
v/s Ratio Perm									0.02			0.00
v/c Ratio	0.64	0.49		0.34	0.39			0.55	0.19		0.23	0.00
Uniform Delay, d1	45.6	7.0		56.8	13.8			50.5	48.5		57.0	56.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	3.3	0.3		1.3	0.6			1.6	0.2		0.8	0.0
Delay (s)	48.9	7.3		58.1	14.4			52.2	48.7		57.8	56.7
Level of Service	D	A		E	B			D	D		E	E
Approach Delay (s)		13.1			15.5			50.7			57.5	
Approach LOS		B			B			D			E	

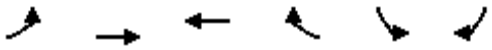
Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



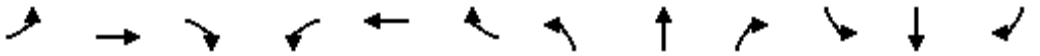
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	1244	0	25	662	14	68	2	26	43	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.8		3.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3528			1734			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.77	1.00
Satd. Flow (perm)	1770	3539		1770	3528			1380			1437	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	1309	0	26	697	15	72	2	27	45	0	66
RTOR Reduction (vph)	0	0	0	0	2	0	0	22	0	0	0	54
Lane Group Flow (vph)	22	1309	0	26	710	0	0	79	0	0	45	12
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	0.4	23.9		0.4	23.9			7.4			7.4	7.4
Effective Green, g (s)	1.4	26.4		1.4	26.4			8.4			8.4	8.4
Actuated g/C Ratio	0.03	0.59		0.03	0.59			0.19			0.19	0.19
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	55	2076		55	2070			258			268	295
v/s Ratio Prot	0.01	c0.37		c0.01	0.20							
v/s Ratio Perm								c0.06			0.03	0.01
v/c Ratio	0.40	0.63		0.47	0.34			0.31			0.17	0.04
Uniform Delay, d1	21.4	6.1		21.4	4.8			15.8			15.4	15.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.7	0.7		2.3	0.1			0.5			0.2	0.0
Delay (s)	23.1	6.8		23.8	4.9			16.3			15.6	15.0
Level of Service	C	A		C	A			B			B	B
Approach Delay (s)		7.0			5.6			16.3			15.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.8
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	653	554	601	362	142	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.94		1.00	0.85
Flt Protected	0.95	0.98	1.00		0.95	1.00
Satd. Flow (prot)	1610	3337	3340		3433	1583
Flt Permitted	0.95	0.98	1.00		0.95	1.00
Satd. Flow (perm)	1610	3337	3340		3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	687	583	633	381	149	214
RTOR Reduction (vph)	0	0	108	0	0	44
Lane Group Flow (vph)	412	858	906	0	149	170
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	20.6	20.6	20.3		7.6	28.2
Effective Green, g (s)	23.1	23.1	22.8		8.6	33.2
Actuated g/C Ratio	0.37	0.37	0.37		0.14	0.54
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	602	1247	1232		478	922
v/s Ratio Prot	0.26	c0.26	c0.27		c0.04	0.07
v/s Ratio Perm						0.04
v/c Ratio	0.68	0.69	0.74		0.31	0.18
Uniform Delay, d1	16.3	16.3	16.9		23.9	7.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.7	1.8	2.0		0.1	0.2
Delay (s)	19.9	18.1	18.9		24.1	7.5
Level of Service	B	B	B		C	A
Approach Delay (s)		18.7	18.9		14.3	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	7.3
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



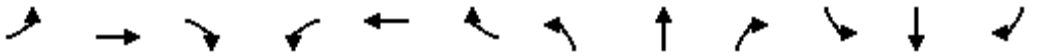
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	407	29	19	857	12	93	7	4	3	2	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.97	1.00
Satd. Flow (prot)	1770	3503		1770	3532			1561			1808	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.74			0.87	1.00
Satd. Flow (perm)	1770	3503		1770	3532			1214			1625	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	200	428	31	20	902	13	98	7	4	3	2	149
RTOR Reduction (vph)	0	5	0	0	2	0	0	3	0	0	0	122
Lane Group Flow (vph)	200	454	0	20	913	0	0	106	0	0	5	27
Parking (#/hr)								4				
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	7.8	30.5		1.0	23.7			8.6			8.6	8.6
Effective Green, g (s)	8.8	32.5		2.0	25.7			9.6			9.6	9.6
Actuated g/C Ratio	0.16	0.61		0.04	0.48			0.18			0.18	0.18
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3		2.0	4.3			2.0			2.0	2.0
Lane Grp Cap (vph)	292	2132		66	1700			218			292	285
v/s Ratio Prot	c0.11	0.13		0.01	c0.26							
v/s Ratio Perm								c0.09			0.00	0.02
v/c Ratio	0.68	0.21		0.30	0.54			0.48			0.02	0.09
Uniform Delay, d1	21.0	4.7		25.0	9.7			19.7			18.0	18.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	5.2	0.1		0.9	0.5			0.6			0.0	0.1
Delay (s)	26.2	4.8		26.0	10.2			20.3			18.0	18.3
Level of Service	C	A		C	B			C			B	B
Approach Delay (s)		11.3			10.5			20.3			18.3	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	9.3
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

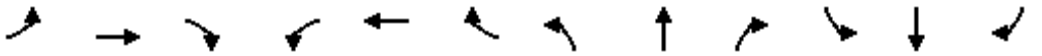
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	236	307	551	411	344	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5		2.8	2.5	3.0	2.8
Lane Util. Factor	0.97		1.00	1.00	1.00	1.00
Frt	0.92		1.00	0.85	1.00	1.00
Flt Protected	0.98		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3237		1863	1583	1770	1863
Flt Permitted	0.98		1.00	1.00	0.95	1.00
Satd. Flow (perm)	3237		1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	248	323	580	433	362	137
RTOR Reduction (vph)	253	0	0	45	0	0
Lane Group Flow (vph)	318	0	580	388	362	137
Turn Type				pm+ov	Prot	
Protected Phases	8		6	8	5	2
Permitted Phases				6		
Actuated Green, G (s)	13.0		24.7	37.7	16.2	44.9
Effective Green, g (s)	14.5		27.2	40.7	17.2	47.4
Actuated g/C Ratio	0.22		0.40	0.61	0.26	0.71
Clearance Time (s)	4.0		5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0		4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	698		754	959	453	1314
v/s Ratio Prot	c0.10		c0.31	0.09	c0.20	0.07
v/s Ratio Perm				0.16		
v/c Ratio	0.46		0.77	0.40	0.80	0.10
Uniform Delay, d1	22.9		17.3	6.9	23.4	3.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		5.2	0.1	8.9	0.1
Delay (s)	23.1		22.5	7.0	32.3	3.2
Level of Service	C		C	A	C	A
Approach Delay (s)	23.1		15.9			24.3
Approach LOS	C		B			C

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	67.2	Sum of lost time (s)	8.3
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



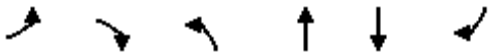
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	29	150	339	10	0	43	0	71	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0		5.0		5.0			
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00		1.00			
Frt		1.00	0.85	1.00	1.00		1.00		0.85			
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (prot)		1863	1583	1770	1863		1770		1583			
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (perm)		1863	1583	1770	1863		1770		1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	31	158	357	11	0	45	0	75	0	0	0
RTOR Reduction (vph)	0	0	135	0	0	0	0	0	54	0	0	0
Lane Group Flow (vph)	0	31	23	357	11	0	45	0	21	0	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		7.9	7.9	16.9	29.8		2.1		15.2			
Effective Green, g (s)		7.9	7.9	16.9	29.8		2.1		15.2			
Actuated g/C Ratio		0.14	0.14	0.31	0.54		0.04		0.28			
Clearance Time (s)		5.0	5.0	5.0	5.0		5.0		5.0			
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0			
Lane Grp Cap (vph)		268	227	544	1009		68		437			
v/s Ratio Prot		c0.02		c0.20	0.01		c0.03					
v/s Ratio Perm			0.01						c0.01			
v/c Ratio		0.12	0.10	0.66	0.01		0.66		0.05			
Uniform Delay, d1		20.5	20.5	16.5	5.8		26.1		14.6			
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00			
Incremental Delay, d2		0.2	0.2	2.9	0.0		21.6		0.0			
Delay (s)		20.7	20.7	19.4	5.8		47.7		14.6			
Level of Service		C	C	B	A		D		B			
Approach Delay (s)		20.7			19.0			27.0			0.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2	92	31	0	4	21	192	14	16	536	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0		4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770		1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770		1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	2	97	33	0	4	22	202	15	17	564	5
RTOR Reduction (vph)	0	0	81	0	0	3	0	0	8	0	0	3
Lane Group Flow (vph)	7	2	16	33	0	1	22	202	7	17	564	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	7.4	7.4	2.2		9.2	0.7	22.1	22.1	0.4	21.8	21.8
Effective Green, g (s)	1.4	9.4	8.4	3.2		10.2	1.7	24.1	23.1	1.4	23.8	22.8
Actuated g/C Ratio	0.03	0.18	0.16	0.06		0.20	0.03	0.46	0.44	0.03	0.46	0.44
Clearance Time (s)	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	48	336	255	109		310	58	2352	702	48	2323	693
v/s Ratio Prot	0.00	0.00		c0.02			c0.01	0.04		0.01	c0.11	
v/s Ratio Perm			c0.01			0.00			0.00			0.00
v/c Ratio	0.15	0.01	0.06	0.30		0.00	0.38	0.09	0.01	0.35	0.24	0.00
Uniform Delay, d1	24.8	17.5	18.5	23.4		16.9	24.7	7.8	8.1	24.9	8.6	8.3
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0	0.1	1.6		0.0	4.1	0.0	0.0	4.5	0.1	0.0
Delay (s)	26.2	17.5	18.6	25.0		16.9	28.8	7.9	8.1	29.4	8.7	8.3
Level of Service	C	B	B	C		B	C	A	A	C	A	A
Approach Delay (s)		19.1			24.1			9.8			9.3	
Approach LOS		B			C			A			A	

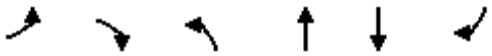
Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	186	131	59	735	670	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1563	1770	5085	5085	1549
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1563	1770	5085	5085	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	196	138	62	774	705	88
RTOR Reduction (vph)	0	106	0	0	0	53
Lane Group Flow (vph)	196	32	62	774	705	35
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.3	8.3	1.6	19.9	14.3	14.3
Effective Green, g (s)	8.3	8.3	1.6	19.9	14.3	14.3
Actuated g/C Ratio	0.23	0.23	0.04	0.55	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	406	358	78	2795	2009	612
v/s Ratio Prot	c0.11		c0.04	0.15	c0.14	
v/s Ratio Perm		0.02				0.02
v/c Ratio	0.48	0.09	0.79	0.28	0.35	0.06
Uniform Delay, d1	12.1	11.0	17.1	4.3	7.7	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	41.2	0.1	0.1	0.0
Delay (s)	13.0	11.1	58.3	4.4	7.8	6.8
Level of Service	B	B	E	A	A	A
Approach Delay (s)	12.2			8.4	7.7	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	36.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

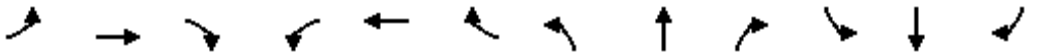
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	46	55	18	748	790	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1563	1770	5085	5085	1549
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1563	1770	5085	5085	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	48	58	19	787	832	13
RTOR Reduction (vph)	0	49	0	0	0	7
Lane Group Flow (vph)	48	9	19	787	832	6
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	4.4	4.4	0.4	17.6	13.2	13.2
Effective Green, g (s)	4.4	4.4	0.4	17.6	13.2	13.2
Actuated g/C Ratio	0.15	0.15	0.01	0.59	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	260	229	24	2983	2237	682
v/s Ratio Prot	c0.03		0.01	c0.15	c0.16	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.18	0.04	0.79	0.26	0.37	0.01
Uniform Delay, d1	11.2	11.0	14.8	3.0	5.6	4.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	94.5	0.0	0.1	0.0
Delay (s)	11.6	11.0	109.3	3.1	5.7	4.7
Level of Service	B	B	F	A	A	A
Approach Delay (s)	11.3			5.6	5.7	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	30.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



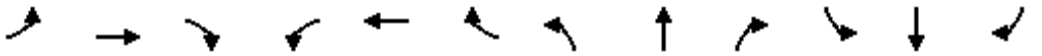
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	0	106	32	0	7	29	976	11	3	788	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.92			0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1665			1744		1770	5085	1547	1770	5085	1547
Flt Permitted		0.98			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1665			1744		1770	5085	1547	1770	5085	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	0	112	34	0	7	31	1027	12	3	829	14
RTOR Reduction (vph)	0	56	0	0	6	0	0	0	5	0	0	7
Lane Group Flow (vph)	0	130	0	0	35	0	31	1027	7	3	829	7
Confl. Peds. (#/hr)			2			2	2		2			2
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)		12.2			4.7		1.2	25.4	25.4	0.4	24.6	24.6
Effective Green, g (s)		12.2			4.7		1.2	25.4	25.4	0.4	24.6	24.6
Actuated g/C Ratio		0.21			0.08		0.02	0.43	0.43	0.01	0.42	0.42
Clearance Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		346			140		36	2200	669	12	2131	648
v/s Ratio Prot		c0.08			c0.02		c0.02	c0.20		0.00	0.16	
v/s Ratio Perm									0.00			0.00
v/c Ratio		0.38			0.25		0.86	0.47	0.01	0.25	0.39	0.01
Uniform Delay, d1		20.0			25.3		28.7	11.8	9.5	29.0	11.8	9.9
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7			0.9		95.3	0.2	0.0	10.7	0.1	0.0
Delay (s)		20.7			26.3		124.0	12.0	9.5	39.7	12.0	10.0
Level of Service		C			C		F	B	A	D	B	A
Approach Delay (s)		20.7			26.3			15.2			12.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

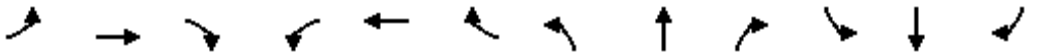
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	659	77	36	436	30	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	694	81	38	459	32	16
RTOR Reduction (vph)	0	32	0	0	0	14
Lane Group Flow (vph)	694	49	38	459	32	2
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	22.7	22.7	1.4	29.8	3.9	3.9
Effective Green, g (s)	26.1	26.1	2.4	33.2	4.9	4.9
Actuated g/C Ratio	0.60	0.60	0.06	0.76	0.11	0.11
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2128	952	98	2707	200	179
v/s Ratio Prot	c0.20		c0.02	0.13	c0.02	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.33	0.05	0.39	0.17	0.16	0.01
Uniform Delay, d1	4.3	3.6	19.8	1.4	17.4	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.9	0.1	0.1	0.0
Delay (s)	4.4	3.6	20.7	1.4	17.5	17.1
Level of Service	A	A	C	A	B	B
Approach Delay (s)	4.4			2.9	17.4	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	10	34	54	19	47	36	620	17	22	567	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	141	11	36	57	20	49	38	653	18	23	597	26
RTOR Reduction (vph)	0	0	28	0	0	43	0	0	11	0	0	16
Lane Group Flow (vph)	141	11	8	57	20	6	38	653	7	23	597	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.4	11.0	11.0	3.1	5.7	5.7	1.4	21.3	21.3	0.4	20.3	20.3
Effective Green, g (s)	9.4	13.0	12.0	4.1	7.7	6.7	2.4	23.3	22.3	1.4	22.3	21.3
Actuated g/C Ratio	0.17	0.23	0.22	0.07	0.14	0.12	0.04	0.42	0.40	0.03	0.40	0.38
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	298	434	340	130	257	190	76	2123	633	44	2032	604
v/s Ratio Prot	c0.08	0.01		0.03	c0.01		c0.02	c0.13		0.01	0.12	
v/s Ratio Perm			0.00			0.00			0.00			0.01
v/c Ratio	0.47	0.03	0.02	0.44	0.08	0.03	0.50	0.31	0.01	0.52	0.29	0.02
Uniform Delay, d1	21.0	16.5	17.3	24.7	21.0	21.7	26.1	10.9	10.1	26.9	11.4	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0	0.0	2.4	0.1	0.1	5.1	0.1	0.0	10.8	0.1	0.0
Delay (s)	22.2	16.5	17.3	27.1	21.1	21.7	31.2	10.9	10.1	37.6	11.5	10.7
Level of Service	C	B	B	C	C	C	C	B	B	D	B	B
Approach Delay (s)		20.9			24.1			12.0			12.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

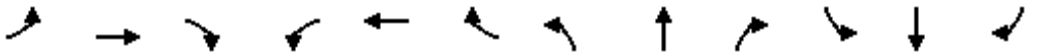


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	95	118	203	29	0	38	578	101	2	638	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	4.0	3.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	100	124	214	31	0	40	608	106	2	672	16
RTOR Reduction (vph)	0	0	102	0	0	0	0	0	68	0	0	11
Lane Group Flow (vph)	100	100	22	214	31	0	40	608	38	2	672	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.8	9.6	9.6	12.5	13.3		1.5	20.5	20.5	0.6	19.6	19.6
Effective Green, g (s)	9.8	10.6	10.6	13.5	14.3		2.5	22.5	21.5	1.6	21.6	20.6
Actuated g/C Ratio	0.16	0.18	0.18	0.22	0.24		0.04	0.37	0.36	0.03	0.36	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)	288	328	279	397	443		74	1901	565	47	1825	542
v/s Ratio Prot	0.06	c0.05		c0.12	0.02		c0.02	0.12		0.00	c0.13	
v/s Ratio Perm			0.01						0.02			0.00
v/c Ratio	0.35	0.30	0.08	0.54	0.07		0.54	0.32	0.07	0.04	0.37	0.01
Uniform Delay, d1	22.4	21.6	20.7	20.6	17.8		28.3	13.4	12.7	28.6	14.3	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.5	0.1	1.4	0.1		7.8	0.2	0.1	0.4	0.3	0.0
Delay (s)	23.1	22.1	20.8	22.0	17.9		36.1	13.6	12.9	28.9	14.6	13.1
Level of Service	C	C	C	C	B		D	B	B	C	B	B
Approach Delay (s)		21.9			21.5			14.7			14.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

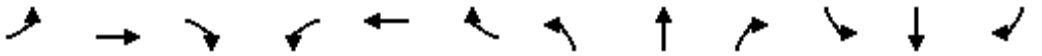
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	65	0	723	32	18	942
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	1.00		1.00	0.85	1.00	1.00
Flt Protected	0.95		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770		5085	1583	1770	5085
Flt Permitted	0.95		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	0	761	34	19	992
RTOR Reduction (vph)	0	0	0	15	0	0
Lane Group Flow (vph)	68	0	761	19	19	992
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.5		27.4	27.4	0.9	33.3
Effective Green, g (s)	6.5		27.4	27.4	0.9	33.3
Actuated g/C Ratio	0.13		0.55	0.55	0.02	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	231		2798	871	32	3400
v/s Ratio Prot	c0.04		0.15		0.01	c0.20
v/s Ratio Perm				0.01		
v/c Ratio	0.29		0.27	0.02	0.59	0.29
Uniform Delay, d1	19.6		5.9	5.1	24.3	3.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7		0.1	0.0	26.2	0.0
Delay (s)	20.3		6.0	5.1	50.4	3.4
Level of Service	C		A	A	D	A
Approach Delay (s)	20.3		5.9			4.3
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	49.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	6	55	146	18	18	15	1033	58	5	1063	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	6	58	154	19	19	16	1087	61	5	1119	144
RTOR Reduction (vph)	0	0	52	0	0	15	0	0	37	0	0	87
Lane Group Flow (vph)	52	6	6	154	19	4	16	1087	24	5	1119	57
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.9	6.1	6.1	8.2	11.4	11.4	0.9	23.3	23.3	0.7	23.1	23.1
Effective Green, g (s)	2.9	6.1	6.1	8.2	11.4	11.4	0.9	23.3	23.3	0.7	23.1	23.1
Actuated g/C Ratio	0.05	0.10	0.10	0.14	0.20	0.20	0.02	0.40	0.40	0.01	0.40	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	88	195	166	249	364	310	27	2032	633	21	2015	627
v/s Ratio Prot	0.03	0.00		c0.09	c0.01		c0.01	0.21		0.00	c0.22	
v/s Ratio Perm			0.00			0.00			0.02			0.04
v/c Ratio	0.59	0.03	0.04	0.62	0.05	0.01	0.59	0.53	0.04	0.24	0.56	0.09
Uniform Delay, d1	27.1	23.4	23.5	23.6	19.1	18.9	28.5	13.4	10.7	28.5	13.6	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.2	0.1	0.1	4.5	0.1	0.0	30.3	0.3	0.0	5.8	0.3	0.1
Delay (s)	37.3	23.5	23.5	28.1	19.1	18.9	58.8	13.6	10.7	34.3	14.0	11.1
Level of Service	D	C	C	C	B	B	E	B	B	C	B	B
Approach Delay (s)		29.7			26.3			14.1			13.7	
Approach LOS		C			C			B			B	

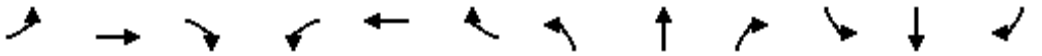
Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	133	64	84	49	162	44	1175	118	197	717	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1562	1770	1863	1562	1770	3539	1545	1770	3539	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1562	1770	1863	1562	1770	3539	1545	1770	3539	1545
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	140	67	88	52	171	46	1237	124	207	755	25
RTOR Reduction (vph)	0	0	54	0	0	134	0	0	73	0	0	13
Lane Group Flow (vph)	47	140	13	88	52	37	46	1237	51	207	755	12
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.9	14.1	14.1	5.0	16.2	16.2	5.2	30.9	30.9	9.1	34.8	34.8
Effective Green, g (s)	2.9	14.1	14.1	5.0	16.2	16.2	5.2	30.9	30.9	9.1	34.8	34.8
Actuated g/C Ratio	0.04	0.19	0.19	0.07	0.22	0.22	0.07	0.41	0.41	0.12	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	68	350	293	118	402	337	123	1456	636	214	1640	716
v/s Ratio Prot	0.03	c0.08		c0.05	0.03		0.03	c0.35		c0.12	c0.21	
v/s Ratio Perm			0.01			0.02			0.03			0.01
v/c Ratio	0.69	0.40	0.04	0.75	0.13	0.11	0.37	0.85	0.08	0.97	0.46	0.02
Uniform Delay, d1	35.7	26.8	25.0	34.4	23.8	23.7	33.4	20.0	13.5	32.9	13.7	10.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.1	0.8	0.1	22.3	0.1	0.1	1.9	4.8	0.1	51.6	0.2	0.0
Delay (s)	61.8	27.5	25.0	56.7	23.9	23.8	35.3	24.8	13.5	84.5	14.0	10.9
Level of Service	E	C	C	E	C	C	D	C	B	F	B	B
Approach Delay (s)		33.2			33.1			24.2			28.7	
Approach LOS		C			C			C			C	

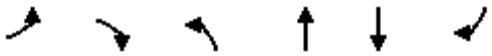
Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



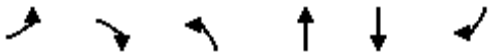
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	15	115	82	4	0	83	1006	74	0	817	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	4.0	4.0		3.0	5.0	6.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00		0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1593	1676	1425	1593	1676		1593	3185	1425		3185	1425
Flt Permitted	0.95	1.00	1.00	0.75	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1593	1676	1425	1252	1676		1593	3185	1425		3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	221	16	121	86	4	0	87	1059	78	0	860	8
RTOR Reduction (vph)	0	0	79	0	0	0	0	0	37	0	0	5
Lane Group Flow (vph)	221	16	42	86	4	0	87	1059	41	0	860	3
Turn Type	Prot		Perm	Perm		Perm	Prot		Perm	Perm		Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Actuated Green, G (s)	11.6	23.0	23.0	7.4	7.4		4.4	35.9	35.9		27.5	27.5
Effective Green, g (s)	12.6	23.0	24.0	7.4	7.4		5.4	36.9	35.9		28.5	28.5
Actuated g/C Ratio	0.18	0.33	0.35	0.11	0.11		0.08	0.54	0.52		0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.7	4.7		4.7	4.7
Lane Grp Cap (vph)	291	559	496	134	180		125	1706	742		1317	589
v/s Ratio Prot	c0.14	0.01			0.00		c0.05	c0.33			0.27	
v/s Ratio Perm			0.03	c0.07					0.03			0.00
v/c Ratio	0.76	0.03	0.08	0.64	0.02		0.70	0.62	0.05		0.65	0.01
Uniform Delay, d1	26.7	15.4	15.1	29.5	27.5		30.9	11.1	8.1		16.2	11.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	9.7	0.0	0.0	7.6	0.0		12.7	0.9	0.1		1.5	0.0
Delay (s)	36.4	15.4	15.1	37.1	27.5		43.7	12.1	8.2		17.7	11.9
Level of Service	D	B	B	D	C		D	B	A		B	B
Approach Delay (s)		28.3			36.7			14.1			17.7	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



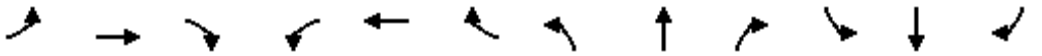
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	82	343	59	1106	1016	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	86	361	62	1164	1069	14
RTOR Reduction (vph)	0	256	0	0	0	8
Lane Group Flow (vph)	86	105	62	1164	1069	6
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	9.8	9.8	4.3	32.9	23.6	23.6
Effective Green, g (s)	9.8	9.8	4.3	32.9	23.6	23.6
Actuated g/C Ratio	0.19	0.19	0.08	0.62	0.45	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	329	294	144	2209	1585	709
v/s Ratio Prot	0.05		0.04	c0.33	c0.30	
v/s Ratio Perm		c0.07				0.00
v/c Ratio	0.26	0.36	0.43	0.53	0.67	0.01
Uniform Delay, d1	18.4	18.7	23.0	5.5	11.5	8.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.8	2.1	0.2	1.1	0.0
Delay (s)	18.8	19.5	25.1	5.8	12.7	8.1
Level of Service	B	B	C	A	B	A
Approach Delay (s)	19.3			6.7	12.6	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	221	121	73	1240	1247	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	233	127	77	1305	1313	167
RTOR Reduction (vph)	0	98	0	0	0	76
Lane Group Flow (vph)	233	29	77	1305	1313	91
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.2	13.2	4.7	39.6	30.9	30.9
Effective Green, g (s)	14.2	14.2	5.7	43.0	34.3	34.3
Actuated g/C Ratio	0.23	0.23	0.09	0.68	0.55	0.55
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	400	358	161	2423	1933	865
v/s Ratio Prot	c0.13		0.04	c0.37	c0.37	
v/s Ratio Perm		0.02				0.06
v/c Ratio	0.58	0.08	0.48	0.54	0.68	0.11
Uniform Delay, d1	21.7	19.2	27.1	4.9	10.3	6.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0	0.8	0.4	1.2	0.1
Delay (s)	23.1	19.2	28.0	5.3	11.5	7.0
Level of Service	C	B	C	A	B	A
Approach Delay (s)	21.7			6.6	11.0	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	8.2
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

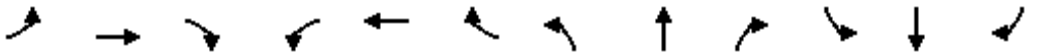


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	203	80	30	47	25	36	11	1064	52	70	1189	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9	3.7	3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	214	84	32	49	26	38	12	1120	55	74	1252	94
RTOR Reduction (vph)	0	0	26	0	0	34	0	0	29	0	0	44
Lane Group Flow (vph)	214	84	6	49	26	4	12	1120	26	74	1252	50
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	14.9	14.9	14.9	6.2	6.2	6.2	1.4	35.9	35.9	6.8	41.3	41.3
Effective Green, g (s)	16.5	16.5	15.9	7.8	7.8	7.8	2.4	39.3	39.3	7.8	44.7	44.7
Actuated g/C Ratio	0.20	0.20	0.19	0.09	0.09	0.09	0.03	0.47	0.47	0.09	0.53	0.53
Clearance Time (s)	4.9	4.9	4.9	5.3	5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1	2.0	2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	348	366	300	164	173	147	51	1656	741	164	1883	842
v/s Ratio Prot	c0.12	0.05		c0.03	0.01		0.01	0.32		c0.04	c0.35	
v/s Ratio Perm			0.00			0.00			0.02			0.03
v/c Ratio	0.61	0.23	0.02	0.30	0.15	0.02	0.24	0.68	0.03	0.45	0.66	0.06
Uniform Delay, d1	30.8	28.4	27.7	35.5	35.1	34.6	39.9	17.4	12.1	36.1	14.2	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.3	0.0	0.4	0.1	0.0	0.9	1.4	0.0	0.7	1.1	0.1
Delay (s)	34.1	28.7	27.7	35.9	35.2	34.7	40.8	18.8	12.1	36.8	15.4	9.6
Level of Service	C	C	C	D	D	C	D	B	B	D	B	A
Approach Delay (s)		32.1			35.3			18.7			16.1	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	74	64	1361	40	62	1491
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1701		5085	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1701		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	67	1433	42	65	1569
RTOR Reduction (vph)	56	0	0	21	0	0
Lane Group Flow (vph)	89	0	1433	21	65	1569
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Actuated Green, G (s)	9.2		27.9	27.9	4.8	37.7
Effective Green, g (s)	9.2		27.9	27.9	4.8	37.7
Actuated g/C Ratio	0.16		0.49	0.49	0.08	0.66
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275		2493	776	149	3369
v/s Ratio Prot	c0.05		c0.28		0.04	c0.31
v/s Ratio Perm				0.01		
v/c Ratio	0.32		0.57	0.03	0.44	0.47
Uniform Delay, d1	21.1		10.3	7.5	24.8	4.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7		0.3	0.0	2.0	0.1
Delay (s)	21.8		10.6	7.5	26.8	4.8
Level of Service	C		B	A	C	A
Approach Delay (s)	21.8		10.5			5.7
Approach LOS	C		B			A

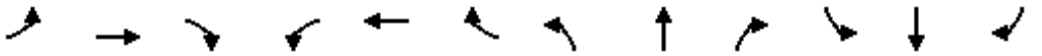
Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1	89	48	2	37	11	1307	15	10	1472	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1566		1770	1577		1770	5085	1547	1770	5085	1547
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1566		1770	1577		1770	5085	1547	1770	5085	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	1	94	51	2	39	12	1376	16	11	1549	92
RTOR Reduction (vph)	0	80	0	0	35	0	0	0	8	0	0	44
Lane Group Flow (vph)	74	15	0	51	6	0	12	1376	8	11	1549	48
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	5.8	9.0		2.3	5.5		0.5	30.9	30.9	0.5	30.9	30.9
Effective Green, g (s)	5.8	9.0		2.3	5.5		0.5	30.9	30.9	0.5	30.9	30.9
Actuated g/C Ratio	0.10	0.15		0.04	0.09		0.01	0.53	0.53	0.01	0.53	0.53
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	175	240		69	148		15	2677	814	15	2677	814
v/s Ratio Prot	0.04	c0.01		c0.03	0.00		c0.01	0.27		0.01	c0.30	
v/s Ratio Perm									0.01			0.03
v/c Ratio	0.42	0.06		0.74	0.04		0.80	0.51	0.01	0.73	0.58	0.06
Uniform Delay, d1	24.9	21.2		27.9	24.2		29.1	9.0	6.6	29.0	9.5	6.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.1		33.5	0.1		132.2	0.7	0.0	103.2	0.9	0.1
Delay (s)	26.5	21.4		61.4	24.3		161.3	9.7	6.6	132.3	10.4	6.9
Level of Service	C	C		E	C		F	A	A	F	B	A
Approach Delay (s)		23.6			44.9			11.0			11.0	
Approach LOS		C			D			B			B	

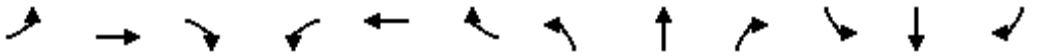
Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



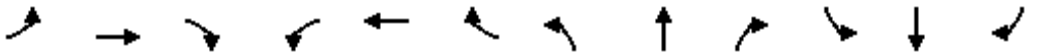
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	11	259	171	15	0	71	0	46	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0		5.0			
Lane Util. Factor		1.00	1.00		1.00		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (prot)		1863	1583		1781		1770		1583			
Flt Permitted		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (perm)		1863	1583		1781		1770		1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	12	273	180	16	0	75	0	48	0	0	0
RTOR Reduction (vph)	0	0	227	0	0	0	0	0	33	0	0	0
Lane Group Flow (vph)	0	12	46	0	196	0	75	0	15	0	0	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		9.2	9.2		12.9		4.6		17.2			
Effective Green, g (s)		9.2	9.2		12.9		4.6		17.2			
Actuated g/C Ratio		0.17	0.17		0.24		0.08		0.32			
Clearance Time (s)		5.0	5.0		5.0		5.0		5.0			
Vehicle Extension (s)		3.0	3.0		3.0		3.0		3.0			
Lane Grp Cap (vph)		316	268		423		150		501			
v/s Ratio Prot		0.01			c0.11		c0.04					
v/s Ratio Perm			c0.03						c0.01			
v/c Ratio		0.04	0.17		0.46		0.50		0.03			
Uniform Delay, d1		18.9	19.3		17.7		23.8		12.8			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.0	0.3		0.8		2.6		0.0			
Delay (s)		18.9	19.6		18.5		26.4		12.8			
Level of Service		B	B		B		C		B			
Approach Delay (s)		19.6			18.5			21.1			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



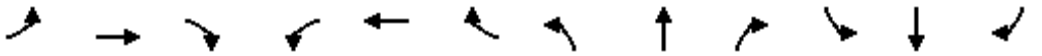
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	209	70	59	11	6	61	98	17	215	209	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1857	1583		1788	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1857	1583		1788	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	220	74	62	12	6	64	103	18	226	220	5
RTOR Reduction (vph)	0	0	58	0	0	5	0	0	15	0	0	3
Lane Group Flow (vph)	0	234	16	0	74	1	64	103	3	226	220	2
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		14.7	14.7		8.5	8.5	4.5	11.7	11.7	14.4	21.6	21.6
Effective Green, g (s)		14.7	14.7		8.5	8.5	4.5	11.7	11.7	14.4	21.6	21.6
Actuated g/C Ratio		0.21	0.21		0.12	0.12	0.06	0.17	0.17	0.21	0.31	0.31
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		394	336		219	194	115	597	267	368	1103	493
v/s Ratio Prot		c0.13			c0.04		0.04	0.03		c0.13	c0.06	
v/s Ratio Perm			0.01			0.00			0.00			0.00
v/c Ratio		0.59	0.05		0.34	0.00	0.56	0.17	0.01	0.61	0.20	0.00
Uniform Delay, d1		24.6	21.7		27.8	26.7	31.4	24.7	24.0	24.9	17.5	16.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.4	0.1		0.9	0.0	5.7	0.1	0.0	3.0	0.1	0.0
Delay (s)		27.0	21.8		28.7	26.7	37.2	24.8	24.0	28.0	17.6	16.4
Level of Service		C	C		C	C	D	C	C	C	B	B
Approach Delay (s)		25.8			28.6			29.0			22.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	96	317	0	2	38	128	677	0	46	534	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.88			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1648			1863	1583	1770	3539		1770	3539	1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1648			1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	132	101	334	0	2	40	135	713	0	48	562	107
RTOR Reduction (vph)	0	181	0	0	0	37	0	0	0	0	0	73
Lane Group Flow (vph)	132	254	0	0	2	3	135	713	0	48	562	34
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	8.0	16.0			4.0	4.0	6.5	21.3		1.3	16.1	16.1
Effective Green, g (s)	8.0	16.0			4.0	4.0	6.5	21.3		1.3	16.1	16.1
Actuated g/C Ratio	0.16	0.32			0.08	0.08	0.13	0.42		0.03	0.32	0.32
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	280	521			147	125	227	1490		45	1126	504
v/s Ratio Prot	0.07	c0.15			0.00		c0.08	c0.20		0.03	0.16	
v/s Ratio Perm						0.00						0.02
v/c Ratio	0.47	0.49			0.01	0.03	0.59	0.48		1.07	0.50	0.07
Uniform Delay, d1	19.4	14.0			21.5	21.5	20.8	10.6		24.7	14.0	12.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.7			0.0	0.1	4.1	0.2		154.4	0.3	0.1
Delay (s)	20.6	14.7			21.5	21.6	24.9	10.9		179.0	14.3	12.1
Level of Service	C	B			C	C	C	B		F	B	B
Approach Delay (s)		16.1			21.6			13.1			25.0	
Approach LOS		B			C			B			C	

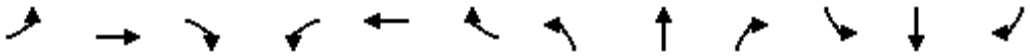
Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	50.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	7	26	42	2	14	11	573	264	236	268	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1783	1562	1770	1863	1562	1770	3539	1547	1770	3539	1547
Flt Permitted		0.30	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		552	1562	1770	1863	1562	1770	3539	1547	1770	3539	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	7	27	44	2	15	12	603	278	248	282	11
RTOR Reduction (vph)	0	0	22	0	0	14	0	0	187	0	0	6
Lane Group Flow (vph)	0	67	5	44	2	1	12	603	91	248	282	5
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Perm		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Actuated Green, G (s)		12.8	12.8	6.3	6.3	6.3	0.5	21.5	21.5	9.1	30.1	30.1
Effective Green, g (s)		12.8	12.8	6.3	6.3	6.3	0.5	21.5	21.5	9.1	30.1	30.1
Actuated g/C Ratio		0.19	0.19	0.10	0.10	0.10	0.01	0.33	0.33	0.14	0.46	0.46
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		108	304	170	179	150	13	1158	506	245	1621	709
v/s Ratio Prot				c0.02	0.00		0.01	c0.17		c0.14	0.08	
v/s Ratio Perm		c0.12	0.00			0.00			0.06			0.00
v/c Ratio		0.62	0.02	0.26	0.01	0.01	0.92	0.52	0.18	1.01	0.17	0.01
Uniform Delay, d1		24.2	21.4	27.5	26.9	26.9	32.6	17.9	15.8	28.3	10.5	9.7
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		10.6	0.0	0.8	0.0	0.0	207.3	0.4	0.2	60.7	0.1	0.0
Delay (s)		34.8	21.4	28.3	26.9	26.9	239.9	18.3	16.0	89.0	10.5	9.7
Level of Service		C	C	C	C	C	F	B	B	F	B	A
Approach Delay (s)		30.9			27.9			20.6			46.5	
Approach LOS		C			C			C			D	

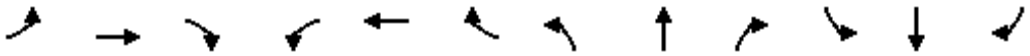
Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



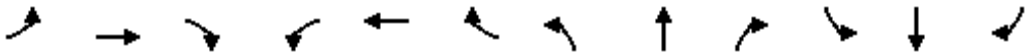
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	3	24	25	9	38	38	747	3	18	310	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4		3.0	3.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.95	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1776	1583		1796	1583	1770	3537		1770	3353	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1776	1583		1796	1583	1770	3537		1770	3353	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	144	3	25	26	9	40	40	786	3	19	326	176
RTOR Reduction (vph)	0	0	20	0	0	36	0	0	0	0	72	0
Lane Group Flow (vph)	0	147	5	0	35	4	40	789	0	19	430	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		9.0	9.0		4.5	4.5	2.2	20.6		0.8	19.2	
Effective Green, g (s)		10.0	10.0		5.5	5.5	3.2	22.9		1.8	21.5	
Actuated g/C Ratio		0.19	0.19		0.10	0.10	0.06	0.44		0.03	0.41	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		338	301		188	166	108	1540		61	1371	
v/s Ratio Prot		c0.08			c0.02		c0.02	c0.22		0.01	0.13	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.43	0.02		0.19	0.03	0.37	0.51		0.31	0.31	
Uniform Delay, d1		18.8	17.3		21.5	21.1	23.7	10.8		24.8	10.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.2	0.0	0.8	0.4		1.1	0.2	
Delay (s)		19.1	17.3		21.7	21.2	24.5	11.2		25.9	10.7	
Level of Service		B	B		C	C	C	B		C	B	
Approach Delay (s)		18.9			21.4			11.8			11.3	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



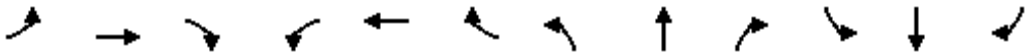
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	24	38	29	5	21	21	724	17	4	348	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.95		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791	1583		1721		1770	3527		1770	3497	
Flt Permitted		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1791	1583		1721		1770	3527		1770	3497	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	98	25	40	31	5	22	22	762	18	4	366	32
RTOR Reduction (vph)	0	0	34	0	20	0	0	2	0	0	6	0
Lane Group Flow (vph)	0	123	6	0	38	0	22	778	0	4	392	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		8.7	8.7		4.7		0.6	26.3		0.7	26.4	
Effective Green, g (s)		8.7	8.7		4.7		0.6	26.3		0.7	26.4	
Actuated g/C Ratio		0.15	0.15		0.08		0.01	0.45		0.01	0.45	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		268	237		139		18	1597		21	1589	
v/s Ratio Prot		c0.07			c0.02		c0.01	c0.22		0.00	0.11	
v/s Ratio Perm			0.00									
v/c Ratio		0.46	0.03		0.27		1.22	0.49		0.19	0.25	
Uniform Delay, d1		22.6	21.1		25.1		28.8	11.2		28.4	9.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		0.4		289.8	0.3		1.6	0.1	
Delay (s)		23.0	21.1		25.5		318.5	11.4		30.0	9.8	
Level of Service		C	C		C		F	B		C	A	
Approach Delay (s)		22.5			25.5			19.9			10.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	17.7
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	6	272	13	11	13	97	690	12	2	447	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1781	1583		1814	1583	1770	3530		1770	3523	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1781	1583		1814	1583	1770	3530		1770	3523	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	6	286	14	12	14	102	726	13	2	471	15
RTOR Reduction (vph)	0	0	229	0	0	13	0	1	0	0	2	0
Lane Group Flow (vph)	0	69	57	0	26	1	102	738	0	2	484	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		10.0	10.0		4.1	4.1	4.8	23.2		0.6	19.0	
Effective Green, g (s)		11.0	11.0		5.1	5.1	5.8	25.9		1.6	21.7	
Actuated g/C Ratio		0.20	0.20		0.09	0.09	0.10	0.47		0.03	0.39	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		352	313		166	145	185	1644		51	1375	
v/s Ratio Prot		c0.04			c0.01		c0.06	c0.21		0.00	0.14	
v/s Ratio Perm			0.04			0.00						
v/c Ratio		0.20	0.18		0.16	0.01	0.55	0.45		0.04	0.35	
Uniform Delay, d1		18.6	18.6		23.3	23.0	23.7	10.0		26.3	12.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.3		0.4	0.0	2.0	0.3		0.1	0.2	
Delay (s)		18.9	18.8		23.7	23.0	25.7	10.3		26.4	12.2	
Level of Service		B	B		C	C	C	B		C	B	
Approach Delay (s)		18.8			23.5			12.1			12.2	
Approach LOS		B			C			B			B	

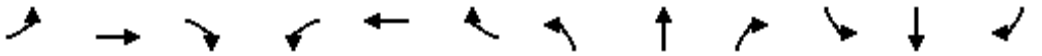
Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	24	35	100	51	91	35	1247	20	363	477	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1518	1681	1741	1583	1770	3527		1770	3474	
Flt Permitted		0.97	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799	1518	1681	1741	1583	1770	3527		1770	3474	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	25	37	105	54	96	37	1313	21	382	502	45
RTOR Reduction (vph)	0	0	33	0	0	88	0	1	0	0	5	0
Lane Group Flow (vph)	0	86	4	78	81	8	37	1333	0	382	542	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		11.6	11.6	8.4	8.4	8.4	3.3	46.0		24.6	67.3	
Effective Green, g (s)		12.6	12.6	9.4	9.4	9.4	5.3	48.0		26.6	69.3	
Actuated g/C Ratio		0.11	0.11	0.09	0.09	0.09	0.05	0.44		0.24	0.63	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		207	175	144	149	136	86	1545		430	2197	
v/s Ratio Prot		c0.05		0.05	c0.05		0.02	c0.38		c0.22	0.16	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.42	0.02	0.54	0.54	0.06	0.43	0.86		0.89	0.25	
Uniform Delay, d1		45.1	43.0	48.0	48.0	46.0	50.7	27.8		40.1	8.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0	0.0	3.3	3.2	0.1	1.3	5.4		19.0	0.1	
Delay (s)		46.1	43.1	51.3	51.2	46.2	51.9	33.2		59.0	8.9	
Level of Service		D	D	D	D	D	D	C		E	A	
Approach Delay (s)		45.2			49.3			33.7			29.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	109.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		

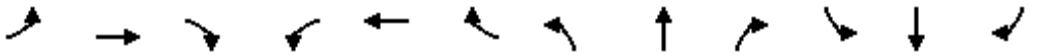
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	0	110	42	0	72	80	1200	33	44	499	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3525		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3525		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	0	116	44	0	76	84	1263	35	46	525	24
RTOR Reduction (vph)	0	0	105	0	0	68	0	2	0	0	0	12
Lane Group Flow (vph)	58	0	11	44	0	8	84	1296	0	46	525	12
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	6.7		6.7	6.5		6.5	6.3	37.3		3.9	34.9	34.9
Effective Green, g (s)	6.7		6.7	7.5		7.5	6.3	38.3		4.9	35.9	34.9
Actuated g/C Ratio	0.09		0.09	0.10		0.10	0.09	0.53		0.07	0.50	0.48
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	164		147	184		165	155	1873		120	1762	766
v/s Ratio Prot	c0.03			c0.02			c0.05	c0.37		0.03	0.15	
v/s Ratio Perm			0.01			0.00						0.01
v/c Ratio	0.35		0.07	0.24		0.05	0.54	0.69		0.38	0.30	0.02
Uniform Delay, d1	30.7		29.9	29.7		29.1	31.5	12.5		32.2	10.7	9.7
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5		0.1	0.2		0.0	2.1	1.3		0.7	0.2	0.0
Delay (s)	31.1		29.9	29.9		29.1	33.6	13.8		32.9	10.8	9.7
Level of Service	C		C	C		C	C	B		C	B	A
Approach Delay (s)		30.3			29.4			15.0			12.5	
Approach LOS		C			C			B			B	

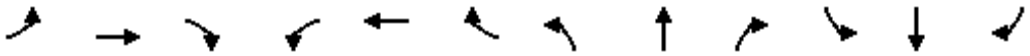
Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	11.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



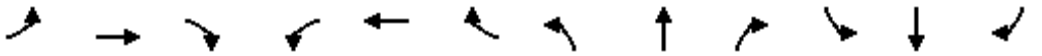
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	4	53	65	4	13	296	811	140	94	905	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1692	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1692	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	88	4	56	68	4	14	312	854	147	99	953	542
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	325
Lane Group Flow (vph)	46	46	56	68	4	14	312	854	147	99	953	217
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	8.3	8.3	75.8	6.5	6.5	75.8	16.0	36.7	75.8	6.3	27.0	27.0
Effective Green, g (s)	9.3	9.3	75.8	7.5	7.5	75.8	17.0	40.1	75.8	7.3	30.4	30.4
Actuated g/C Ratio	0.12	0.12	1.00	0.10	0.10	1.00	0.22	0.53	1.00	0.10	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	206	208	1583	175	184	1583	397	2690	1583	170	2039	635
v/s Ratio Prot	c0.03	0.03		c0.04	0.00		c0.18	0.17		0.06	c0.19	
v/s Ratio Perm			0.04			0.01			0.09			0.14
v/c Ratio	0.22	0.22	0.04	0.39	0.02	0.01	0.79	0.32	0.09	0.58	0.47	0.34
Uniform Delay, d1	30.0	30.0	0.0	32.0	30.8	0.0	27.7	10.1	0.0	32.8	16.7	15.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	0.0	1.4	0.0	0.0	9.1	0.1	0.1	5.0	0.3	0.6
Delay (s)	30.4	30.4	0.0	33.4	30.9	0.0	36.8	10.2	0.1	37.8	17.0	16.3
Level of Service	C	C	A	C	C	A	D	B	A	D	B	B
Approach Delay (s)		18.9			27.9			15.4			18.1	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	11.6
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



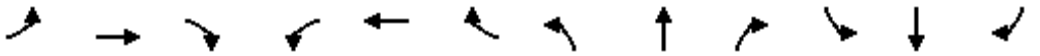
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	2	1	18	2	34	1	1552	130	176	701	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0		3.0	0.6	4.0	4.0	0.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1741	1583	1770	1598		1770	3539	1583	1770	4915	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00	0.13	1.00	
Satd. Flow (perm)	1681	1741	1583	1770	1598		1770	3539	1583	245	4915	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	2	1	19	2	36	1	1634	137	185	738	212
RTOR Reduction (vph)	0	0	1	0	34	0	0	0	21	0	18	0
Lane Group Flow (vph)	2	3	0	19	4	0	1	1634	116	185	932	0
Turn Type	Split		Perm	Split			Prot		Perm	Perm		
Protected Phases	4	4		8	8		5	2			6	
Permitted Phases			4						2	6		
Actuated Green, G (s)	3.9	3.9	3.9	6.8	6.8		1.0	105.3	105.3	100.3	100.3	
Effective Green, g (s)	4.9	3.9	4.9	6.8	6.8		2.0	108.7	105.3	100.3	103.7	
Actuated g/C Ratio	0.04	0.03	0.04	0.05	0.05		0.02	0.84	0.82	0.78	0.80	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	64	53	60	93	84		27	2982	1292	190	3951	
v/s Ratio Prot	0.00	c0.00		c0.01	0.00		0.00	c0.46			0.19	
v/s Ratio Perm			0.00						0.07	c0.75		
v/c Ratio	0.03	0.06	0.00	0.20	0.05		0.04	0.55	0.09	0.97	0.24	
Uniform Delay, d1	59.8	60.8	59.7	58.5	58.0		62.6	3.0	2.3	13.1	3.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.4	0.0	1.1	0.2		0.6	0.2	0.0	57.2	0.0	
Delay (s)	60.0	61.2	59.7	59.6	58.3		63.1	3.2	2.4	70.4	3.1	
Level of Service	E	E	E	E	E		E	A	A	E	A	
Approach Delay (s)		60.5			58.7			3.1			14.1	
Approach LOS		E			E			A			B	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	129.0	Sum of lost time (s)	13.6
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



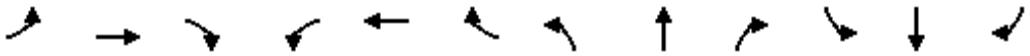
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	2	21	0	6	57	421	1625	0	283	407	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	0.95		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.88	0.85		0.88		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1548	1504		1634		1770	3539		1770	3539	1583
Flt Permitted	0.71	1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1330	1548	1504		1634		1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	2	22	0	6	60	443	1711	0	298	428	47
RTOR Reduction (vph)	0	9	11	0	54	0	0	0	0	0	0	26
Lane Group Flow (vph)	41	3	1	0	12	0	443	1711	0	298	428	21
Turn Type	Perm		Perm				Prot			Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4									6
Actuated Green, G (s)	9.1	9.1	9.1		9.1		27.2	51.6		18.2	42.6	42.6
Effective Green, g (s)	9.1	9.1	9.1		9.1		27.2	51.6		18.2	42.6	42.6
Actuated g/C Ratio	0.10	0.10	0.10		0.10		0.29	0.55		0.19	0.45	0.45
Clearance Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	129	150	146		158		513	1945		343	1606	718
v/s Ratio Prot		0.00			0.01		c0.25	c0.48		0.17	0.12	
v/s Ratio Perm	c0.03		0.00									0.01
v/c Ratio	0.32	0.02	0.01		0.07		0.86	0.88		0.87	0.27	0.03
Uniform Delay, d1	39.5	38.4	38.3		38.6		31.6	18.4		36.7	15.9	14.2
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1	0.0		0.2		14.0	4.9		20.1	0.1	0.0
Delay (s)	40.9	38.4	38.3		38.8		45.6	23.4		56.8	16.0	14.2
Level of Service	D	D	D		D		D	C		E	B	B
Approach Delay (s)		40.0			38.8			27.9			31.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	9	17	43	1	2	8	1696	335	33	462	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	2.6		3.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786	1583	1681	1689	1583	1770	4959		1770	5074	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1786	1583	1681	1689	1583	1770	4959		1770	5074	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	9	18	45	1	2	8	1785	353	35	486	7
RTOR Reduction (vph)	0	0	16	0	0	2	0	25	0	0	1	0
Lane Group Flow (vph)	0	62	2	23	23	0	8	2113	0	35	492	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4						
Actuated Green, G (s)		5.3	5.3	6.5	6.5	6.5	0.9	37.3		1.3	37.7	
Effective Green, g (s)		6.3	6.3	7.5	7.5	7.5	1.9	40.7		2.3	41.1	
Actuated g/C Ratio		0.09	0.09	0.11	0.11	0.11	0.03	0.60		0.03	0.60	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2	0.2	2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)		165	146	184	185	174	49	2951		60	3049	
v/s Ratio Prot		c0.03		c0.01	0.01		0.00	c0.43		c0.02	0.10	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.38	0.01	0.12	0.12	0.00	0.16	0.72		0.58	0.16	
Uniform Delay, d1		29.2	28.2	27.5	27.5	27.1	32.5	9.8		32.6	6.0	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0	0.1	0.1	0.0	0.6	0.9		9.0	0.0	
Delay (s)		29.7	28.2	27.6	27.6	27.1	33.0	10.7		41.6	6.1	
Level of Service		C	C	C	C	C	C	B		D	A	
Approach Delay (s)		29.4			27.6			10.8			8.4	
Approach LOS		C			C			B			A	

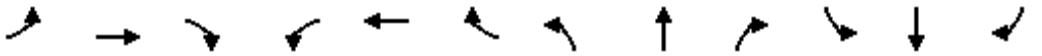
Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	11.6
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	8	232	73	19	52	172	1663	17	10	986	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1779	1550		1792	1583	1770	5076		1770	5071	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1779	1550		1792	1583	1770	5076		1770	5071	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	144	8	244	77	20	55	181	1751	18	11	1038	16
RTOR Reduction (vph)	0	0	195	0	0	50	0	1	0	0	2	0
Lane Group Flow (vph)	0	152	49	0	97	5	181	1768	0	11	1052	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		10.2	10.2		3.0	3.0	8.5	29.1		0.5	21.1	
Effective Green, g (s)		12.5	12.5		5.3	5.3	9.5	32.1		1.5	24.1	
Actuated g/C Ratio		0.20	0.20		0.09	0.09	0.15	0.52		0.02	0.39	
Clearance Time (s)		5.3	5.3		4.0	4.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		358	312		153	135	271	2624		43	1968	
v/s Ratio Prot		c0.09			c0.05		c0.10	c0.35		0.01	0.21	
v/s Ratio Perm			0.03			0.00						
v/c Ratio		0.42	0.16		0.63	0.03	0.67	0.67		0.26	0.53	
Uniform Delay, d1		21.7	20.5		27.5	26.1	24.8	11.1		29.8	14.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.1		6.2	0.0	4.8	0.9		1.1	0.5	
Delay (s)		22.0	20.5		33.6	26.1	29.6	12.0		30.9	15.2	
Level of Service		C	C		C	C	C	B		C	B	
Approach Delay (s)		21.1			30.9			13.7			15.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	7.7
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

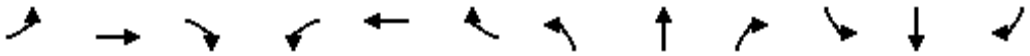
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	387	793	115	179	210	134	90	1420	250	168	910	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1535	1770	5085	1534	3433	5085	1560	3433	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1535	1770	5085	1534	3433	5085	1560	3433	5085	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	407	835	121	188	221	141	95	1495	263	177	958	149
RTOR Reduction (vph)	0	0	63	0	0	98	0	0	0	0	0	0
Lane Group Flow (vph)	407	835	58	188	221	43	95	1495	263	177	958	149
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	18.2	31.8	31.8	16.0	29.6	29.6	7.0	44.6	120.0	8.2	45.5	120.0
Effective Green, g (s)	19.2	34.8	34.8	17.0	32.6	32.6	8.0	47.6	120.0	9.2	48.5	120.0
Actuated g/C Ratio	0.16	0.29	0.29	0.14	0.27	0.27	0.07	0.40	1.00	0.08	0.40	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	549	1026	445	251	1381	417	229	2017	1560	263	2055	1560
v/s Ratio Prot	c0.12	c0.24		0.11	0.04		0.03	c0.29		c0.05	0.19	
v/s Ratio Perm			0.04			0.03			c0.17			0.10
v/c Ratio	0.74	0.81	0.13	0.75	0.16	0.10	0.41	0.74	0.17	0.67	0.47	0.10
Uniform Delay, d1	48.0	39.6	31.4	49.5	33.3	32.8	53.8	30.9	0.0	53.9	26.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	5.2	0.2	10.2	0.1	0.1	0.4	1.7	0.2	5.2	0.8	0.1
Delay (s)	52.7	44.8	31.6	59.7	33.3	32.9	54.2	32.6	0.2	59.2	27.0	0.1
Level of Service	D	D	C	E	C	C	D	C	A	E	C	A
Approach Delay (s)		46.0			42.2			29.1			28.3	
Approach LOS		D			D			C			C	

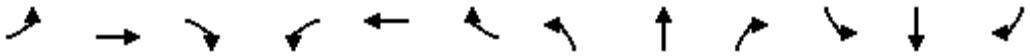
Intersection Summary			
HCM Average Control Delay	34.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	0	39	43	2	21	23	1722	20	10	1231	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0	4.7	3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.91	
Frt		0.94			0.96		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1703			1726		1770	3539	1583	1770	5080	
Flt Permitted		0.80			0.73		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1407			1302		1770	3539	1583	1770	5080	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	0	41	45	2	22	24	1813	21	11	1296	9
RTOR Reduction (vph)	0	27	0	0	15	0	0	0	3	0	0	0
Lane Group Flow (vph)	0	65	0	0	54	0	24	1813	18	11	1305	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		11.1			11.1		6.3	94.6	94.6	0.6	88.9	
Effective Green, g (s)		12.1			12.1		7.3	97.3	95.6	1.6	91.6	
Actuated g/C Ratio		0.10			0.10		0.06	0.81	0.80	0.01	0.76	
Clearance Time (s)		4.0			4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8	3.8	2.0	3.8	
Lane Grp Cap (vph)		142			131		108	2870	1261	24	3878	
v/s Ratio Prot							0.01	c0.51		c0.01	0.26	
v/s Ratio Perm		c0.05			0.04				0.01			
v/c Ratio		0.46			0.41		0.22	0.63	0.01	0.46	0.34	
Uniform Delay, d1		50.9			50.6		53.6	4.4	2.5	58.8	4.5	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.3			2.1		0.4	1.1	0.0	5.0	0.1	
Delay (s)		53.2			52.7		54.0	5.5	2.5	63.7	4.6	
Level of Service		D			D		D	A	A	E	A	
Approach Delay (s)		53.2			52.7			6.1			5.1	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



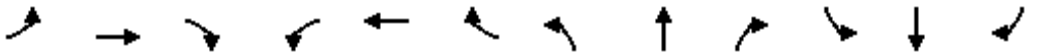
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	107	302	234	109	50	50	124	1718	48	136	2038	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5070	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5070	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	113	318	246	115	53	53	131	1808	51	143	2145	38
RTOR Reduction (vph)	0	0	103	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	113	318	144	115	53	53	131	1808	51	143	2182	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	14.8	18.6	18.6	6.8	10.6	120.0	7.8	66.8	120.0	8.1	67.1	
Effective Green, g (s)	15.8	21.6	21.6	7.8	13.6	120.0	8.8	69.8	120.0	9.1	70.1	
Actuated g/C Ratio	0.13	0.18	0.18	0.06	0.11	1.00	0.07	0.58	1.00	0.08	0.58	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	233	637	278	223	401	1562	252	2958	1562	260	2962	
v/s Ratio Prot	c0.06	0.09		0.03	0.01		0.04	0.36		c0.04	c0.43	
v/s Ratio Perm			c0.09			c0.03			0.03			
v/c Ratio	0.48	0.50	0.52	0.52	0.13	0.03	0.52	0.61	0.03	0.55	0.74	
Uniform Delay, d1	48.3	44.3	44.5	54.3	47.9	0.0	53.6	16.3	0.0	53.5	18.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.8	2.0	0.8	0.2	0.0	0.8	0.4	0.0	1.4	1.7	
Delay (s)	48.9	45.1	46.5	55.1	48.1	0.0	54.3	16.7	0.0	54.9	19.9	
Level of Service	D	D	D	E	D	A	D	B	A	D	B	
Approach Delay (s)		46.3			40.2			18.7			22.0	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	171	306	1666	99	209	2219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	3.0	2.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	180	322	1754	104	220	2336
RTOR Reduction (vph)	0	0	0	32	0	0
Lane Group Flow (vph)	180	322	1754	72	220	2336
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	13.3	67.3	27.9	27.9	10.1	44.0
Effective Green, g (s)	14.3	67.3	29.9	29.9	11.1	46.0
Actuated g/C Ratio	0.21	1.00	0.44	0.44	0.16	0.68
Clearance Time (s)	6.0		6.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	376	1583	2259	703	292	3476
v/s Ratio Prot	c0.10		c0.34		c0.12	0.46
v/s Ratio Perm		0.20		0.05		
v/c Ratio	0.48	0.20	0.78	0.10	0.75	0.67
Uniform Delay, d1	23.2	0.0	15.9	10.9	26.8	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.3	1.8	0.1	9.4	0.5
Delay (s)	24.2	0.3	17.6	11.0	36.2	6.8
Level of Service	C	A	B	B	D	A
Approach Delay (s)	8.9		17.3			9.3
Approach LOS	A		B			A

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

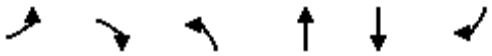


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	12	8	98	2	178	41	1144	377	606	1298	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1510	1504	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1510	1504	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	13	8	103	2	187	43	1204	397	638	1366	7
RTOR Reduction (vph)	0	0	8	0	85	84	0	0	233	0	0	2
Lane Group Flow (vph)	4	13	0	103	11	9	43	1204	164	638	1366	5
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.8	2.8	2.8	8.3	8.3	8.3	5.4	36.8	36.8	26.1	57.5	57.5
Effective Green, g (s)	2.8	2.8	2.8	8.3	8.3	8.3	5.4	36.8	36.8	26.1	57.5	57.5
Actuated g/C Ratio	0.03	0.03	0.03	0.09	0.09	0.09	0.06	0.41	0.41	0.29	0.64	0.64
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	107	58	49	317	139	139	106	1447	647	996	2261	1011
v/s Ratio Prot	0.00	c0.01		c0.03	0.01		0.02	c0.34		c0.19	0.39	
v/s Ratio Perm			0.00			0.01			0.10			0.00
v/c Ratio	0.04	0.22	0.01	0.32	0.08	0.06	0.41	0.83	0.25	0.64	0.60	0.01
Uniform Delay, d1	42.3	42.5	42.3	38.2	37.3	37.3	40.8	23.8	17.5	27.9	9.6	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	2.0	0.0	0.6	0.2	0.2	2.5	5.7	0.9	1.4	1.2	0.0
Delay (s)	42.4	44.5	42.3	38.8	37.6	37.5	43.3	29.6	18.5	29.3	10.8	5.9
Level of Service	D	D	D	D	D	D	D	C	B	C	B	A
Approach Delay (s)		43.5			38.0			27.2			16.6	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

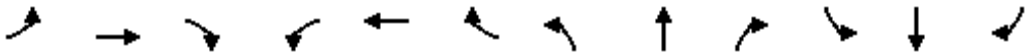
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	111	14	726	170	45	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	117	15	764	179	47	644
RTOR Reduction (vph)	0	12	0	77	0	0
Lane Group Flow (vph)	117	3	764	102	47	644
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.1	9.1	26.0	26.0	2.0	32.0
Effective Green, g (s)	10.6	10.6	29.0	29.0	3.0	35.0
Actuated g/C Ratio	0.21	0.21	0.57	0.57	0.06	0.68
Clearance Time (s)	4.0	4.0	6.0	6.0	4.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	367	328	2008	898	104	2424
v/s Ratio Prot	c0.07		c0.22		c0.03	0.18
v/s Ratio Perm		0.00		0.06		
v/c Ratio	0.32	0.01	0.38	0.11	0.45	0.27
Uniform Delay, d1	17.2	16.1	6.1	5.1	23.3	3.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.2	0.1	1.1	0.1
Delay (s)	17.7	16.1	6.3	5.2	24.4	3.2
Level of Service	B	B	A	A	C	A
Approach Delay (s)	17.5		6.1			4.7
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	8.5
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	110	381	1384	789	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	3.0	3.0	5.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00
Frt		0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)		1583	1770	3539	3539	1583
Flt Permitted		1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)		1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	116	401	1457	831	34
RTOR Reduction (vph)	0	103	0	0	0	23
Lane Group Flow (vph)	0	13	401	1457	831	11
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)		5.8	15.7	38.0	17.3	17.3
Effective Green, g (s)		5.8	15.7	40.0	19.3	17.3
Actuated g/C Ratio		0.11	0.29	0.74	0.36	0.32
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		171	517	2631	1270	509
v/s Ratio Prot			c0.23	0.41	c0.23	
v/s Ratio Perm		c0.01				0.01
v/c Ratio		0.07	0.78	0.55	0.65	0.02
Uniform Delay, d1		21.6	17.4	3.0	14.5	12.5
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	7.2	0.3	1.2	0.0
Delay (s)		21.8	24.6	3.3	15.7	12.5
Level of Service		C	C	A	B	B
Approach Delay (s)	21.8			7.9	15.6	
Approach LOS	C			A	B	

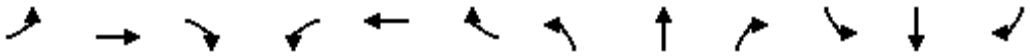
Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	7	10	53	1	182	6	1330	117	88	558	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728			1776	1557	1770	3489		1770	3510	
Flt Permitted		0.94			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1647			1402	1557	1770	3489		1770	3510	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	7	11	56	1	192	6	1400	123	93	587	28
RTOR Reduction (vph)	0	9	0	0	0	144	0	7	0	0	3	0
Lane Group Flow (vph)	0	16	0	0	57	48	6	1516	0	93	612	0
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						
Actuated Green, G (s)		11.0			11.0	11.0	1.2	34.6		3.9	37.3	
Effective Green, g (s)		12.0			12.0	12.0	2.2	37.6		4.9	40.3	
Actuated g/C Ratio		0.19			0.19	0.19	0.03	0.59		0.08	0.64	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		313			266	296	62	2076		137	2238	
v/s Ratio Prot							0.00	c0.43		c0.05	c0.17	
v/s Ratio Perm		0.01			c0.04	0.03						
v/c Ratio		0.05			0.21	0.16	0.10	0.73		0.68	0.27	
Uniform Delay, d1		20.9			21.6	21.4	29.5	9.2		28.4	5.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			0.1	0.1	0.2	1.5		10.0	0.1	
Delay (s)		21.0			21.8	21.5	29.8	10.7		38.4	5.1	
Level of Service		C			C	C	C	B		D	A	
Approach Delay (s)		21.0			21.6			10.8			9.5	
Approach LOS		C			C			B			A	

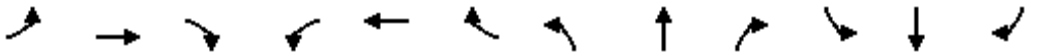
Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	11.4
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1	47	14	1	15	32	1314	68	22	569	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1775	1531		1779	1465	1770	3539	1544	1770	3518	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1775	1531		1779	1465	1770	3539	1544	1770	3518	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	1	49	15	1	16	34	1383	72	23	599	21
RTOR Reduction (vph)	0	0	44	0	0	15	0	0	14	0	2	0
Lane Group Flow (vph)	0	85	5	0	16	1	34	1383	58	23	618	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		8.4	8.4		2.4	2.4	3.8	59.4	59.4	2.1	57.7	
Effective Green, g (s)		9.4	9.4		3.4	3.4	4.8	62.4	60.4	3.1	60.7	
Actuated g/C Ratio		0.10	0.10		0.04	0.04	0.05	0.69	0.67	0.03	0.67	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		185	160		67	55	94	2454	1036	61	2373	
v/s Ratio Prot		c0.05			c0.01		0.02	c0.39		c0.01	0.18	
v/s Ratio Perm			0.00			0.00			0.04			
v/c Ratio		0.46	0.03		0.24	0.01	0.36	0.56	0.06	0.38	0.26	
Uniform Delay, d1		37.9	36.2		42.0	41.7	41.1	6.9	5.1	42.5	5.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.7	0.0		0.7	0.0	0.9	0.5	0.1	1.4	0.3	
Delay (s)		38.6	36.2		42.7	41.7	42.0	7.5	5.1	43.9	6.1	
Level of Service		D	D		D	D	D	A	A	D	A	
Approach Delay (s)		37.7			42.2			8.1			7.4	
Approach LOS		D			D			A			A	

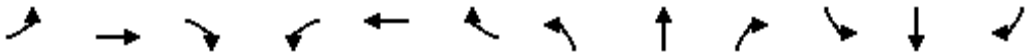
Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	645	0	747	11	3	1	297	760	0	1	481	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	679	0	786	12	3	1	313	800	0	1	506	148
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	84
Lane Group Flow (vph)	339	340	786	12	3	0	313	800	0	1	506	64
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	21.6	21.6	90.0	4.2	4.2		11.4	45.1		1.4	37.1	37.1
Effective Green, g (s)	23.6	23.6	90.0	6.2	6.2		13.4	47.1		3.4	39.1	39.1
Actuated g/C Ratio	0.26	0.26	1.00	0.07	0.07		0.15	0.52		0.04	0.43	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.9		2.0	4.3	4.3
Lane Grp Cap (vph)	441	441	1478	122	124		511	1852		67	1537	642
v/s Ratio Prot	0.20	c0.20		0.01	0.00		c0.09	0.23		0.00	0.14	
v/s Ratio Perm			c0.53									0.04
v/c Ratio	0.77	0.77	0.53	0.10	0.02		0.61	0.43		0.01	0.33	0.10
Uniform Delay, d1	30.7	30.7	0.0	39.3	39.1		35.9	13.2		41.7	16.8	15.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.1	7.4	1.4	0.1	0.0		1.5	0.7		0.0	0.2	0.1
Delay (s)	37.8	38.1	1.4	39.4	39.1		37.4	13.9		41.7	17.0	15.2
Level of Service	D	D	A	D	D		D	B		D	B	B
Approach Delay (s)		18.3			39.3			20.5			16.6	
Approach LOS		B			D			C			B	

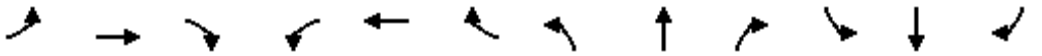
Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	2.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



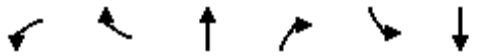
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	1	14	0	1	25	30	701	0	22	714	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1601			1863	1583	1770	3539		1770	3498	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1601			1863	1583	1770	3539		1770	3498	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	1	15	0	1	26	32	738	0	23	752	63
RTOR Reduction (vph)	0	13	0	0	0	25	0	0	0	0	4	0
Lane Group Flow (vph)	95	3	0	0	1	1	32	738	0	23	811	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	8.3	8.3			3.8	3.8	2.5	33.4		1.1	32.0	
Effective Green, g (s)	8.3	8.3			3.8	3.8	2.5	33.4		1.1	32.0	
Actuated g/C Ratio	0.12	0.12			0.06	0.06	0.04	0.50		0.02	0.48	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	221	200			106	90	66	1775		29	1681	
v/s Ratio Prot	c0.05	0.00			0.00		c0.02	0.21		0.01	c0.23	
v/s Ratio Perm						c0.00						
v/c Ratio	0.43	0.01			0.01	0.02	0.48	0.42		0.79	0.48	
Uniform Delay, d1	27.0	25.6			29.6	29.6	31.4	10.5		32.6	11.7	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.0			0.0	0.1	5.5	0.2		83.5	0.2	
Delay (s)	28.3	25.6			29.7	29.7	36.9	10.6		116.2	11.9	
Level of Service	C	C			C	C	D	B		F	B	
Approach Delay (s)		27.9			29.7			11.7			14.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



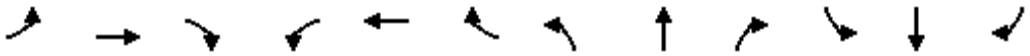
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	0	37	41	1	48	65	447	5	25	385	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583	1770	1589		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1583	1770	1589		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	0	39	43	1	51	68	471	5	26	405	98
RTOR Reduction (vph)	0	0	34	0	45	0	0	0	3	0	0	60
Lane Group Flow (vph)	36	36	5	43	7	0	68	471	2	26	405	38
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	8.2	8.2	8.2	6.8	6.8		4.1	25.7	25.7	1.0	22.6	22.6
Effective Green, g (s)	8.2	8.2	8.2	6.8	6.8		4.1	25.7	25.7	1.0	22.6	22.6
Actuated g/C Ratio	0.14	0.14	0.14	0.12	0.12		0.07	0.44	0.44	0.02	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	234	234	220	204	183		123	1542	690	30	1356	606
v/s Ratio Prot	c0.02	0.02		c0.02	0.00		c0.04	c0.13		0.01	0.11	
v/s Ratio Perm			0.00						0.00			0.02
v/c Ratio	0.15	0.15	0.02	0.21	0.04		0.55	0.31	0.00	0.87	0.30	0.06
Uniform Delay, d1	22.3	22.3	21.9	23.7	23.2		26.6	10.8	9.4	28.9	12.7	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0	0.2	0.0		3.0	0.1	0.0	105.7	0.2	0.1
Delay (s)	22.5	22.5	22.0	23.9	23.2		29.6	11.0	9.4	134.6	12.8	11.6
Level of Service	C	C	C	C	C		C	B	A	F	B	B
Approach Delay (s)		22.3			23.5			13.3			18.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	17.3
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



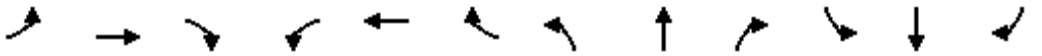
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	27	14	6	37	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	28	15	6	39	15
RTOR Reduction (vph)	0	25	0	5	0	0
Lane Group Flow (vph)	5	3	15	1	39	15
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	1.7	1.7	1.7	1.7	0.6	7.3
Effective Green, g (s)	1.7	1.7	1.7	1.7	0.6	7.3
Actuated g/C Ratio	0.09	0.09	0.09	0.09	0.03	0.38
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	158	142	167	142	56	716
v/s Ratio Prot	c0.00		c0.01		c0.02	0.01
v/s Ratio Perm		0.00		0.00		
v/c Ratio	0.03	0.02	0.09	0.00	0.70	0.02
Uniform Delay, d1	7.9	7.9	7.9	7.9	9.1	3.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.2	0.0	31.4	0.0
Delay (s)	8.0	7.9	8.2	7.9	40.5	3.6
Level of Service	A	A	A	A	D	A
Approach Delay (s)	7.9		8.1			30.3
Approach LOS	A		A			C

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	19.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	366	37	45	459	11	38	8	37	6	46	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1713	1583		1809	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1713	1583		1809	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	385	39	47	483	12	40	8	39	6	48	12
RTOR Reduction (vph)	0	0	20	0	0	6	0	0	35	0	10	0
Lane Group Flow (vph)	3	385	19	47	483	6	24	24	4	0	56	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	0.6	22.7	22.7	2.1	24.2	24.2	3.8	3.8	3.8		3.7	
Effective Green, g (s)	2.6	24.7	24.7	3.1	26.2	26.2	4.8	4.8	4.8		5.7	
Actuated g/C Ratio	0.05	0.49	0.49	0.06	0.52	0.52	0.10	0.10	0.10		0.11	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	92	1748	782	110	1854	829	161	164	152		206	
v/s Ratio Prot	0.00	0.11		c0.03	c0.14		c0.01	0.01			c0.03	
v/s Ratio Perm			0.01			0.00			0.00			
v/c Ratio	0.03	0.22	0.02	0.43	0.26	0.01	0.15	0.15	0.02		0.27	
Uniform Delay, d1	22.5	7.2	6.5	22.6	6.6	5.7	20.7	20.7	20.5		20.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.1	0.1	0.0	1.0	0.1	0.0	0.2	0.2	0.0		0.3	
Delay (s)	22.6	7.3	6.5	23.6	6.7	5.7	20.9	20.9	20.5		20.5	
Level of Service	C	A	A	C	A	A	C	C	C		C	
Approach Delay (s)		7.3			8.1			20.7			20.5	
Approach LOS		A			A			C			C	

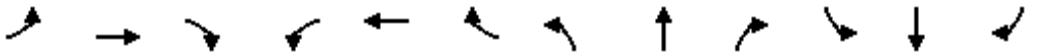
Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	345	119	69	372	7	70	9	31	15	37	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1703	1478	1770	1863	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1703	1478	1770	1863	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	363	125	73	392	7	74	9	33	16	39	81
RTOR Reduction (vph)	0	0	65	0	0	3	0	0	31	0	0	71
Lane Group Flow (vph)	24	363	60	73	392	4	41	42	2	16	39	10
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	0.4	18.3	18.3	1.5	19.4	19.4	2.0	2.0	2.0	3.7	3.7	3.7
Effective Green, g (s)	1.4	21.0	21.0	2.5	22.1	22.1	3.0	3.0	3.0	4.7	5.6	5.6
Actuated g/C Ratio	0.03	0.48	0.48	0.06	0.50	0.50	0.07	0.07	0.07	0.11	0.13	0.13
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	57	1697	709	101	1786	746	115	117	101	190	238	189
v/s Ratio Prot	0.01	0.10		c0.04	c0.11		0.02	c0.02		0.01	c0.02	
v/s Ratio Perm			0.04			0.00			0.00			0.01
v/c Ratio	0.42	0.21	0.08	0.72	0.22	0.00	0.36	0.36	0.02	0.08	0.16	0.05
Uniform Delay, d1	20.8	6.6	6.2	20.3	6.0	5.4	19.5	19.5	19.0	17.6	17.0	16.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.1	0.1	19.3	0.1	0.0	0.7	0.7	0.0	0.3	0.4	0.2
Delay (s)	22.6	6.7	6.3	39.6	6.1	5.4	20.2	20.2	19.1	17.9	17.5	16.9
Level of Service	C	A	A	D	A	A	C	C	B	B	B	B
Approach Delay (s)		7.3			11.3			19.9			17.2	
Approach LOS		A			B			B			B	

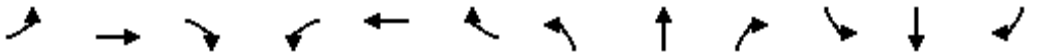
Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	43.8	Sum of lost time (s)	8.7
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



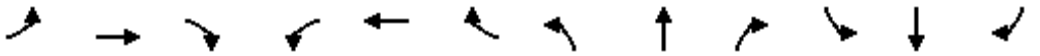
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	292	56	31	365	3	52	15	4	0	7	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1793	1583		1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1793	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	62	307	59	33	384	3	55	16	4	0	7	28
RTOR Reduction (vph)	0	0	28	0	0	1	0	0	4	0	0	27
Lane Group Flow (vph)	62	307	31	33	384	2	0	71	0	0	7	1
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	1.3	20.9	20.9	0.4	20.0	20.0		3.7	3.7		1.1	1.1
Effective Green, g (s)	2.3	22.9	22.9	1.4	22.0	22.0		4.7	4.7		2.1	2.1
Actuated g/C Ratio	0.05	0.53	0.53	0.03	0.51	0.51		0.11	0.11		0.05	0.05
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3		3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	94	1880	841	57	1806	808		196	173		91	77
v/s Ratio Prot	c0.04	0.09		0.02	c0.11			c0.04			c0.00	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.66	0.16	0.04	0.58	0.21	0.00		0.36	0.00		0.08	0.02
Uniform Delay, d1	20.0	5.2	4.8	20.6	5.8	5.2		17.8	17.1		19.6	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	12.0	0.1	0.0	8.6	0.1	0.0		1.3	0.0		0.1	0.0
Delay (s)	32.1	5.2	4.9	29.1	5.9	5.2		19.2	17.1		19.7	19.6
Level of Service	C	A	A	C	A	A		B	B		B	B
Approach Delay (s)		9.1			7.7			19.1			19.6	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	43.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	166	134	7	301	111	83	12	4	28	63	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1706	1583		1835	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1706	1583		1835	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	28	175	141	7	317	117	87	13	4	29	66	8
RTOR Reduction (vph)	0	0	59	0	0	69	0	0	3	0	0	7
Lane Group Flow (vph)	28	175	82	7	317	48	50	50	1	0	95	1
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	0.5	17.0	24.7	0.3	16.8	16.8	7.7	7.7	7.7		3.9	3.9
Effective Green, g (s)	1.5	19.0	26.7	1.3	18.8	18.8	8.7	8.7	8.7		4.9	4.9
Actuated g/C Ratio	0.03	0.41	0.58	0.03	0.41	0.41	0.19	0.19	0.19		0.11	0.11
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	58	1465	921	50	1450	648	319	323	300		196	169
v/s Ratio Prot	c0.02	0.05	0.02	0.00	c0.09		c0.03	0.03			c0.05	
v/s Ratio Perm			0.03			0.03			0.00			0.00
v/c Ratio	0.48	0.12	0.09	0.14	0.22	0.07	0.16	0.15	0.00		0.48	0.01
Uniform Delay, d1	21.8	8.3	4.2	21.8	8.8	8.3	15.5	15.5	15.1		19.3	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.3	0.1	0.0	0.5	0.1	0.1	0.3	0.3	0.0		0.7	0.0
Delay (s)	24.1	8.4	4.3	22.2	8.9	8.3	15.8	15.8	15.1		20.0	18.3
Level of Service	C	A	A	C	A	A	B	B	B		B	B
Approach Delay (s)		8.0			9.0			15.8			19.9	
Approach LOS		A			A			B			B	

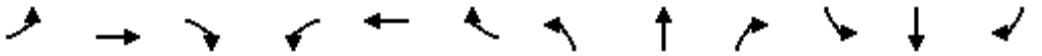
Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	36	84	43	12	5	23	724	71	38	1142	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.90		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1643		3433	1778		1676	4984	1414	1745	5187	1472
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1643		3433	1778		1676	4984	1414	1745	5187	1472
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	115	38	88	45	13	5	24	762	75	40	1202	103
RTOR Reduction (vph)	0	75	0	0	5	0	0	0	37	0	0	49
Lane Group Flow (vph)	115	51	0	45	13	0	24	762	38	40	1202	54
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	11.1	9.2		5.6	5.0		1.7	30.8	30.8	2.6	31.7	31.7
Effective Green, g (s)	12.1	10.2		6.6	6.0		2.7	34.2	34.2	3.6	35.1	35.1
Actuated g/C Ratio	0.18	0.15		0.10	0.09		0.04	0.51	0.51	0.05	0.52	0.52
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	316	248		336	158		67	2525	716	93	2697	765
v/s Ratio Prot	c0.07	0.03		c0.01	0.01		0.01	0.15		c0.02	c0.23	
v/s Ratio Perm									0.03			0.04
v/c Ratio	0.36	0.21		0.13	0.09		0.36	0.30	0.05	0.43	0.45	0.07
Uniform Delay, d1	24.3	25.1		27.8	28.2		31.6	9.7	8.4	31.0	10.1	8.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3		0.1	0.1		1.2	0.1	0.1	1.2	0.2	0.1
Delay (s)	24.6	25.5		27.9	28.3		32.8	9.8	8.5	32.1	10.4	8.1
Level of Service	C	C		C	C		C	A	A	C	B	A
Approach Delay (s)		25.0			28.0			10.4			10.8	
Approach LOS		C			C			B			B	

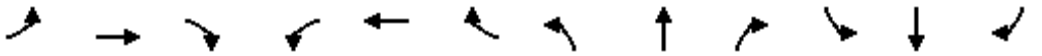
Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	67.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



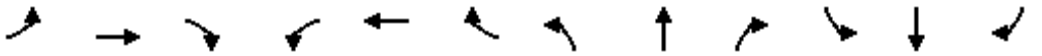
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	104	97	169	254	11	113	783	85	27	1201	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	1851		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	1851		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	109	102	178	267	12	119	824	89	28	1264	63
RTOR Reduction (vph)	0	0	87	0	1	0	0	0	33	0	0	26
Lane Group Flow (vph)	31	109	15	178	278	0	119	824	56	28	1264	37
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	5.0	21.6	21.6	12.0	28.6		9.6	94.0	94.0	3.8	87.1	87.1
Effective Green, g (s)	5.0	21.6	21.6	12.0	28.6		9.6	94.0	94.0	3.8	87.1	87.1
Actuated g/C Ratio	0.03	0.14	0.14	0.08	0.19		0.06	0.63	0.63	0.03	0.58	0.58
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	5.6	5.6	2.0	4.3	4.3
Lane Grp Cap (vph)	59	510	228	275	353		220	3187	992	87	2953	919
v/s Ratio Prot	0.02	0.03		c0.05	c0.15		c0.03	0.16		0.01	c0.25	
v/s Ratio Perm			0.01						0.04			0.02
v/c Ratio	0.53	0.21	0.06	0.65	0.79		0.54	0.26	0.06	0.32	0.43	0.04
Uniform Delay, d1	71.3	56.7	55.5	66.9	57.8		68.1	12.5	10.8	71.8	17.6	13.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.26	0.52	0.11	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.3	0.2	3.9	11.6		1.4	0.2	0.1	0.8	0.2	0.0
Delay (s)	75.2	57.0	55.6	70.8	69.4		87.5	6.7	1.3	72.6	17.7	13.5
Level of Service	E	E	E	E	E		F	A	A	E	B	B
Approach Delay (s)		58.7			69.9			15.6			18.6	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



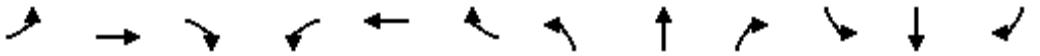
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	31	130	178	48	58	108	948	272	109	1378	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.3	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1762	1583	1610	3165		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1762	1583	1610	3165		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	33	137	187	51	61	114	998	286	115	1451	56
RTOR Reduction (vph)	0	0	129	0	33	0	0	0	73	0	0	19
Lane Group Flow (vph)	22	36	8	101	165	0	114	998	213	115	1451	37
Turn Type	Split		Perm	Split			Prot		pm+ov	Prot		Perm
Protected Phases	8	8		7	7		5	2	7	1	6	
Permitted Phases			8						2			6
Actuated Green, G (s)	8.8	8.8	8.8	16.2	16.2		10.3	95.6	111.8	9.8	95.1	95.1
Effective Green, g (s)	8.8	8.8	8.8	16.2	16.2		10.3	95.6	111.8	9.8	95.1	95.1
Actuated g/C Ratio	0.06	0.06	0.06	0.11	0.11		0.07	0.64	0.75	0.07	0.63	0.63
Clearance Time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.3	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	4.3	4.3
Lane Grp Cap (vph)	99	103	93	174	342		236	3241	1236	224	3224	1004
v/s Ratio Prot	0.01	c0.02		c0.06	0.05		c0.03	0.20	0.02	0.03	c0.29	
v/s Ratio Perm			0.01						0.12			0.02
v/c Ratio	0.22	0.35	0.09	0.58	0.48		0.48	0.31	0.17	0.51	0.45	0.04
Uniform Delay, d1	67.3	67.8	66.8	63.7	63.0		67.3	12.3	5.6	67.8	14.1	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.16	0.60	0.00	0.84	0.43	0.16
Incremental Delay, d2	1.1	2.1	0.4	4.9	1.1		1.5	0.2	0.1	1.9	0.1	0.0
Delay (s)	68.5	69.9	67.2	68.5	64.0		79.4	7.6	0.1	58.5	6.1	1.6
Level of Service	E	E	E	E	E		E	A	A	E	A	A
Approach Delay (s)		67.8			65.5			11.9			9.7	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



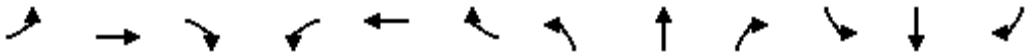
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	306	0	0	540	366	788	0	0	1555	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0			4.0	3.0	4.0			4.0	4.0
Lane Util. Factor			1.00			1.00	0.97	0.91			0.91	1.00
Frt			0.86			0.86	1.00	1.00			1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1611			1611	3433	5085			5085	1583
Flt Permitted			1.00			1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1611			1611	3433	5085			5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	322	0	0	568	385	829	0	0	1637	184
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	0	322	0	0	568	385	829	0	0	1637	137
Turn Type			Free			Free	Prot					Perm
Protected Phases							5	2			6	
Permitted Phases			Free			Free						6
Actuated Green, G (s)			75.0			75.0	13.5	75.0			52.5	52.5
Effective Green, g (s)			75.0			75.0	14.5	75.0			53.5	53.5
Actuated g/C Ratio			1.00			1.00	0.19	1.00			0.71	0.71
Clearance Time (s)							4.0	5.0			5.0	5.0
Vehicle Extension (s)							3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			1611			1611	664	5085			3627	1129
v/s Ratio Prot							c0.11	0.16			c0.32	
v/s Ratio Perm			0.20			0.35						0.09
v/c Ratio			0.20			0.35	0.58	0.16			0.45	0.12
Uniform Delay, d1			0.0			0.0	27.5	0.0			4.5	3.4
Progression Factor			1.00			1.00	1.06	1.00			0.59	0.28
Incremental Delay, d2			0.3			0.6	1.2	0.1			0.4	0.2
Delay (s)			0.3			0.6	30.3	0.1			3.1	1.2
Level of Service			A			A	C	A			A	A
Approach Delay (s)		0.3			0.6			9.7			2.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	4.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



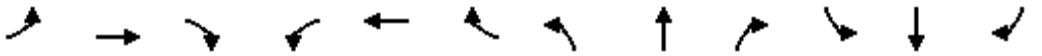
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	1172	0	0	210	0	962	184	531	1346	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.3			3.0		4.7	4.7	4.7	4.7	
Lane Util. Factor			1.00			1.00		0.91	1.00	0.97	0.91	
Frt			0.86			0.86		1.00	0.85	1.00	1.00	
Flt Protected			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1611			1611		5085	1583	3433	5085	
Flt Permitted			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1611			1611		5085	1583	3433	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	1234	0	0	221	0	1013	194	559	1417	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	11	0	0	0
Lane Group Flow (vph)	0	0	1234	0	0	221	0	1013	183	559	1417	0
Turn Type			custom			Free			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases			5			Free			2			
Actuated Green, G (s)			101.7			150.0		106.1	106.1	32.5	37.3	
Effective Green, g (s)			101.7			150.0		107.1	107.1	33.5	38.3	
Actuated g/C Ratio			0.68			1.00		0.71	0.71	0.22	0.26	
Clearance Time (s)			5.3					5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)			1092			1611		3631	1130	767	1298	
v/s Ratio Prot								0.20		0.16	c0.28	
v/s Ratio Perm			c0.77			0.14			0.12			
v/c Ratio			1.13			0.14		0.28	0.16	0.73	1.09	
Uniform Delay, d1			24.1			0.0		7.7	6.9	54.0	55.9	
Progression Factor			1.00			1.00		0.43	0.31	0.71	0.87	
Incremental Delay, d2			70.4			0.2		0.2	0.3	3.2	53.3	
Delay (s)			94.6			0.2		3.5	2.5	41.6	101.6	
Level of Service			F			A		A	A	D	F	
Approach Delay (s)		94.6			0.2			3.3			84.7	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM Average Control Delay	62.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	106.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



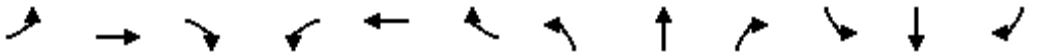
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	1	9	8	9	17	43	0	4	13	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.95			0.95		1.00	1.00		1.00	0.92	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750			1745		1770	3539		1770	1710	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1779			1776		1770	3539		1770	1710	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	1	1	9	8	9	18	45	0	4	14	17
RTOR Reduction (vph)	0	1	0	0	9	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	2	0	0	17	0	18	45	0	4	23	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		0.7			0.7		0.7	19.2		0.7	19.2	
Effective Green, g (s)		0.7			0.7		0.7	19.2		0.7	19.2	
Actuated g/C Ratio		0.02			0.02		0.02	0.51		0.02	0.51	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		33			33		33	1822		33	880	
v/s Ratio Prot							c0.01	0.01		0.00	c0.01	
v/s Ratio Perm		c0.00			c0.01							
v/c Ratio		0.06			0.52		0.55	0.02		0.12	0.03	
Uniform Delay, d1		18.0			18.1		18.1	4.4		18.0	4.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			6.7		9.5	0.0		0.6	0.0	
Delay (s)		18.3			24.8		27.6	4.5		18.6	4.5	
Level of Service		B			C		C	A		B	A	
Approach Delay (s)		18.3			24.8			11.1			6.1	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	37.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



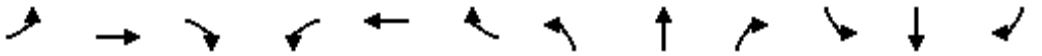
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	9	8	64	10	63	20	993	92	289	1953	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.4	3.4	3.0	2.5	3.2	3.0	2.5	3.2	3.2
Lane Util. Factor	0.86	0.86	1.00	0.86	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3044	3089	1583	3044	3101	1583	3335	4940	1538	3335	4940	1489
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3044	3089	1583	3044	3101	1583	3335	4940	1538	3335	4940	1489
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	9	8	67	11	66	21	1045	97	304	2056	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	53	35	8	45	33	66	21	1045	97	304	2056	44
Confl. Peds. (#/hr)												10
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	7.3	7.3	150.0	6.0	6.0	150.0	3.6	100.1	150.0	18.0	114.5	114.5
Effective Green, g (s)	8.8	8.8	150.0	7.5	7.5	150.0	5.1	102.6	150.0	19.5	117.0	117.0
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.05	1.00	0.03	0.68	1.00	0.13	0.78	0.78
Clearance Time (s)	4.0	4.0		4.9	4.9		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.9	3.9		2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	179	181	1583	152	155	1583	113	3379	1538	434	3853	1161
v/s Ratio Prot	c0.02	0.01		c0.01	0.01		0.01	0.21		c0.09	c0.42	
v/s Ratio Perm			0.01			0.04			0.06			0.03
v/c Ratio	0.30	0.19	0.01	0.30	0.21	0.04	0.19	0.31	0.06	0.70	0.53	0.04
Uniform Delay, d1	67.6	67.2	0.0	68.7	68.4	0.0	70.4	9.5	0.0	62.5	6.2	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.29	0.71	1.00	1.16	0.55	0.23
Incremental Delay, d2	0.9	0.5	0.0	1.4	0.9	0.0	0.2	0.1	0.1	0.4	0.0	0.0
Delay (s)	68.6	67.7	0.0	70.2	69.3	0.0	90.8	6.9	0.1	73.1	3.5	0.9
Level of Service	E	E	A	E	E	A	F	A	A	E	A	A
Approach Delay (s)		62.6			37.8			7.8			12.2	
Approach LOS		E			D			A			B	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	173	1	117	5	2	4	42	1456	1	5	1517	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1775	1583		1799	1583	1770	3539		1770	3539	1583
Flt Permitted		0.95	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1775	1583		1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	182	1	123	5	2	4	44	1533	1	5	1597	167
RTOR Reduction (vph)	0	0	100	0	0	4	0	0	0	0	0	47
Lane Group Flow (vph)	0	183	23	0	7	0	44	1534	0	5	1597	120
Turn Type	Split		Perm	Perm		Perm	Prot			Prot		Perm
Protected Phases	4	4			3		5	2		1	6	
Permitted Phases			4	3		3						6
Actuated Green, G (s)		12.5	12.5		1.4	1.4	2.9	39.4		0.8	37.3	37.3
Effective Green, g (s)		13.5	13.5		2.4	2.4	5.9	41.4		1.8	40.3	40.3
Actuated g/C Ratio		0.18	0.18		0.03	0.03	0.08	0.57		0.02	0.55	0.55
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		328	293		61	52	143	2007		44	1954	874
v/s Ratio Prot		c0.10					c0.02	0.43		0.00	c0.45	
v/s Ratio Perm			0.01		c0.00	0.00						0.08
v/c Ratio		0.56	0.08		0.11	0.00	0.31	0.76		0.11	0.82	0.14
Uniform Delay, d1		27.0	24.6		34.3	34.1	31.6	12.1		34.8	13.3	7.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		1.2	0.0		0.3	0.0	0.4	1.9		0.4	3.0	0.1
Delay (s)		28.2	24.6		34.6	34.1	32.1	14.0		35.2	16.3	8.0
Level of Service		C	C		C	C	C	B		D	B	A
Approach Delay (s)		26.8			34.4			14.5			15.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	10.9
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

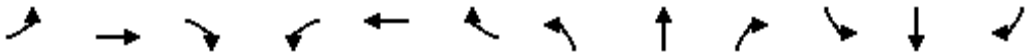


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	304	14	354	3	6	18	81	1193	8	7	1361	302
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	0.86		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1594		1770	1863	1583	3433	3536		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1594		1770	1863	1583	3433	3536		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	320	15	373	3	6	19	85	1256	8	7	1433	318
RTOR Reduction (vph)	0	120	0	0	0	19	0	0	0	0	0	91
Lane Group Flow (vph)	320	268	0	3	6	0	85	1264	0	7	1433	227
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						6
Actuated Green, G (s)	17.6	17.6		1.0	1.0	1.0	2.3	40.7		0.5	38.9	38.9
Effective Green, g (s)	18.6	18.6		2.0	2.0	2.0	3.3	43.2		1.5	41.4	41.4
Actuated g/C Ratio	0.24	0.24		0.03	0.03	0.03	0.04	0.56		0.02	0.54	0.54
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0		2.0	2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	826	384		46	48	41	147	1976		34	1895	848
v/s Ratio Prot	0.09	c0.17		0.00	c0.00		c0.02	0.36		0.00	c0.40	
v/s Ratio Perm						0.00						0.14
v/c Ratio	0.39	0.70		0.07	0.12	0.01	0.58	0.64		0.21	0.76	0.27
Uniform Delay, d1	24.6	26.8		36.7	36.8	36.7	36.3	11.7		37.3	14.0	9.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	5.5		0.2	0.4	0.0	3.4	1.0		1.1	2.1	0.4
Delay (s)	24.9	32.2		37.0	37.2	36.7	39.7	12.7		38.4	16.1	10.1
Level of Service	C	C		D	D	D	D	B		D	B	B
Approach Delay (s)		28.9			36.9			14.4			15.1	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

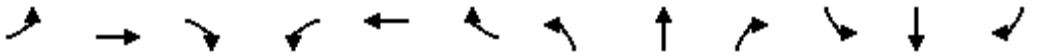
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	143	452	874	438	884	841
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	4.3
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	151	476	920	461	931	885
RTOR Reduction (vph)	0	22	0	258	0	0
Lane Group Flow (vph)	151	454	920	203	931	885
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	8.0	23.8	25.1	25.1	15.8	44.9
Effective Green, g (s)	9.0	28.4	27.4	27.4	18.1	45.9
Actuated g/C Ratio	0.14	0.46	0.44	0.44	0.29	0.74
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	5.3
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	497	766	1559	697	999	2612
v/s Ratio Prot	0.04	c0.17	c0.26		c0.27	0.25
v/s Ratio Perm		0.11		0.13		
v/c Ratio	0.30	0.59	0.59	0.29	0.93	0.34
Uniform Delay, d1	23.8	12.6	13.2	11.2	21.5	2.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.8	0.7	0.3	14.6	0.1
Delay (s)	23.9	13.4	13.8	11.5	36.1	2.9
Level of Service	C	B	B	B	D	A
Approach Delay (s)	15.9		13.1			19.9
Approach LOS	B		B			B

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	4.7
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	11	18	36	20	45	13	1065	0	44	798	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.94		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1672			1720		1770	3539		1770	3484	
Flt Permitted	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1672			1720		1770	3539		1770	3484	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	326	12	19	38	21	47	14	1121	0	46	840	97
RTOR Reduction (vph)	0	7	0	0	45	0	0	0	0	0	11	0
Lane Group Flow (vph)	179	171	0	0	61	0	14	1121	0	46	926	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	10.6	10.6			3.1		0.5	26.1		1.6	26.8	
Effective Green, g (s)	10.6	10.6			3.1		0.5	26.1		1.6	26.8	
Actuated g/C Ratio	0.18	0.18			0.05		0.01	0.45		0.03	0.46	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Vehicle Extension (s)	2.0	2.0			2.0		2.0	4.2		2.0	3.2	
Lane Grp Cap (vph)	306	304			91		15	1584		49	1602	
v/s Ratio Prot	c0.11	0.10			c0.04		0.01	c0.32		c0.03	0.27	
v/s Ratio Perm												
v/c Ratio	0.58	0.56			0.68		0.93	0.71		0.94	0.58	
Uniform Delay, d1	21.8	21.7			27.1		28.9	13.0		28.3	11.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	1.4			14.5		195.4	1.6		103.5	0.5	
Delay (s)	23.7	23.1			41.6		224.3	14.6		131.8	12.1	
Level of Service	C	C			D		F	B		F	B	
Approach Delay (s)		23.4			41.6			17.2			17.7	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	16.9
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

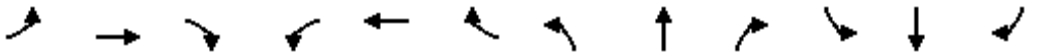


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	10	27	25	1	7	41	1076	23	8	823	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1777	1583	1770	3528		1770	3523	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1777	1583	1770	3528		1770	3523	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	11	28	26	1	7	43	1133	24	8	866	28
RTOR Reduction (vph)	0	0	25	0	0	7	0	1	0	0	2	0
Lane Group Flow (vph)	0	91	3	0	27	0	43	1156	0	8	892	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		7.3	7.3		2.3	2.3	4.7	34.1		0.6	30.0	
Effective Green, g (s)		7.3	7.3		2.3	2.3	4.7	34.1		0.6	30.0	
Actuated g/C Ratio		0.12	0.12		0.04	0.04	0.08	0.56		0.01	0.49	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)		213	189		67	59	136	1966		17	1727	
v/s Ratio Prot		c0.05			c0.02		0.02	c0.33		0.00	c0.25	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.43	0.02		0.40	0.00	0.32	0.59		0.47	0.52	
Uniform Delay, d1		25.0	23.8		28.8	28.3	26.7	8.9		30.1	10.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		1.4	0.0	0.5	0.6		7.3	0.4	
Delay (s)		25.5	23.8		30.2	28.4	27.2	9.5		37.4	11.0	
Level of Service		C	C		C	C	C	A		D	B	
Approach Delay (s)		25.1			29.8			10.1			11.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	17.8
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

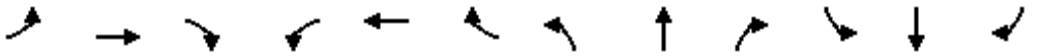
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	53	146	323	9	359	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	154	340	9	378	618
RTOR Reduction (vph)	0	120	0	7	0	0
Lane Group Flow (vph)	56	34	340	2	378	618
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	8.9	8.9	10.2	10.2	16.8	31.0
Effective Green, g (s)	10.9	10.9	12.9	12.9	18.8	33.7
Actuated g/C Ratio	0.22	0.22	0.26	0.26	0.38	0.68
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	754	348	1323	412	671	3455
v/s Ratio Prot	0.02		c0.07		c0.21	0.12
v/s Ratio Perm		c0.02		0.00		
v/c Ratio	0.07	0.10	0.26	0.01	0.56	0.18
Uniform Delay, d1	15.3	15.4	14.6	13.6	12.2	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.2	0.0	0.6	0.0
Delay (s)	15.4	15.5	14.7	13.6	12.8	2.9
Level of Service	B	B	B	B	B	A
Approach Delay (s)	15.4		14.7			6.7
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	7.0
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	450	62	197	370	93	20	3	159	90	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	4993		1770	5085	1583		1785	1583	1681	1690	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	4993		1770	5085	1583		1785	1583	1681	1690	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	474	65	207	389	98	21	3	167	95	3	16
RTOR Reduction (vph)	0	18	0	0	0	54	0	0	146	0	0	14
Lane Group Flow (vph)	36	521	0	207	389	44	0	24	21	49	49	2
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	5.7	20.2		12.9	27.4	27.4		7.4	7.4	8.5	8.5	8.5
Effective Green, g (s)	6.7	22.5		13.9	29.7	29.7		8.4	8.4	9.5	9.5	9.5
Actuated g/C Ratio	0.10	0.34		0.21	0.45	0.45		0.13	0.13	0.14	0.14	0.14
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	179	1694		371	2278	709		226	201	241	242	227
v/s Ratio Prot	0.02	c0.10		c0.12	0.08			c0.01		c0.03	0.03	
v/s Ratio Perm						0.03			0.01			0.00
v/c Ratio	0.20	0.31		0.56	0.17	0.06		0.11	0.11	0.20	0.20	0.01
Uniform Delay, d1	27.3	16.2		23.5	10.9	10.4		25.6	25.6	25.1	25.1	24.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2		1.0	0.1	0.1		0.1	0.1	0.2	0.2	0.0
Delay (s)	27.5	16.4		24.5	11.0	10.5		25.7	25.7	25.2	25.2	24.4
Level of Service	C	B		C	B	B		C	C	C	C	C
Approach Delay (s)		17.1			15.0			25.7			25.1	
Approach LOS		B			B			C			C	

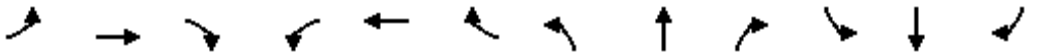
Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	222	724	285	65	193	77	374	435	37	80	334	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	234	762	300	68	203	81	394	458	39	84	352	51
RTOR Reduction (vph)	0	0	189	0	0	58	0	0	29	0	0	39
Lane Group Flow (vph)	234	762	111	68	203	23	394	458	10	84	352	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	10.4	23.5	23.5	4.3	17.0	17.0	9.3	16.5	16.5	6.3	13.5	13.5
Effective Green, g (s)	11.4	25.5	25.5	5.3	19.7	19.7	10.3	18.8	17.5	7.3	15.8	15.8
Actuated g/C Ratio	0.17	0.37	0.37	0.08	0.29	0.29	0.15	0.27	0.25	0.11	0.23	0.23
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	293	1312	587	136	1013	453	514	1390	403	377	1209	376
v/s Ratio Prot	c0.13	c0.22		0.04	0.06		c0.11	c0.09		0.02	0.07	
v/s Ratio Perm			0.07			0.01			0.01			0.01
v/c Ratio	0.80	0.58	0.19	0.50	0.20	0.05	0.77	0.33	0.02	0.22	0.29	0.03
Uniform Delay, d1	27.6	17.4	14.7	30.5	18.6	17.8	28.1	20.0	19.2	28.2	21.9	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.2	1.0	0.3	1.1	0.2	0.1	6.1	0.2	0.0	0.1	0.2	0.1
Delay (s)	40.8	18.4	15.0	31.5	18.7	17.9	34.2	20.2	19.3	28.3	22.1	20.6
Level of Service	D	B	B	C	B	B	C	C	B	C	C	C
Approach Delay (s)		21.6			21.0			26.3			23.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

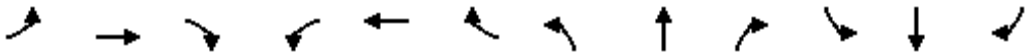


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	2	14	25	2	134	49	798	41	135	463	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.91	1.00
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1786	1583		1807	1600	1770	3737		1832	5790	1639
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1786	1583		1807	1600	1770	3737		1832	5790	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	2	15	26	2	141	52	840	43	142	487	22
RTOR Reduction (vph)	0	0	14	0	0	106	0	4	0	0	0	10
Lane Group Flow (vph)	0	14	1	0	28	35	52	879	0	142	487	12
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		2.5	2.5		3.7	11.6	1.6	22.8		7.9	29.1	29.1
Effective Green, g (s)		2.5	2.5		3.7	13.6	1.6	25.1		8.9	31.4	29.1
Actuated g/C Ratio		0.05	0.05		0.07	0.25	0.03	0.46		0.16	0.58	0.54
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		82	73		123	490	52	1731		301	3354	880
v/s Ratio Prot		c0.01			c0.02	0.01	c0.03	c0.24		c0.08	0.08	
v/s Ratio Perm			0.00			0.01						0.01
v/c Ratio		0.17	0.01		0.23	0.07	1.00	0.51		0.47	0.15	0.01
Uniform Delay, d1		24.9	24.7		23.9	15.5	26.3	10.2		20.5	5.2	5.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4	0.0		0.3	0.0	124.8	0.5		0.4	0.0	0.0
Delay (s)		25.2	24.7		24.2	15.5	151.1	10.7		20.9	5.3	5.9
Level of Service		C	C		C	B	F	B		C	A	A
Approach Delay (s)		24.9			17.0			18.5			8.7	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

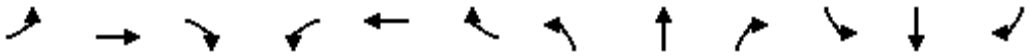
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	178	799	1	15	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	2.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3539		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3539		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	187	841	1	16	467
RTOR Reduction (vph)	0	147	0	0	0	0
Lane Group Flow (vph)	2	40	842	0	16	467
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	8.0	8.0	19.9		0.9	24.7
Effective Green, g (s)	9.0	9.0	21.9		1.9	26.7
Actuated g/C Ratio	0.22	0.22	0.53		0.05	0.64
Clearance Time (s)	4.0	4.0	4.8		4.0	4.9
Vehicle Extension (s)	2.0	2.0	3.9		2.0	2.9
Lane Grp Cap (vph)	383	342	1863		81	2271
v/s Ratio Prot	0.00		c0.24		0.01	c0.13
v/s Ratio Perm		c0.03				
v/c Ratio	0.01	0.12	0.45		0.20	0.21
Uniform Delay, d1	12.8	13.1	6.1		19.1	3.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.1	0.2		0.4	0.0
Delay (s)	12.8	13.2	6.4		19.6	3.1
Level of Service	B	B	A		B	A
Approach Delay (s)	13.2		6.4			3.7
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	8.7
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	5	0	10	0	1470	27	24	1218	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		3.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3530		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3530		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	5	0	11	0	1547	28	25	1282	0
RTOR Reduction (vph)	0	0	0	0	0	11	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	5	0	0	0	1574	0	25	1282	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				1.3		1.3		51.3		0.9	56.2	
Effective Green, g (s)				2.3		2.3		53.3		1.9	58.2	
Actuated g/C Ratio				0.03		0.03		0.72		0.03	0.79	
Clearance Time (s)				4.0		4.0		4.9		4.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				55		49		2546		46	2787	
v/s Ratio Prot				c0.00				c0.45		0.01	c0.36	
v/s Ratio Perm						0.00						
v/c Ratio				0.09		0.01		0.62		0.54	0.46	
Uniform Delay, d1				34.8		34.7		5.2		35.6	2.6	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.3		0.0		0.7		6.9	0.3	
Delay (s)				35.0		34.7		5.9		42.4	2.9	
Level of Service				D		C		A		D	A	
Approach Delay (s)		0.0			34.8			5.9			3.6	
Approach LOS		A			C			A			A	

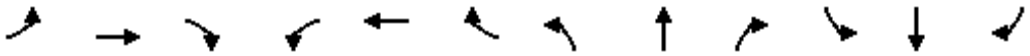
Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	16.3
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	23	31	60	26	55	35	1671	41	84	1163	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1641		1770	3522		1770	3522	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1641		1770	3522		1770	3522	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	24	33	63	27	58	37	1759	43	88	1224	31
RTOR Reduction (vph)	0	0	30	0	52	0	0	2	0	0	2	0
Lane Group Flow (vph)	51	24	3	63	33	0	37	1800	0	88	1253	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3									
Actuated Green, G (s)	6.1	6.1	6.1	7.7	7.7		3.9	47.0		5.3	48.8	
Effective Green, g (s)	7.1	7.1	7.1	8.7	8.7		4.9	49.0		6.3	50.8	
Actuated g/C Ratio	0.09	0.09	0.09	0.10	0.10		0.06	0.59		0.08	0.61	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	151	159	135	185	171		104	2069		134	2145	
v/s Ratio Prot	c0.03	0.01		c0.04	0.02		0.02	c0.51		c0.05	0.36	
v/s Ratio Perm			0.00									
v/c Ratio	0.34	0.15	0.02	0.34	0.19		0.36	0.87		0.66	0.58	
Uniform Delay, d1	35.9	35.4	35.0	34.7	34.1		37.7	14.5		37.5	9.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.4	0.1	0.9	0.5		0.8	4.5		8.5	0.5	
Delay (s)	37.0	35.7	35.0	35.6	34.6		38.5	19.0		46.0	10.4	
Level of Service	D	D	D	D	C		D	B		D	B	
Approach Delay (s)		36.1			35.0			19.4			12.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	83.4	Sum of lost time (s)	12.3
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

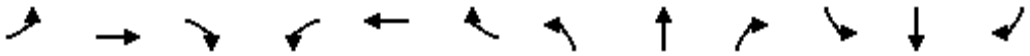
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	23	5	59	18	21	11	2507	16	12	1601	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.97		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2026			1983		1770	4983		1770	4962	
Flt Permitted		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2026			1983		1770	4983		1770	4962	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	24	5	62	19	22	12	2639	17	13	1685	57
RTOR Reduction (vph)	0	4	0	0	17	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	77	0	0	86	0	12	2655	0	13	1737	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split			Split			Prot			Prot		
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)		3.2			5.7		0.6	32.8		0.6	32.8	
Effective Green, g (s)		4.2			6.7		1.6	35.5		1.6	35.5	
Actuated g/C Ratio		0.07			0.11		0.03	0.59		0.03	0.59	
Clearance Time (s)		4.0			4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0		2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		142			221		47	2948		47	2936	
v/s Ratio Prot		c0.04			c0.04		0.01	c0.53		c0.01	0.35	
v/s Ratio Perm												
v/c Ratio		0.54			0.39		0.26	0.90		0.28	0.59	
Uniform Delay, d1		27.0			24.8		28.6	10.7		28.6	7.7	
Progression Factor		1.00			1.00		1.24	0.67		1.08	0.89	
Incremental Delay, d2		2.3			0.4		0.8	3.9		0.9	0.3	
Delay (s)		29.3			25.2		36.2	11.0		31.8	7.1	
Level of Service		C			C		D	B		C	A	
Approach Delay (s)		29.3			25.2			11.1			7.3	
Approach LOS		C			C			B			A	

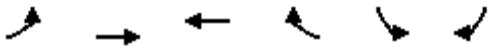
Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



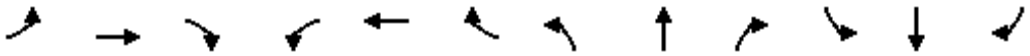
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	0	17	64	0	18	11	2492	78	4	1621	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00		0.97	1.00		0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1531	1770		1531	1770	5058		1770	5083	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1531	1770		1531	1770	5058		1770	5083	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	0	18	67	0	19	12	2623	82	4	1706	4
RTOR Reduction (vph)	0	0	17	0	0	18	0	4	0	0	0	0
Lane Group Flow (vph)	51	0	1	67	0	1	12	2701	0	4	1710	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	3.6		3.6	3.6		3.6	0.6	39.1		0.6	39.1	
Effective Green, g (s)	4.6		4.6	4.6		4.6	1.6	40.6		2.6	40.6	
Actuated g/C Ratio	0.08		0.08	0.08		0.08	0.03	0.68		0.04	0.68	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	136		117	136		117	47	3423		77	3439	
v/s Ratio Prot	0.03			c0.04			c0.01	c0.53		0.00	0.34	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.38		0.01	0.49		0.01	0.26	0.79		0.05	0.50	
Uniform Delay, d1	26.3		25.6	26.6		25.6	28.6	6.7		27.5	4.7	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.16	0.77	
Incremental Delay, d2	0.6		0.0	1.0		0.0	1.0	1.9		0.1	0.1	
Delay (s)	27.0		25.6	27.6		25.6	29.7	8.7		32.1	3.8	
Level of Service	C		C	C		C	C	A		C	A	
Approach Delay (s)		26.6			27.2			8.8			3.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



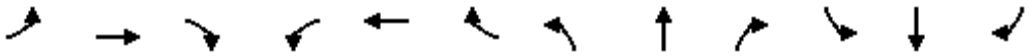
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	9	164	233	65	28	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	3.9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	173	245	68	29	1
RTOR Reduction (vph)	0	0	0	27	0	1
Lane Group Flow (vph)	9	173	245	41	29	0
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.6	30.8	26.2	26.2	3.5	3.5
Effective Green, g (s)	1.6	31.8	27.2	27.2	4.5	4.5
Actuated g/C Ratio	0.04	0.71	0.61	0.61	0.10	0.10
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	2.0
Lane Grp Cap (vph)	63	2506	2144	959	177	159
v/s Ratio Prot	c0.01	0.05	c0.07		c0.02	
v/s Ratio Perm				0.03		0.00
v/c Ratio	0.14	0.07	0.11	0.04	0.16	0.00
Uniform Delay, d1	21.0	2.0	3.7	3.6	18.5	18.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	0.0	0.0	0.2	0.0
Delay (s)	21.4	2.0	3.8	3.6	18.6	18.2
Level of Service	C	A	A	A	B	B
Approach Delay (s)		3.0	3.8		18.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	44.9	Sum of lost time (s)	11.6
Intersection Capacity Utilization	18.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



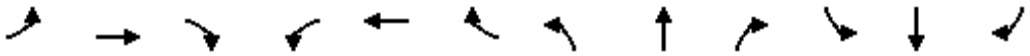
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	333	292	80	182	40	236	557	88	62	221	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4942	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4942	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	351	307	84	192	42	248	586	93	65	233	54
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	39	0
Lane Group Flow (vph)	51	351	307	84	192	42	248	586	93	65	248	0
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			
Actuated Green, G (s)	3.2	14.3	65.9	5.2	16.7	65.9	11.3	23.7	65.9	3.7	16.1	
Effective Green, g (s)	4.2	17.0	65.9	6.2	19.4	65.9	12.3	26.0	65.9	4.7	18.4	
Actuated g/C Ratio	0.06	0.26	1.00	0.09	0.29	1.00	0.19	0.39	1.00	0.07	0.28	
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	113	913	1583	167	1042	1583	330	1396	1583	126	1380	
v/s Ratio Prot	0.03	c0.10		c0.05	0.05		c0.14	c0.17		0.04	0.05	
v/s Ratio Perm			c0.19			0.03			0.06			
v/c Ratio	0.45	0.38	0.19	0.50	0.18	0.03	0.75	0.42	0.06	0.52	0.18	
Uniform Delay, d1	29.7	20.1	0.0	28.4	17.3	0.0	25.4	14.5	0.0	29.5	18.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.4	0.3	0.9	0.2	0.0	8.3	0.4	0.1	1.5	0.1	
Delay (s)	30.8	20.6	0.3	29.3	17.5	0.0	33.6	14.9	0.1	31.0	18.2	
Level of Service	C	C	A	C	B	A	C	B	A	C	B	
Approach Delay (s)		12.5			18.3			18.4			20.5	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



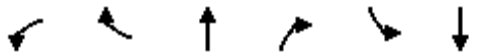
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	41	30	47	11	38	19	1280	65	48	332	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1791	1583	1770	3514		1770	3527	
Flt Permitted		0.93	1.00		0.73	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1734	1583		1363	1583	1770	3514		1770	3527	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	43	32	49	12	40	20	1347	68	51	349	8
RTOR Reduction (vph)	0	0	28	0	0	34	0	5	0	0	2	0
Lane Group Flow (vph)	0	54	4	0	61	6	20	1410	0	51	355	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		6.7	6.7		6.7	6.7	0.6	35.4		3.3	38.1	
Effective Green, g (s)		8.3	8.3		8.3	8.3	1.6	38.1		4.3	40.8	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.03	0.64		0.07	0.68	
Clearance Time (s)		4.9	4.9		4.9	4.9	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		240	219		189	219	47	2231		127	2398	
v/s Ratio Prot							0.01	c0.40		c0.03	0.10	
v/s Ratio Perm		0.03	0.00		c0.04	0.00						
v/c Ratio		0.23	0.02		0.32	0.03	0.43	0.63		0.40	0.15	
Uniform Delay, d1		23.0	22.3		23.3	22.4	28.7	6.7		26.6	3.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.7	0.0	2.2	0.6		0.8	0.1	
Delay (s)		23.3	22.4		24.0	22.4	31.0	7.3		27.4	3.5	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		23.0			23.4			7.7			6.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



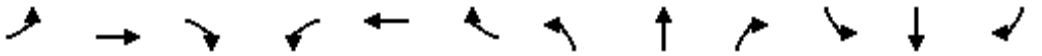
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	4	2	21	1	22	6	1235	31	20	333	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1803	1583		1778	1583	1770	3526		1770	3532	
Flt Permitted		0.87	1.00		0.79	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1619	1583		1470	1583	1770	3526		1770	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	4	2	22	1	23	6	1300	33	21	351	5
RTOR Reduction (vph)	0	0	2	0	0	20	0	1	0	0	1	0
Lane Group Flow (vph)	0	12	0	0	23	3	6	1332	0	21	355	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4		4						
Actuated Green, G (s)		9.9	9.9		9.9	9.9	0.6	64.4		2.0	65.8	
Effective Green, g (s)		10.9	10.9		10.9	10.9	1.6	67.4		3.0	68.8	
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.02	0.75		0.03	0.76	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)		196	192		178	192	31	2641		59	2700	
v/s Ratio Prot							0.00	c0.38		c0.01	0.10	
v/s Ratio Perm		0.01	0.00		c0.02	0.00						
v/c Ratio		0.06	0.00		0.13	0.01	0.19	0.50		0.36	0.13	
Uniform Delay, d1		35.0	34.8		35.3	34.8	43.6	4.6		42.6	2.8	
Progression Factor		1.00	1.00		1.00	1.00	0.76	0.25		1.00	1.00	
Incremental Delay, d2		0.0	0.0		0.1	0.0	1.0	0.2		1.3	0.1	
Delay (s)		35.1	34.8		35.4	34.8	34.3	1.4		43.9	2.9	
Level of Service		D	C		D	C	C	A		D	A	
Approach Delay (s)		35.0			35.1			1.5			5.2	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	3.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



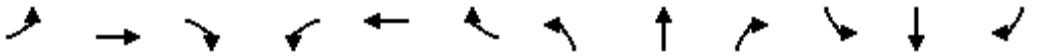
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	28	104	1156	48	34	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3518		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3518		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	109	1217	51	36	337
RTOR Reduction (vph)	0	96	2	0	0	0
Lane Group Flow (vph)	29	13	1266	0	36	337
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	10.1	10.1	62.6		3.6	70.2
Effective Green, g (s)	11.1	11.1	65.6		4.6	73.2
Actuated g/C Ratio	0.12	0.12	0.73		0.05	0.81
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	218	195	2564		90	2878
v/s Ratio Prot	c0.02		c0.36		c0.02	0.10
v/s Ratio Perm		0.01				
v/c Ratio	0.13	0.07	0.49		0.40	0.12
Uniform Delay, d1	35.2	34.9	5.2		41.4	1.7
Progression Factor	1.00	1.00	1.00		1.15	0.81
Incremental Delay, d2	0.1	0.1	0.2		1.1	0.1
Delay (s)	35.3	34.9	5.4		48.5	1.5
Level of Service	D	C	A		D	A
Approach Delay (s)	35.0		5.4			6.0
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



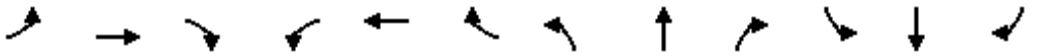
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	0	199	0	1	0	201	696	1	0	507	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5			3.0		3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00	0.98			1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85			1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400	1542			1863		1660	3417	1544		3491	1500
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400	1542			1863		1660	3417	1544		3491	1500
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	135	0	209	0	1	0	212	733	1	0	534	216
RTOR Reduction (vph)	0	160	0	0	0	0	0	0	0	0	0	147
Lane Group Flow (vph)	135	49	0	0	1	0	212	733	1	0	534	69
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	10.4	10.4			1.1		8.6	26.7	26.7		14.1	14.1
Effective Green, g (s)	12.9	12.9			2.1		9.6	30.1	30.1		17.5	17.5
Actuated g/C Ratio	0.24	0.24			0.04		0.18	0.55	0.55		0.32	0.32
Clearance Time (s)	6.0	6.0			4.0		4.0	6.4	6.4		6.4	6.4
Vehicle Extension (s)	4.1	4.1			2.0		2.0	4.3	4.3		4.3	4.3
Lane Grp Cap (vph)	803	364			72		292	1884	851		1119	481
v/s Ratio Prot	c0.04	0.03			c0.00		c0.13	0.21			c0.15	
v/s Ratio Perm									0.00			0.05
v/c Ratio	0.17	0.14			0.01		0.73	0.39	0.00		0.48	0.14
Uniform Delay, d1	16.6	16.5			25.3		21.3	7.0	5.5		14.9	13.2
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.2			0.0		7.4	0.2	0.0		0.5	0.2
Delay (s)	16.7	16.7			25.3		28.7	7.2	5.5		15.4	13.4
Level of Service	B	B			C		C	A	A		B	B
Approach Delay (s)		16.7			25.3			12.0			14.8	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



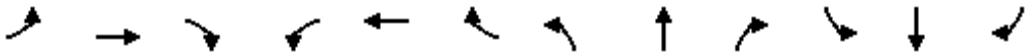
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	0	130	2	0	2	47	847	0	7	676	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4		4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539		1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1770	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	0	137	2	0	2	49	892	0	7	712	16
RTOR Reduction (vph)	0	0	115	0	0	2	0	0	0	0	0	9
Lane Group Flow (vph)	0	60	22	0	2	0	49	892	0	7	712	7
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)		8.1	8.1		2.6	2.6	2.5	26.5		0.7	24.7	24.7
Effective Green, g (s)		8.1	9.1		2.6	2.6	3.5	27.5		0.7	25.7	25.7
Actuated g/C Ratio		0.14	0.16		0.05	0.05	0.06	0.49		0.01	0.46	0.46
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)		255	256		82	73	110	1729		22	1615	723
v/s Ratio Prot		c0.03			c0.00		c0.03	c0.25		0.00	0.20	
v/s Ratio Perm			0.01			0.00						0.00
v/c Ratio		0.24	0.09		0.02	0.00	0.45	0.52		0.32	0.44	0.01
Uniform Delay, d1		21.4	20.1		25.6	25.6	25.5	9.8		27.6	10.4	8.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2	0.1		0.0	0.0	1.0	0.4		3.0	0.3	0.0
Delay (s)		21.5	20.1		25.7	25.6	26.5	10.2		30.6	10.7	8.4
Level of Service		C	C		C	C	C	B		C	B	A
Approach Delay (s)		20.5			25.6			11.1			10.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	11.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



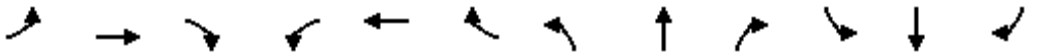
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	1	276	13	1	7	449	827	32	21	676	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1610	3070		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1610	3070		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	1	291	14	1	7	473	871	34	22	712	100
RTOR Reduction (vph)	0	0	237	0	7	0	0	0	15	0	0	72
Lane Group Flow (vph)	40	39	54	8	7	0	473	871	19	22	712	28
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.0	11.0	11.0	2.8	2.8		21.2	36.9	36.9	1.9	17.2	17.2
Effective Green, g (s)	13.7	13.7	13.7	3.8	3.8		22.2	40.3	40.3	2.9	20.6	20.6
Actuated g/C Ratio	0.19	0.19	0.19	0.05	0.05		0.30	0.54	0.54	0.04	0.28	0.28
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	311	312	293	83	158		531	1927	862	69	1416	441
v/s Ratio Prot	0.02	0.02		c0.00	0.00		c0.27	c0.25		0.01	0.14	
v/s Ratio Perm			c0.03						0.01			0.02
v/c Ratio	0.13	0.12	0.18	0.10	0.05		0.89	0.45	0.02	0.32	0.50	0.06
Uniform Delay, d1	25.2	25.2	25.4	33.5	33.4		24.7	10.2	7.8	34.6	22.4	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.5	0.8	0.2		16.6	0.3	0.0	1.0	0.4	0.1
Delay (s)	25.5	25.4	25.9	34.3	33.6		41.3	10.5	7.8	35.6	22.8	19.7
Level of Service	C	C	C	C	C		D	B	A	D	C	B
Approach Delay (s)		25.8			33.8			21.0			22.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	2	132	45	3	22	152	1420	91	74	891	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1688	1583		1779	1583	1770	5039		1770	5012	
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1688	1583		1779	1583	1770	5039		1770	5012	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	139	2	139	47	3	23	160	1495	96	78	938	100
RTOR Reduction (vph)	0	0	123	0	0	21	0	4	0	0	8	0
Lane Group Flow (vph)	71	70	16	0	50	2	160	1587	0	78	1030	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)	13.0	13.0	13.0		10.8	10.8	14.5	71.0		7.5	64.0	
Effective Green, g (s)	14.0	14.0	14.0		11.8	11.8	15.5	74.0		8.5	67.0	
Actuated g/C Ratio	0.12	0.12	0.12		0.10	0.10	0.13	0.62		0.07	0.56	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3		2.0	5.3	
Lane Grp Cap (vph)	196	197	185		175	156	229	3107		125	2798	
v/s Ratio Prot	c0.04	0.04			c0.03		c0.09	c0.31		c0.04	0.21	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.36	0.36	0.09		0.29	0.01	0.70	0.51		0.62	0.37	
Uniform Delay, d1	48.9	48.8	47.3		50.2	48.8	50.0	12.9		54.2	14.7	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4	0.1		0.3	0.0	7.3	0.6		6.8	0.2	
Delay (s)	49.3	49.2	47.4		50.5	48.9	57.3	13.5		61.0	14.9	
Level of Service	D	D	D		D	D	E	B		E	B	
Approach Delay (s)		48.3			50.0			17.5			18.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

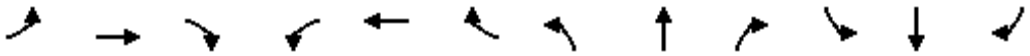


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	347	66	306	50	134	90	121	1665	18	28	1016	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.91	0.91			0.95		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.90			0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3027			3334		3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.73			0.78		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	2235			2612		3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	365	69	322	53	141	95	127	1753	19	29	1069	181
RTOR Reduction (vph)	0	115	0	0	54	0	0	0	8	0	0	98
Lane Group Flow (vph)	263	378	0	0	235	0	127	1753	11	29	1069	83
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	23.2	44.6			17.4		8.0	54.3	54.3	5.4	51.7	51.7
Effective Green, g (s)	24.2	47.3			20.1		9.0	57.3	57.3	6.4	54.7	54.7
Actuated g/C Ratio	0.20	0.39			0.17		0.08	0.48	0.48	0.05	0.46	0.46
Clearance Time (s)	4.0	5.7			5.7		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3			4.3		2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	325	1052			438		257	2428	756	94	2318	722
v/s Ratio Prot	c0.16	0.08					c0.04	c0.34		0.02	0.21	
v/s Ratio Perm		0.06			c0.09				0.01			0.05
v/c Ratio	0.81	0.36			1.46dr		0.49	0.72	0.01	0.31	0.46	0.11
Uniform Delay, d1	45.7	25.7			45.7		53.3	25.0	16.5	54.7	22.5	18.7
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.1	0.3			1.8		0.5	1.9	0.0	0.7	0.3	0.1
Delay (s)	58.7	26.0			47.5		53.9	26.9	16.5	55.4	22.8	18.9
Level of Service	E	C			D		D	C	B	E	C	B
Approach Delay (s)		37.4			47.5			28.6			22.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

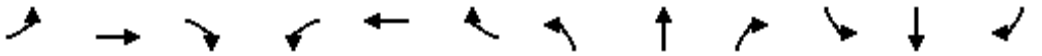
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	207	14	27	345	7	27	3	28	6	2	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.93			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	3505		1770	3529			1701			1705	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (perm)	1770	3505		1770	3529			1701			1705	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	218	15	28	363	7	28	3	29	6	2	8
RTOR Reduction (vph)	0	4	0	0	1	0	0	25	0	0	8	0
Lane Group Flow (vph)	1	229	0	28	369	0	0	35	0	0	8	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.9	22.5		0.8	22.4			6.3			1.0	
Effective Green, g (s)	1.9	25.2		1.8	25.1			7.3			2.0	
Actuated g/C Ratio	0.04	0.52		0.04	0.52			0.15			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	70	1829		66	1834			257			71	
v/s Ratio Prot	0.00	0.07		c0.02	c0.10			c0.02			c0.00	
v/s Ratio Perm												
v/c Ratio	0.01	0.13		0.42	0.20			0.14			0.12	
Uniform Delay, d1	22.3	5.9		22.7	6.2			17.8			22.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.1		1.6	0.1			0.1			0.3	
Delay (s)	22.3	6.0		24.3	6.3			17.9			22.6	
Level of Service	C	A		C	A			B			C	
Approach Delay (s)		6.0			7.6			17.9			22.6	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	228	6	20	490	18	9	2	9	43	0	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1711			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1711			1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	97	240	6	21	516	19	9	2	9	45	0	174
RTOR Reduction (vph)	0	0	3	0	0	11	0	9	0	0	0	135
Lane Group Flow (vph)	97	240	3	21	516	8	0	11	0	0	45	39
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	6.6	25.7	25.7	0.9	20.0	20.0		1.1			11.0	11.0
Effective Green, g (s)	7.6	28.7	28.7	1.9	23.0	23.0		2.1			13.0	13.0
Actuated g/C Ratio	0.13	0.49	0.49	0.03	0.39	0.39		0.04			0.22	0.22
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	230	1739	778	58	1394	623		62			394	352
v/s Ratio Prot	c0.05	0.07		0.01	c0.15			c0.01			c0.03	
v/s Ratio Perm			0.00			0.01						0.02
v/c Ratio	0.42	0.14	0.00	0.36	0.37	0.01		0.18			0.11	0.11
Uniform Delay, d1	23.4	8.1	7.6	27.7	12.6	10.8		27.3			18.1	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.5	0.0	0.0	1.4	0.2	0.0		0.5			0.0	0.1
Delay (s)	23.8	8.1	7.6	29.1	12.8	10.8		27.8			18.2	18.1
Level of Service	C	A	A	C	B	B		C			B	B
Approach Delay (s)		12.6			13.3			27.8			18.1	
Approach LOS		B			B			C			B	

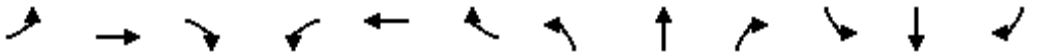
Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	12.7
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	185	12	52	315	6	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	195	13	55	332	6	58
RTOR Reduction (vph)	0	11	0	0	0	44
Lane Group Flow (vph)	195	2	55	332	6	15
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	5.5	5.5	2.3	12.8	7.6	7.6
Effective Green, g (s)	5.5	5.5	2.3	12.8	7.6	7.6
Actuated g/C Ratio	0.18	0.18	0.08	0.42	0.25	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	640	286	134	1490	443	396
v/s Ratio Prot	0.06		0.03	c0.09	0.00	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.30	0.01	0.41	0.22	0.01	0.04
Uniform Delay, d1	10.8	10.2	13.4	5.6	8.6	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	2.0	0.1	0.0	0.0
Delay (s)	11.1	10.2	15.4	5.7	8.6	8.7
Level of Service	B	B	B	A	A	A
Approach Delay (s)	11.0			7.1	8.7	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	30.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

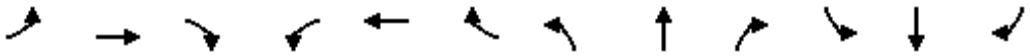
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	325	11	278	997	429	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	342	12	293	1049	452	272
RTOR Reduction (vph)	0	10	0	224	0	0
Lane Group Flow (vph)	342	2	293	825	452	272
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	15.2	15.2	59.0	59.0	30.0	94.0
Effective Green, g (s)	15.2	15.2	59.0	59.0	30.0	94.0
Actuated g/C Ratio	0.13	0.13	0.49	0.49	0.25	0.79
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	438	202	1752	784	445	2791
v/s Ratio Prot	c0.10		0.08		c0.26	0.08
v/s Ratio Perm		0.00		c0.52		
v/c Ratio	0.78	0.01	0.17	1.05	1.02	0.10
Uniform Delay, d1	50.4	45.4	16.6	30.1	44.6	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.8	0.0	0.0	46.7	46.7	0.0
Delay (s)	59.2	45.4	16.6	76.8	91.3	2.9
Level of Service	E	D	B	E	F	A
Approach Delay (s)	58.7		63.6			58.1
Approach LOS	E		E			E

Intersection Summary			
HCM Average Control Delay	61.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	119.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



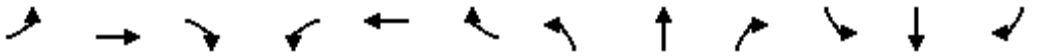
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	433	0	439	0	1642	496	0	802	768
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Lane Util. Factor				0.94		1.00		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				4990		1583		5085	1583		5085	1583
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				4990		1583		5085	1583		5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	456	0	462	0	1728	522	0	844	808
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	208	0	0	323
Lane Group Flow (vph)	0	0	0	456	0	444	0	1728	314	0	844	485
Turn Type				custom		custom			Perm			Perm
Protected Phases								2			6	
Permitted Phases				8		8			2			6
Actuated Green, G (s)				27.5		27.5		57.3	57.3		57.3	57.3
Effective Green, g (s)				27.5		27.5		57.3	57.3		57.3	57.3
Actuated g/C Ratio				0.29		0.29		0.60	0.60		0.60	0.60
Clearance Time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Vehicle Extension (s)				2.0		2.0		3.8	3.8		3.9	3.9
Lane Grp Cap (vph)				1438		456		3054	951		3054	951
v/s Ratio Prot								c0.34			0.17	
v/s Ratio Perm				0.09		c0.28			0.20			0.31
v/c Ratio				0.32		0.97		0.57	0.33		0.28	0.51
Uniform Delay, d1				26.6		33.6		11.5	9.5		9.1	11.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.0		35.1		0.3	0.3		0.1	0.6
Delay (s)				26.6		68.7		11.8	9.8		9.2	11.6
Level of Service				C		E		B	A		A	B
Approach Delay (s)		0.0			47.8			11.3			10.4	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	95.4	Sum of lost time (s)	10.6
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



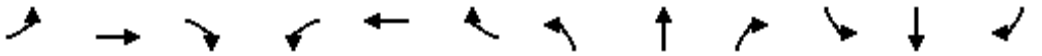
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	352	112	16	0	145	0	1673	60	62	920	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3	4.0		4.0		4.9	4.9	4.0	4.9	
Lane Util. Factor		0.95	1.00	0.97		1.00		0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	3433		1583		3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	3433		1583		3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	371	118	17	0	153	0	1761	63	65	968	0
RTOR Reduction (vph)	0	0	100	0	0	0	0	0	6	0	0	0
Lane Group Flow (vph)	0	371	18	17	0	153	0	1761	57	65	968	0
Turn Type			Perm	Prot		custom			Perm	Prot		
Protected Phases		4		3		3 1		2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		17.6	17.6	11.9		19.5		59.1	59.1	7.6	70.7	
Effective Green, g (s)		17.6	17.6	11.9		19.5		59.1	59.1	7.6	70.7	
Actuated g/C Ratio		0.15	0.15	0.10		0.17		0.52	0.52	0.07	0.62	
Clearance Time (s)		5.3	5.3	4.0				4.9	4.9	4.0	4.9	
Vehicle Extension (s)		2.8	2.8	2.0				3.6	3.6	2.0	3.6	
Lane Grp Cap (vph)		544	244	357		270		1828	818	118	2187	
v/s Ratio Prot		c0.10		0.00		c0.10		c0.50		0.04	0.27	
v/s Ratio Perm			0.01						0.04			
v/c Ratio		0.68	0.07	0.05		0.57		0.96	0.07	0.55	0.44	
Uniform Delay, d1		45.8	41.4	46.1		43.6		26.6	13.9	51.7	11.5	
Progression Factor		1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		3.4	0.1	0.0		1.6		13.5	0.0	3.1	0.2	
Delay (s)		49.2	41.5	46.2		45.2		40.1	13.9	54.9	11.7	
Level of Service		D	D	D		D		D	B	D	B	
Approach Delay (s)		47.3			45.3			39.2			14.4	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	114.4	Sum of lost time (s)	18.2
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



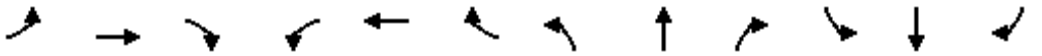
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	593	3	2	176	187	8	64	3	659	14	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1853	1583		1776	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1853	1583		1776	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	66	624	3	2	185	197	8	67	3	694	15	123
RTOR Reduction (vph)	0	0	2	0	0	154	0	0	3	0	0	27
Lane Group Flow (vph)	66	624	1	2	185	43	0	75	0	0	709	96
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	2.9	15.5	15.5	0.6	13.2	13.2		7.2	7.2		33.2	33.2
Effective Green, g (s)	3.9	18.5	18.5	1.6	16.2	16.2		8.2	8.2		34.2	34.2
Actuated g/C Ratio	0.05	0.25	0.25	0.02	0.22	0.22		0.11	0.11		0.46	0.46
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	93	879	393	38	770	344		204	174		815	727
v/s Ratio Prot	c0.04	c0.18		0.00	0.05			c0.04			c0.40	
v/s Ratio Perm			0.00			0.03			0.00			0.06
v/c Ratio	0.71	0.71	0.00	0.05	0.24	0.12		0.37	0.00		0.87	0.13
Uniform Delay, d1	34.7	25.6	21.1	35.7	24.1	23.4		30.7	29.5		18.1	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	18.3	2.7	0.0	0.2	0.2	0.2		0.4	0.0		9.5	0.0
Delay (s)	53.0	28.3	21.1	35.9	24.3	23.6		31.2	29.5		27.7	11.6
Level of Service	D	C	C	D	C	C		C	C		C	B
Approach Delay (s)		30.6			24.0			31.1			25.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



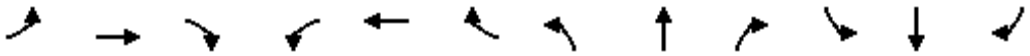
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	1244	13	74	354	52	12	92	92	115	49	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	1309	14	78	373	55	13	97	97	121	52	17
RTOR Reduction (vph)	0	0	8	0	0	30	0	0	82	0	0	13
Lane Group Flow (vph)	47	1309	6	78	373	25	13	97	15	121	52	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.7	34.6	34.6	6.9	36.8	36.8	1.3	12.9	12.9	7.6	19.2	19.2
Effective Green, g (s)	4.7	34.6	34.6	6.9	36.8	36.8	1.3	12.9	12.9	7.6	19.2	19.2
Actuated g/C Ratio	0.06	0.42	0.42	0.08	0.45	0.45	0.02	0.16	0.16	0.09	0.23	0.23
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	101	1493	668	149	1588	710	28	293	249	164	436	371
v/s Ratio Prot	0.03	c0.37		c0.04	0.11		0.01	c0.05		c0.07	0.03	
v/s Ratio Perm			0.00			0.02			0.01			0.00
v/c Ratio	0.47	0.88	0.01	0.52	0.23	0.03	0.46	0.33	0.06	0.74	0.12	0.01
Uniform Delay, d1	37.4	21.7	13.8	36.0	13.9	12.7	40.0	30.7	29.4	36.2	24.7	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	6.1	0.0	3.3	0.1	0.0	11.7	0.7	0.1	15.8	0.1	0.0
Delay (s)	40.8	27.9	13.8	39.3	14.0	12.7	51.7	31.4	29.5	52.1	24.9	24.1
Level of Service	D	C	B	D	B	B	D	C	C	D	C	C
Approach Delay (s)		28.2			17.8			31.8			42.1	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	27.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



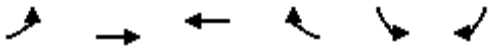
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	646	780	73	97	158	111	46	526	162	129	351	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	680	821	77	102	166	117	48	554	171	136	369	175
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	680	821	77	102	166	117	48	554	171	136	369	175
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	19.4	25.8	73.5	5.9	12.3	73.5	4.3	14.1	73.5	8.0	18.1	73.5
Effective Green, g (s)	20.4	28.8	73.5	6.9	15.3	73.5	5.3	16.8	73.5	9.0	20.8	73.5
Actuated g/C Ratio	0.28	0.39	1.00	0.09	0.21	1.00	0.07	0.23	1.00	0.12	0.28	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	953	1387	1583	322	737	1583	248	809	1583	420	1002	1583
v/s Ratio Prot	c0.20	c0.23		0.03	0.05		0.01	c0.16		0.04	c0.10	
v/s Ratio Perm			0.05			0.07			0.11			0.11
v/c Ratio	0.71	0.59	0.05	0.32	0.23	0.07	0.19	0.68	0.11	0.32	0.37	0.11
Uniform Delay, d1	23.9	17.7	0.0	31.1	24.2	0.0	32.1	25.9	0.0	29.5	21.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.9	0.1	0.2	0.3	0.1	0.1	2.7	0.1	0.2	0.4	0.1
Delay (s)	26.0	18.6	0.1	31.3	24.4	0.1	32.2	28.6	0.1	29.6	21.5	0.1
Level of Service	C	B	A	C	C	A	C	C	A	C	C	A
Approach Delay (s)		20.9			18.9			22.5			17.6	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	73.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



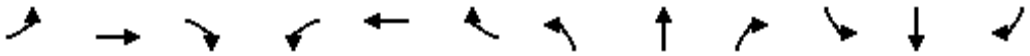
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	849	176	103	241	19	27	146	218	182	117	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.91		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3448		1770	3500		1770	1696		1770	1745	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3448		1770	3500		1770	1696		1770	1745	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	894	185	108	254	20	28	154	229	192	123	89
RTOR Reduction (vph)	0	20	0	0	7	0	0	66	0	0	29	0
Lane Group Flow (vph)	121	1059	0	108	267	0	28	317	0	192	183	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.8	25.3		6.0	24.5		3.0	22.1		9.0	28.1	
Effective Green, g (s)	7.8	28.0		7.0	27.2		4.0	24.4		10.0	30.4	
Actuated g/C Ratio	0.10	0.35		0.09	0.34		0.05	0.30		0.12	0.38	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	170	1192		153	1175		87	511		219	655	
v/s Ratio Prot	c0.07	c0.31		0.06	0.08		0.02	c0.19		c0.11	0.10	
v/s Ratio Perm												
v/c Ratio	0.71	0.89		0.71	0.23		0.32	0.62		0.88	0.28	
Uniform Delay, d1	35.5	25.0		36.0	19.3		37.2	24.3		34.9	17.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.1	8.5		11.4	0.1		0.8	2.5		29.3	0.3	
Delay (s)	46.6	33.5		47.4	19.5		38.0	26.8		64.2	18.0	
Level of Service	D	C		D	B		D	C		E	B	
Approach Delay (s)		34.9			27.4			27.6			39.9	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



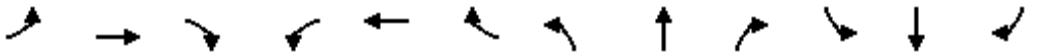
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	8	1260	365	15	80	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		2.0	2.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3518		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3518		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	1326	384	16	84	14
RTOR Reduction (vph)	0	0	2	0	0	12
Lane Group Flow (vph)	8	1326	398	0	84	2
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	1.3	36.2	30.9		6.8	6.8
Effective Green, g (s)	2.3	38.9	33.6		7.8	7.8
Actuated g/C Ratio	0.04	0.75	0.65		0.15	0.15
Clearance Time (s)	4.0	5.7	5.7		3.0	3.0
Vehicle Extension (s)	2.0	3.8	3.8		2.0	2.0
Lane Grp Cap (vph)	79	2663	2286		267	239
v/s Ratio Prot	0.00	c0.37	0.11		c0.05	
v/s Ratio Perm						0.00
v/c Ratio	0.10	0.50	0.17		0.31	0.01
Uniform Delay, d1	23.7	2.5	3.6		19.6	18.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.2	0.0		0.2	0.0
Delay (s)	23.9	2.7	3.6		19.8	18.7
Level of Service	C	A	A		B	B
Approach Delay (s)		2.9	3.6		19.7	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	5.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



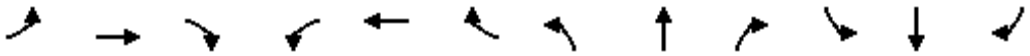
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1306	53	128	323	0	114	0	118	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7	4.7	2.0	2.7			2.0	2.0			
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00			
Frt		1.00	0.85	1.00	1.00			1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3539	1583	1770	3539			1770	1583			
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (perm)		3539	1583	1770	3539			1770	1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1375	56	135	340	0	120	0	124	0	0	0
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	98	0	0	0
Lane Group Flow (vph)	0	1375	30	135	340	0	0	120	26	0	0	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2						3			
Actuated Green, G (s)		31.5	31.5	5.0	40.5			11.1	11.1			
Effective Green, g (s)		34.5	32.5	7.0	43.5			13.1	13.1			
Actuated g/C Ratio		0.56	0.53	0.11	0.71			0.21	0.21			
Clearance Time (s)		5.7	5.7	4.0	5.7			4.0	4.0			
Vehicle Extension (s)		3.8	3.8	2.0	3.7			2.0	2.0			
Lane Grp Cap (vph)		1992	839	202	2511			378	338			
v/s Ratio Prot		c0.39		c0.08	0.10			c0.07				
v/s Ratio Perm			0.02						0.02			
v/c Ratio		0.69	0.04	0.67	0.14			0.32	0.08			
Uniform Delay, d1		9.6	6.9	26.0	2.9			20.3	19.3			
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00			
Incremental Delay, d2		1.1	0.0	6.3	0.0			0.2	0.0			
Delay (s)		10.7	6.9	32.4	2.9			20.5	19.3			
Level of Service		B	A	C	A			C	B			
Approach Delay (s)		10.5			11.3			19.9			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	6.7
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



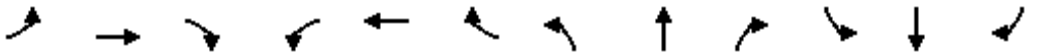
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1230	15	65	404	3	37	9	125	42	15	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3533		1770	3535			1790	1583		1797	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78	1.00		0.80	1.00
Satd. Flow (perm)	1770	3533		1770	3535			1451	1583		1482	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	1295	16	68	425	3	39	9	132	44	16	18
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	107	0	0	15
Lane Group Flow (vph)	11	1310	0	68	428	0	0	48	25	0	60	3
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	0.9	28.0		2.7	29.8			9.2	9.2		9.2	9.2
Effective Green, g (s)	1.9	30.7		3.7	32.5			10.2	10.2		10.2	10.2
Actuated g/C Ratio	0.04	0.57		0.07	0.61			0.19	0.19		0.19	0.19
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	63	2024		122	2143			276	301		282	301
v/s Ratio Prot	0.01	c0.37		c0.04	0.12							
v/s Ratio Perm								0.03	0.02		c0.04	0.00
v/c Ratio	0.17	0.65		0.56	0.20			0.17	0.08		0.21	0.01
Uniform Delay, d1	25.1	7.8		24.2	4.7			18.2	17.9		18.3	17.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.5	0.8		3.1	0.1			0.1	0.0		0.1	0.0
Delay (s)	25.6	8.6		27.3	4.8			18.3	17.9		18.4	17.6
Level of Service	C	A		C	A			B	B		B	B
Approach Delay (s)		8.7			7.9			18.0			18.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



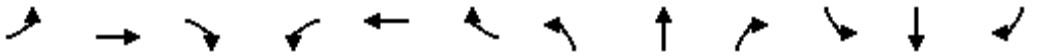
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	781	8	15	300	120	9	0	20	71	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.96			0.91		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	3534		1770	3388			1662		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (perm)	1770	3534		1770	3388			1662		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	203	822	8	16	316	126	9	0	21	75	0	36
RTOR Reduction (vph)	0	0	0	0	40	0	0	20	0	0	32	0
Lane Group Flow (vph)	203	830	0	16	402	0	0	10	0	75	4	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	11.6	31.6		0.9	20.9			2.3		6.0	6.0	
Effective Green, g (s)	12.6	34.3		1.9	23.6			3.3		7.0	7.0	
Actuated g/C Ratio	0.22	0.59		0.03	0.40			0.06		0.12	0.12	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	381	2072		57	1367			94		212	189	
v/s Ratio Prot	c0.11	c0.23		0.01	0.12			c0.01		c0.04	0.00	
v/s Ratio Perm												
v/c Ratio	0.53	0.40		0.28	0.29			0.11		0.35	0.02	
Uniform Delay, d1	20.3	6.5		27.6	11.8			26.2		23.7	22.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.2		1.0	0.2			0.4		0.4	0.0	
Delay (s)	21.1	6.7		28.6	12.0			26.6		24.0	22.7	
Level of Service	C	A		C	B			C		C	C	
Approach Delay (s)		9.5			12.5			26.6			23.6	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



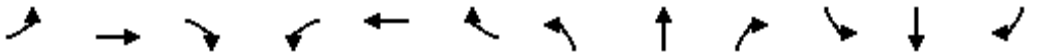
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1	9	107	3	25	23	382	120	5	705	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	1	9	113	3	26	24	402	126	5	742	17
RTOR Reduction (vph)	0	0	8	0	0	21	0	0	73	0	0	10
Lane Group Flow (vph)	6	1	1	113	3	5	24	402	53	5	742	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	3.2	3.2	7.5	10.3	10.3	0.5	22.6	22.6	0.4	22.5	22.5
Effective Green, g (s)	0.4	3.2	3.2	7.5	10.3	10.3	0.5	22.6	22.6	0.4	22.5	22.5
Actuated g/C Ratio	0.01	0.06	0.06	0.14	0.19	0.19	0.01	0.42	0.42	0.01	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	111	94	247	357	304	16	2140	666	13	2131	663
v/s Ratio Prot	0.00	0.00		c0.06	0.00		c0.01	0.08		0.00	c0.15	
v/s Ratio Perm			0.00			c0.00			0.03			0.00
v/c Ratio	0.46	0.01	0.01	0.46	0.01	0.02	1.50	0.19	0.08	0.38	0.35	0.01
Uniform Delay, d1	26.5	23.8	23.8	21.2	17.6	17.6	26.6	9.8	9.3	26.5	10.6	9.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.8	0.0	0.0	1.3	0.0	0.0	410.1	0.0	0.1	17.9	0.1	0.0
Delay (s)	50.3	23.8	23.8	22.6	17.6	17.6	436.7	9.8	9.4	44.4	10.7	9.1
Level of Service	D	C	C	C	B	B	F	A	A	D	B	A
Approach Delay (s)		33.7			21.6			28.3			10.9	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



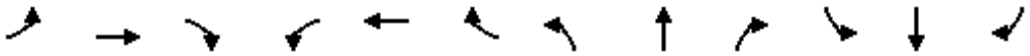
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	40	68	268	8	23	22	490	135	16	799	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	42	72	282	8	24	23	516	142	17	841	7
RTOR Reduction (vph)	0	0	62	0	0	15	0	0	94	0	0	5
Lane Group Flow (vph)	13	42	10	282	8	9	23	516	48	17	841	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	8.4	8.4	15.5	23.4	23.4	1.2	20.9	20.9	0.5	20.2	20.2
Effective Green, g (s)	1.5	10.4	9.4	16.5	25.4	24.4	2.2	22.9	21.9	1.5	22.2	21.2
Actuated g/C Ratio	0.02	0.16	0.14	0.25	0.39	0.37	0.03	0.35	0.34	0.02	0.34	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	41	297	228	447	725	592	60	1783	531	41	1729	514
v/s Ratio Prot	0.01	c0.02		c0.16	0.00		c0.01	0.10		0.01	c0.17	
v/s Ratio Perm			0.01			0.01			0.03			0.00
v/c Ratio	0.32	0.14	0.05	0.63	0.01	0.02	0.38	0.29	0.09	0.41	0.49	0.00
Uniform Delay, d1	31.4	23.6	24.1	21.7	12.2	12.9	30.9	15.3	14.9	31.5	17.0	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	0.2	0.1	2.9	0.0	0.0	4.0	0.1	0.1	6.7	0.2	0.0
Delay (s)	35.8	23.8	24.2	24.6	12.2	12.9	34.9	15.4	14.9	38.1	17.3	14.9
Level of Service	D	C	C	C	B	B	C	B	B	D	B	B
Approach Delay (s)		25.2			23.4			16.0			17.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	10	103	114	4	16	28	575	37	51	1133	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	11	108	120	4	17	29	605	39	54	1193	17
RTOR Reduction (vph)	0	0	94	0	0	15	0	0	24	0	0	10
Lane Group Flow (vph)	56	11	14	120	4	2	29	605	15	54	1193	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.4	7.9	7.9	6.7	8.2	8.2	1.2	24.6	24.6	3.6	27.0	27.0
Effective Green, g (s)	6.4	7.9	7.9	6.7	8.2	8.2	1.2	24.6	24.6	3.6	27.0	27.0
Actuated g/C Ratio	0.10	0.13	0.13	0.11	0.13	0.13	0.02	0.39	0.39	0.06	0.43	0.43
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	180	233	198	188	242	206	34	1982	617	101	2176	677
v/s Ratio Prot	0.03	0.01		c0.07	0.00		0.02	0.12		c0.03	c0.23	
v/s Ratio Perm			c0.01			0.00			0.01			0.00
v/c Ratio	0.31	0.05	0.07	0.64	0.02	0.01	0.85	0.31	0.02	0.53	0.55	0.01
Uniform Delay, d1	26.3	24.3	24.4	27.0	23.9	23.9	30.9	13.3	11.9	28.9	13.5	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	0.1	6.9	0.0	0.0	95.5	0.1	0.0	5.4	0.3	0.0
Delay (s)	27.3	24.4	24.5	34.0	24.0	23.9	126.4	13.4	11.9	34.3	13.8	10.4
Level of Service	C	C	C	C	C	C	F	B	B	C	B	B
Approach Delay (s)		25.4			32.5			18.2			14.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	36	14	19	61	6	8	46	21	9	115	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1549	1770	1835		1770	1763		1770	1736	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1549	1770	1835		1770	1763		1770	1736	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	38	15	20	64	6	8	48	22	9	121	80
RTOR Reduction (vph)	0	0	12	0	5	0	0	17	0	0	36	0
Lane Group Flow (vph)	104	38	3	20	65	0	8	54	0	9	165	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	4.0	7.6	7.6	0.4	4.0		0.4	8.8		0.4	8.8	
Effective Green, g (s)	4.0	7.6	7.6	0.4	4.0		0.4	8.8		0.4	8.8	
Actuated g/C Ratio	0.11	0.22	0.22	0.01	0.11		0.01	0.25		0.01	0.25	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	201	402	334	20	209		20	441		20	434	
v/s Ratio Prot	c0.06	c0.02		0.01	c0.04		0.00	0.03		c0.01	c0.10	
v/s Ratio Perm			0.00									
v/c Ratio	0.52	0.09	0.01	1.00	0.31		0.40	0.12		0.45	0.38	
Uniform Delay, d1	14.7	11.0	10.8	17.4	14.3		17.3	10.2		17.3	10.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.1	0.0	201.2	0.8		12.6	0.1		15.3	0.6	
Delay (s)	16.9	11.1	10.9	218.6	15.2		29.9	10.3		32.5	11.5	
Level of Service	B	B	B	F	B		C	B		C	B	
Approach Delay (s)		15.0			60.4			12.3			12.4	
Approach LOS		B			E			B			B	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	35.2	Sum of lost time (s)	22.5
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

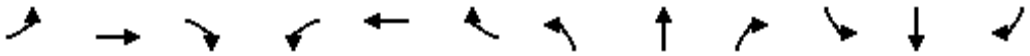
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	27	465	739	21	85	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	28	489	778	22	89	327
RTOR Reduction (vph)	0	180	0	11	0	0
Lane Group Flow (vph)	28	309	778	11	89	327
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	16.0	16.0	32.8	32.8	4.1	41.9
Effective Green, g (s)	16.0	16.0	32.8	32.8	4.1	41.9
Actuated g/C Ratio	0.24	0.24	0.48	0.48	0.06	0.62
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	417	373	900	765	107	1150
v/s Ratio Prot	0.02		c0.42		c0.05	0.18
v/s Ratio Perm		c0.20		0.01		
v/c Ratio	0.07	0.83	0.86	0.01	0.83	0.28
Uniform Delay, d1	20.2	24.7	15.6	9.1	31.6	6.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	14.1	8.7	0.0	39.7	0.1
Delay (s)	20.2	38.8	24.2	9.1	71.3	6.2
Level of Service	C	D	C	A	E	A
Approach Delay (s)	37.8		23.8			20.1
Approach LOS	D		C			C

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	2	721	29	14	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.33	1.00
Satd. Flow (perm)	1770	1583	1863	1583	615	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	2	759	31	15	493
RTOR Reduction (vph)	0	2	0	12	0	0
Lane Group Flow (vph)	5	0	759	19	15	493
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	0.6	0.6	16.0	16.0	16.0	16.0
Effective Green, g (s)	0.6	0.6	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.02	0.02	0.62	0.62	0.62	0.62
Clearance Time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	41	37	1164	989	384	1164
v/s Ratio Prot	c0.00		c0.41			0.26
v/s Ratio Perm		0.00		0.01	0.02	
v/c Ratio	0.12	0.00	0.65	0.02	0.04	0.42
Uniform Delay, d1	12.2	12.2	3.0	1.8	1.8	2.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0	1.3	0.0	0.0	0.2
Delay (s)	13.6	12.2	4.4	1.8	1.9	2.7
Level of Service	B	B	A	A	A	A
Approach Delay (s)	13.2		4.3			2.7
Approach LOS	B		A			A

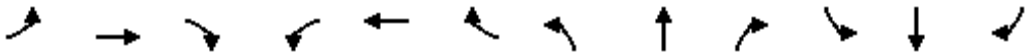
Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	25.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	535	12	41	221	0	13	5	4	6	5	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.98	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.93		1.00	0.91	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1549	1770	3539		1770	1729		1770	1687	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3539	1549	1770	3539		1770	1729		1770	1687	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	563	13	43	233	0	14	5	4	6	5	7
RTOR Reduction (vph)	0	0	7	0	0	0	0	4	0	0	7	0
Lane Group Flow (vph)	0	563	6	43	233	0	14	5	0	6	5	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		17.4	17.4	2.2	23.6		0.5	2.3		0.5	2.3	
Effective Green, g (s)		17.4	17.4	2.2	23.6		0.5	2.3		0.5	2.3	
Actuated g/C Ratio		0.45	0.45	0.06	0.61		0.01	0.06		0.01	0.06	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1604	702	101	2175		23	104		23	101	
v/s Ratio Prot		c0.16		c0.02	0.07		c0.01	0.00		0.00	c0.00	
v/s Ratio Perm			0.00									
v/c Ratio		0.35	0.01	0.43	0.11		0.61	0.05		0.26	0.05	
Uniform Delay, d1		6.8	5.8	17.5	3.1		18.9	17.0		18.8	17.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0	2.9	0.0		38.0	0.2		6.0	0.2	
Delay (s)		7.0	5.8	20.4	3.1		56.9	17.2		24.7	17.2	
Level of Service		A	A	C	A		E	B		C	B	
Approach Delay (s)		6.9			5.8			41.4			19.7	
Approach LOS		A			A			D			B	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	38.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

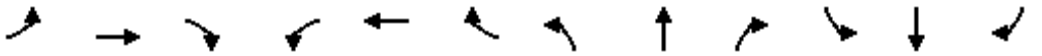
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	365	12	35	513	123	64	4	17	30	1	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.97			0.97		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.96		0.95	1.00	
Satd. Flow (prot)	1770	3519		1770	3421			1741		1770	1569	
Flt Permitted	0.95	1.00		0.95	1.00			0.20		0.95	1.00	
Satd. Flow (perm)	1770	3519		1770	3421			363		1770	1569	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	384	13	37	540	129	67	4	18	32	1	41
RTOR Reduction (vph)	0	3	0	0	25	0	0	10	0	0	37	0
Lane Group Flow (vph)	72	394	0	37	644	0	0	79	0	32	5	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Perm			Split		
Protected Phases	7	4		3	8			2		6	6	
Permitted Phases							2					
Actuated Green, G (s)	3.0	19.4		1.3	17.7			22.3		5.7	5.7	
Effective Green, g (s)	3.0	19.4		1.3	17.7			22.3		5.7	5.7	
Actuated g/C Ratio	0.05	0.30		0.02	0.27			0.34		0.09	0.09	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	82	1055		36	936			125		156	138	
v/s Ratio Prot	c0.04	0.11		0.02	c0.19					c0.02	0.00	
v/s Ratio Perm								c0.22				
v/c Ratio	0.88	0.37		1.03	0.69			0.63		0.21	0.03	
Uniform Delay, d1	30.7	17.9		31.7	21.0			17.8		27.4	27.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	59.9	0.2		158.4	2.1			10.0		0.7	0.1	
Delay (s)	90.5	18.1		190.1	23.2			27.8		28.1	27.1	
Level of Service	F	B		F	C			C		C	C	
Approach Delay (s)		29.2			31.9			27.8			27.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

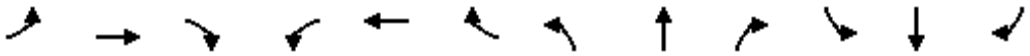
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	6	51	50	8	63	73	78	16	16	86	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1549	1770	1863	1549	1770	1863	1549	1770	1863	1549
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1549	1770	1863	1549	1770	1863	1549	1770	1863	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	6	54	53	8	66	77	82	17	17	91	111
RTOR Reduction (vph)	0	0	45	0	0	57	0	0	11	0	0	81
Lane Group Flow (vph)	80	6	9	53	8	9	77	82	6	17	91	30
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.4	6.1	6.1	1.4	5.1	5.1	2.4	11.6	11.6	0.4	9.6	9.6
Effective Green, g (s)	2.4	6.1	6.1	1.4	5.1	5.1	2.4	11.6	11.6	0.4	9.6	9.6
Actuated g/C Ratio	0.07	0.17	0.17	0.04	0.14	0.14	0.07	0.33	0.33	0.01	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	120	320	266	70	268	223	120	609	506	20	504	419
v/s Ratio Prot	c0.05	0.00		0.03	0.00		c0.04	0.04		0.01	c0.05	
v/s Ratio Perm			0.01			c0.01			0.00			0.02
v/c Ratio	0.67	0.02	0.03	0.76	0.03	0.04	0.64	0.13	0.01	0.85	0.18	0.07
Uniform Delay, d1	16.2	12.2	12.2	16.9	13.1	13.1	16.1	8.4	8.1	17.5	9.9	9.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.1	0.0	0.1	36.6	0.0	0.1	11.2	0.1	0.0	129.8	0.2	0.1
Delay (s)	29.3	12.2	12.3	53.5	13.1	13.2	27.3	8.5	8.1	147.3	10.1	9.7
Level of Service	C	B	B	D	B	B	C	A	A	F	B	A
Approach Delay (s)		22.0			30.0			16.7			20.6	
Approach LOS		C			C			B			C	

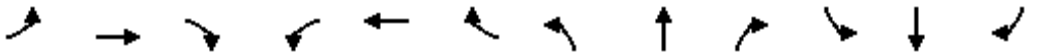
Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	35.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



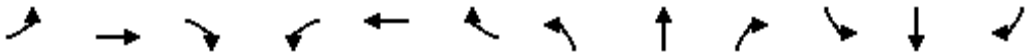
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	65	29	138	24	16	53	722	273	27	219	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0		3.0	4.3	4.3	3.0	3.2	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1859	1583		1771		1770	1863	1583	1770	3530	
Flt Permitted		1.00	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1859	1583		1771		1770	1863	1583	1770	3530	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	68	31	145	25	17	56	760	287	28	231	4
RTOR Reduction (vph)	0	0	28	0	5	0	0	0	136	0	1	0
Lane Group Flow (vph)	0	71	3	0	182	0	56	760	151	28	234	0
Turn Type	Split		Perm	Split			Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			
Actuated Green, G (s)		6.4	6.4		15.1		3.4	37.0	37.0	2.0	36.7	
Effective Green, g (s)		7.4	7.4		16.1		4.4	38.0	38.0	3.0	37.7	
Actuated g/C Ratio		0.10	0.10		0.21		0.06	0.49	0.49	0.04	0.48	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.3	5.3	4.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		177	151		366		100	910	773	68	1711	
v/s Ratio Prot		c0.04			c0.10		c0.03	c0.41		0.02	0.07	
v/s Ratio Perm			0.00						0.10			
v/c Ratio		0.40	0.02		0.50		0.56	0.84	0.20	0.41	0.14	
Uniform Delay, d1		33.1	31.9		27.3		35.8	17.2	11.3	36.5	11.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.0		0.4		4.2	6.4	0.0	1.5	0.0	
Delay (s)		33.7	31.9		27.7		40.0	23.6	11.3	38.0	11.1	
Level of Service		C	C		C		D	C	B	D	B	
Approach Delay (s)		33.1			27.7			21.2			14.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



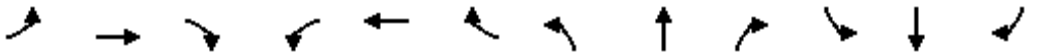
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	301	300	1	33	70	3	0	356	318	0	202	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	0.95	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1681	1761		1770	3519			1863	1583		1863	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1681	1761		1770	3519			1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	317	316	1	35	74	3	0	375	335	0	213	261
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	244	0	0	0
Lane Group Flow (vph)	285	349	0	35	74	0	0	375	91	0	213	261
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	16.9	16.9		5.9	5.9			17.8	17.8		9.8	69.0
Effective Green, g (s)	17.9	17.9		6.9	6.9			18.8	18.8		10.8	69.0
Actuated g/C Ratio	0.26	0.26		0.10	0.10			0.27	0.27		0.16	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			5.0	5.0		5.0	
Lane Grp Cap (vph)	436	457		177	352			508	431		292	1583
v/s Ratio Prot	0.17	c0.20		0.02	0.02			c0.20			c0.11	
v/s Ratio Perm									0.06			c0.16
v/c Ratio	0.65	0.76		0.20	0.21			0.74	0.21		0.73	0.16
Uniform Delay, d1	22.8	23.6		28.5	28.5			22.9	19.4		27.7	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	3.1	7.1		0.4	0.2			6.7	0.5		10.7	0.2
Delay (s)	25.9	30.7		28.9	28.8			29.6	19.9		38.4	0.2
Level of Service	C	C		C	C			C	B		D	A
Approach Delay (s)		28.6			28.8			25.0			17.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



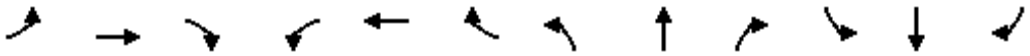
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	457	176	39	303	33	152	12	39	3	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00		0.99			0.96	1.00		0.99	
Satd. Flow (prot)		1860	1583		1831			1780	1583		1785	
Flt Permitted		0.99	1.00		0.93			0.72	1.00		0.97	
Satd. Flow (perm)		1842	1583		1717			1347	1583		1733	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	481	185	41	319	35	160	13	41	3	16	7
RTOR Reduction (vph)	0	0	72	0	5	0	0	0	31	0	5	0
Lane Group Flow (vph)	0	494	113	0	390	0	0	173	10	0	21	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		21.3	21.3		21.3			8.7	8.7		8.7	
Effective Green, g (s)		22.3	22.3		22.3			9.7	9.7		9.7	
Actuated g/C Ratio		0.58	0.58		0.58			0.25	0.25		0.25	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1075	924		1002			342	402		440	
v/s Ratio Prot												
v/s Ratio Perm		c0.27	0.07		0.23			c0.13	0.01		0.01	
v/c Ratio		0.46	0.12		0.39			0.51	0.03		0.05	
Uniform Delay, d1		4.5	3.6		4.3			12.2	10.7		10.8	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.2	0.0		0.2			0.4	0.0		0.0	
Delay (s)		4.8	3.6		4.5			12.6	10.7		10.8	
Level of Service		A	A		A			B	B		B	
Approach Delay (s)		4.5			4.5			12.3			10.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	38.2	Sum of lost time (s)	6.2
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



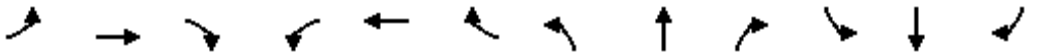
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	549	11	35	427	116	14	40	46	39	27	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.2		3.2	3.2		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.97		1.00	0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	1857		1770	1803		1770	1714			1809	1583
Flt Permitted	0.39	1.00		0.38	1.00		0.71	1.00			0.79	1.00
Satd. Flow (perm)	730	1857		706	1803		1326	1714			1478	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	101	578	12	37	449	122	15	42	48	41	28	29
RTOR Reduction (vph)	0	1	0	0	14	0	0	39	0	0	0	23
Lane Group Flow (vph)	101	589	0	37	557	0	15	51	0	0	69	6
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		4
Actuated Green, G (s)	23.2	23.2		23.2	23.2		6.4	6.4			6.4	6.4
Effective Green, g (s)	24.2	24.2		24.2	24.2		7.4	7.4			7.4	7.4
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.20	0.20			0.20	0.20
Clearance Time (s)	4.2	4.2		4.2	4.2		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	467	1189		452	1154		260	336			289	310
v/s Ratio Prot		c0.32			0.31			0.03				
v/s Ratio Perm	0.14			0.05			0.01				c0.05	0.00
v/c Ratio	0.22	0.50		0.08	0.48		0.06	0.15			0.24	0.02
Uniform Delay, d1	2.8	3.6		2.6	3.5		12.4	12.6			12.8	12.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.2	0.2		0.1	0.2		0.0	0.1			0.2	0.0
Delay (s)	3.0	3.8		2.6	3.8		12.4	12.7			13.0	12.3
Level of Service	A	A		A	A		B	B			B	B
Approach Delay (s)		3.7			3.7			12.6			12.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	37.8	Sum of lost time (s)	6.2
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



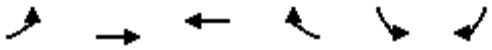
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	356	28	181	343	5	44	56	484	13	22	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0	3.0		3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.99	
Satd. Flow (prot)	1770	1843		1770	1859			1823	1583		1738	
Flt Permitted	0.95	1.00		0.95	1.00			0.86	1.00		0.93	
Satd. Flow (perm)	1770	1843		1770	1859			1604	1583		1640	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	81	375	29	191	361	5	46	59	509	14	23	27
RTOR Reduction (vph)	0	5	0	0	1	0	0	0	353	0	21	0
Lane Group Flow (vph)	81	399	0	191	365	0	0	105	156	0	43	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		
Actuated Green, G (s)	2.6	14.9		5.7	18.0			8.6	8.6		8.6	
Effective Green, g (s)	3.6	15.9		6.7	19.0			9.6	9.6		9.6	
Actuated g/C Ratio	0.09	0.38		0.16	0.46			0.23	0.23		0.23	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0	4.0		4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)	154	708		286	853			372	367		380	
v/s Ratio Prot	0.05	c0.22		c0.11	0.20							
v/s Ratio Perm								0.07	c0.10		0.03	
v/c Ratio	0.53	0.56		0.67	0.43			0.28	0.42		0.11	
Uniform Delay, d1	18.1	10.0		16.3	7.5			13.1	13.5		12.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	1.5	0.9		4.5	0.3			0.2	0.3		0.0	
Delay (s)	19.6	10.9		20.8	7.8			13.2	13.8		12.6	
Level of Service	B	B		C	A			B	B		B	
Approach Delay (s)		12.3			12.3			13.7			12.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	41.4	Sum of lost time (s)	9.2
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	84	441	91	64	4	248	701	20	29	871	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.6	3.9	3.0	1.6	2.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	88	464	96	67	4	261	738	21	31	917	29
RTOR Reduction (vph)	0	0	374	0	0	3	0	0	12	0	0	18
Lane Group Flow (vph)	95	88	90	96	67	1	261	738	9	31	917	11
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	15.5	15.5	15.5	10.4	10.4	10.4	11.4	36.0	36.0	6.0	32.6	32.6
Effective Green, g (s)	16.5	16.5	16.5	11.4	11.4	11.4	12.4	38.3	37.0	7.0	34.9	33.6
Actuated g/C Ratio	0.19	0.19	0.19	0.13	0.13	0.13	0.15	0.45	0.44	0.08	0.41	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.9	4.9	4.0	3.9	3.9
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	344	362	308	238	250	213	502	1598	691	146	1456	627
v/s Ratio Prot	0.05	0.05		c0.05	0.04		c0.08	0.21		0.02	c0.26	
v/s Ratio Perm			c0.06			0.00			0.01			0.01
v/c Ratio	0.28	0.24	0.29	0.40	0.27	0.00	0.52	0.46	0.01	0.21	0.63	0.02
Uniform Delay, d1	29.1	28.9	29.2	33.6	33.0	31.8	33.4	16.1	13.6	36.3	19.8	15.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.2	0.4	0.2	0.0	0.4	0.3	0.0	0.3	1.0	0.0
Delay (s)	29.2	29.0	29.4	34.0	33.2	31.8	33.8	16.4	13.6	36.6	20.8	15.6
Level of Service	C	C	C	C	C	C	C	B	B	D	C	B
Approach Delay (s)		29.3			33.6			20.8			21.1	
Approach LOS		C			C			C			C	

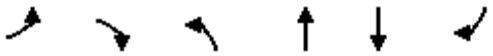
Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	9.6
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	8	457	484	339	204	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.98	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	3539	1863	1546	3398	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	3539	1863	1546	3398	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	481	509	357	215	24
RTOR Reduction (vph)	0	0	0	190	18	0
Lane Group Flow (vph)	8	481	509	167	221	0
Confl. Peds. (#/hr)				4		4
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	0.5	22.0	17.5	17.5	7.3	
Effective Green, g (s)	0.5	22.0	17.5	17.5	7.3	
Actuated g/C Ratio	0.01	0.59	0.47	0.47	0.20	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	24	2087	874	725	665	
v/s Ratio Prot	0.00	c0.14	c0.27		c0.06	
v/s Ratio Perm				0.11		
v/c Ratio	0.33	0.23	0.58	0.23	0.33	
Uniform Delay, d1	18.2	3.6	7.2	5.9	12.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.0	0.1	1.0	0.2	0.3	
Delay (s)	26.3	3.7	8.2	6.1	13.2	
Level of Service	C	A	A	A	B	
Approach Delay (s)		4.1	7.3		13.2	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	37.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

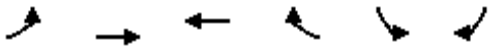
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	604	572	206	24	45	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.96	1.00	1.00
Satd. Flow (prot)	1770	1546	1681	1702	1863	1561
Flt Permitted	0.95	1.00	0.95	0.72	1.00	1.00
Satd. Flow (perm)	1770	1546	1681	1277	1863	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	636	602	217	25	47	197
RTOR Reduction (vph)	0	312	0	0	0	154
Lane Group Flow (vph)	636	290	119	123	47	43
Confl. Peds. (#/hr)		2				2
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	26.2	26.2	4.2	20.1	11.9	11.9
Effective Green, g (s)	26.2	26.2	4.2	20.1	11.9	11.9
Actuated g/C Ratio	0.48	0.48	0.08	0.37	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	746	130	506	408	342
v/s Ratio Prot			c0.07	0.02	0.03	
v/s Ratio Perm	c0.36	0.19		c0.07		0.03
v/c Ratio	0.74	0.39	0.92	0.24	0.12	0.13
Uniform Delay, d1	11.3	9.0	24.9	11.8	17.0	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.3	53.4	0.3	0.1	0.2
Delay (s)	14.9	9.3	78.3	12.1	17.1	17.2
Level of Service	B	A	E	B	B	B
Approach Delay (s)	12.2			44.6	17.2	
Approach LOS	B			D	B	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

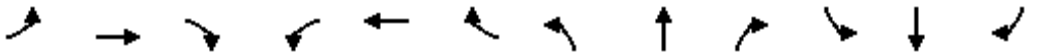
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	76	283	627	100	37	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1548	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	298	660	105	39	32
RTOR Reduction (vph)	0	0	0	77	0	19
Lane Group Flow (vph)	80	298	660	28	39	13
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.0	20.1	13.1	13.1	20.4	20.4
Effective Green, g (s)	3.0	20.1	13.1	13.1	20.4	20.4
Actuated g/C Ratio	0.06	0.41	0.27	0.27	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	109	2107	1373	418	744	657
v/s Ratio Prot	c0.05	0.06	c0.13		c0.02	
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.73	0.14	0.48	0.07	0.05	0.02
Uniform Delay, d1	22.4	8.8	14.8	13.2	8.3	8.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.3	0.0	0.3	0.1	0.1	0.1
Delay (s)	44.7	8.9	15.1	13.2	8.5	8.3
Level of Service	D	A	B	B	A	A
Approach Delay (s)		16.4	14.9		8.4	
Approach LOS		B	B		A	

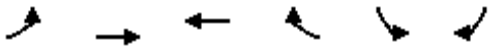
Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	247	25	890	666	320	64	434	569	128	136	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.91	0.88	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	260	26	937	701	337	67	457	599	135	143	32
RTOR Reduction (vph)	0	0	21	0	0	183	0	0	460	0	0	24
Lane Group Flow (vph)	51	260	5	937	701	154	67	457	139	135	143	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.5	13.9	13.9	28.7	38.1	38.1	6.1	18.9	18.9	8.2	21.0	21.0
Effective Green, g (s)	5.5	15.9	14.9	29.7	40.1	39.1	7.1	20.9	19.9	9.2	23.0	22.0
Actuated g/C Ratio	0.06	0.19	0.17	0.35	0.47	0.46	0.08	0.24	0.23	0.11	0.27	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	943	275	1190	2379	722	147	1240	647	190	1365	406
v/s Ratio Prot	0.03	0.05		c0.27	c0.14		0.04	c0.09		c0.08	0.03	
v/s Ratio Perm			0.00			0.10			0.05			0.01
v/c Ratio	0.45	0.28	0.02	0.79	0.29	0.21	0.46	0.37	0.21	0.71	0.10	0.02
Uniform Delay, d1	38.6	30.0	29.3	25.2	14.1	14.0	37.5	26.9	26.6	37.0	23.6	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.2	0.0	3.5	0.1	0.1	2.2	0.2	0.2	11.8	0.0	0.0
Delay (s)	41.4	30.1	29.4	28.7	14.1	14.2	39.7	27.1	26.8	48.8	23.6	23.8
Level of Service	D	C	C	C	B	B	D	C	C	D	C	C
Approach Delay (s)		31.8			21.0			27.7			34.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	85.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	21	953	1702	36	159	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1548	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	1003	1792	38	167	92
RTOR Reduction (vph)	0	0	0	24	0	57
Lane Group Flow (vph)	22	1003	1792	14	167	35
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	24.8	20.1	20.1	20.1	20.1
Effective Green, g (s)	0.7	24.8	20.1	20.1	20.1	20.1
Actuated g/C Ratio	0.01	0.47	0.38	0.38	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	23	2384	1932	588	673	594
v/s Ratio Prot	0.01	c0.20	c0.35		c0.09	
v/s Ratio Perm				0.01		0.02
v/c Ratio	0.96	0.42	0.93	0.02	0.25	0.06
Uniform Delay, d1	26.1	9.3	15.7	10.3	11.2	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	166.5	0.1	8.3	0.0	0.9	0.2
Delay (s)	192.6	9.4	24.0	10.3	12.1	10.6
Level of Service	F	A	C	B	B	B
Approach Delay (s)		13.3	23.7		11.6	
Approach LOS		B	C		B	

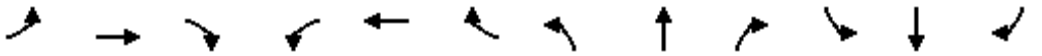
Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	52.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1106	6	2	1756	9	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1547	1770	5085	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1547	1770	5085	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1164	6	2	1848	9	1
RTOR Reduction (vph)	0	4	0	0	0	1
Lane Group Flow (vph)	1164	2	2	1848	9	0
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	23.3	23.3	0.8	28.1	20.0	20.0
Effective Green, g (s)	23.3	23.3	0.8	28.1	20.0	20.0
Actuated g/C Ratio	0.42	0.42	0.01	0.50	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2112	643	25	2547	631	557
v/s Ratio Prot	0.23		0.00	c0.36	c0.01	
v/s Ratio Perm		0.00				0.00
v/c Ratio	0.55	0.00	0.08	0.73	0.01	0.00
Uniform Delay, d1	12.4	9.6	27.3	11.0	11.7	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	1.4	1.1	0.0	0.0
Delay (s)	12.7	9.6	28.7	12.0	11.7	11.6
Level of Service	B	A	C	B	B	B
Approach Delay (s)	12.7			12.0	11.7	
Approach LOS	B			B	B	

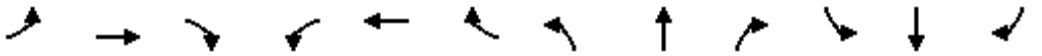
Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	153	925	45	113	1624	272	64	138	69	129	81	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	161	974	47	119	1709	286	67	145	73	136	85	86
RTOR Reduction (vph)	0	0	28	0	0	131	0	0	59	0	0	68
Lane Group Flow (vph)	161	974	19	119	1709	155	67	145	14	136	85	18
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.1	34.0	34.0	8.5	33.4	33.4	5.5	15.1	15.1	7.1	16.7	16.7
Effective Green, g (s)	10.1	36.0	35.0	9.5	35.4	34.4	6.5	17.1	16.1	8.1	18.7	17.7
Actuated g/C Ratio	0.12	0.43	0.41	0.11	0.42	0.41	0.08	0.20	0.19	0.10	0.22	0.21
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	211	2161	654	199	2125	643	136	376	301	169	411	331
v/s Ratio Prot	c0.09	0.19		0.07	c0.34		0.04	c0.08		c0.08	0.05	
v/s Ratio Perm			0.01			0.10			0.01			0.01
v/c Ratio	0.76	0.45	0.03	0.60	0.80	0.24	0.49	0.39	0.05	0.80	0.21	0.05
Uniform Delay, d1	36.1	17.3	14.8	35.8	21.6	16.6	37.5	29.3	28.0	37.5	26.9	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.0	0.2	0.0	4.8	2.3	0.2	2.8	0.7	0.1	23.5	0.3	0.1
Delay (s)	51.2	17.5	14.8	40.6	23.9	16.7	40.3	29.9	28.1	61.1	27.2	26.9
Level of Service	D	B	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		22.0			23.9			31.9			42.1	
Approach LOS		C			C			C			D	

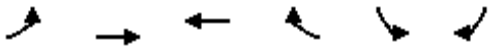
Intersection Summary			
HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	371	696	38	611	1476	327	26	990	355	147	844	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1551	3433	5085	1553	3433	3539	1556	3433	3539	1556
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1551	3433	5085	1553	3433	3539	1556	3433	3539	1556
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	391	733	40	643	1554	344	27	1042	374	155	888	478
RTOR Reduction (vph)	0	0	33	0	0	144	0	0	237	0	0	271
Lane Group Flow (vph)	391	733	7	643	1554	200	27	1042	137	155	888	207
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.7	19.7	19.7	28.0	34.0	34.0	5.4	34.6	34.6	9.0	38.2	38.2
Effective Green, g (s)	14.7	22.7	20.7	29.0	37.0	35.0	6.4	38.0	35.6	10.0	41.6	39.2
Actuated g/C Ratio	0.13	0.20	0.19	0.26	0.33	0.31	0.06	0.34	0.32	0.09	0.37	0.35
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	453	1037	288	894	1690	488	197	1208	498	308	1323	548
v/s Ratio Prot	c0.11	0.14		0.19	c0.31		0.01	c0.29		0.05	c0.25	
v/s Ratio Perm			0.00			0.13			0.09			0.13
v/c Ratio	0.86	0.71	0.03	0.72	0.92	0.41	0.14	0.86	0.27	0.50	0.67	0.38
Uniform Delay, d1	47.3	41.2	37.1	37.4	35.7	30.0	49.8	34.2	28.2	48.3	29.1	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.1	2.4	0.1	2.3	8.6	0.8	0.1	7.1	0.6	0.5	1.7	0.8
Delay (s)	62.4	43.6	37.1	39.8	44.3	30.8	49.9	41.3	28.8	48.8	30.8	27.8
Level of Service	E	D	D	D	D	C	D	D	C	D	C	C
Approach Delay (s)		49.7			41.4			38.2			31.7	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	39.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	111.3	Sum of lost time (s)	11.2
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

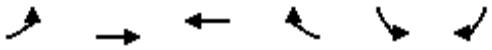


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	5	1188	2379	283	151	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1251	2504	298	159	4
RTOR Reduction (vph)	0	0	0	90	0	3
Lane Group Flow (vph)	5	1251	2504	208	159	1
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.0	48.4	43.4	43.4	13.8	13.8
Effective Green, g (s)	2.0	51.4	46.4	46.4	14.8	14.8
Actuated g/C Ratio	0.03	0.71	0.64	0.64	0.20	0.20
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	49	3620	3268	1017	363	324
v/s Ratio Prot	0.00	c0.25	c0.49		c0.09	
v/s Ratio Perm				0.13		0.00
v/c Ratio	0.10	0.35	0.77	0.20	0.44	0.00
Uniform Delay, d1	34.2	4.0	9.1	5.3	25.1	22.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	1.2	0.1	0.3	0.0
Delay (s)	34.6	4.1	10.3	5.4	25.4	22.8
Level of Service	C	A	B	A	C	C
Approach Delay (s)		4.2	9.8		25.3	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1352	22	207	2666	12	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1423	23	218	2806	13	135
RTOR Reduction (vph)	0	12	0	0	0	111
Lane Group Flow (vph)	1423	11	218	2806	13	24
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	30.2	30.2	11.4	45.6	10.8	10.8
Effective Green, g (s)	33.2	33.2	12.4	48.6	11.8	11.8
Actuated g/C Ratio	0.49	0.49	0.18	0.72	0.18	0.18
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	2508	781	326	3672	310	278
v/s Ratio Prot	0.28		0.12	c0.55	0.01	
v/s Ratio Perm		0.01				c0.01
v/c Ratio	0.57	0.01	0.67	0.76	0.04	0.09
Uniform Delay, d1	12.0	8.7	25.5	5.8	23.1	23.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	4.0	1.1	0.0	0.0
Delay (s)	12.4	8.7	29.5	6.9	23.1	23.3
Level of Service	B	A	C	A	C	C
Approach Delay (s)	12.3			8.5	23.3	
Approach LOS	B			A	C	

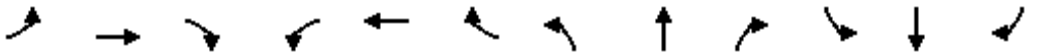
Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	6.9
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	1413	2848	420	340	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1533	1770	1557
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1533	1770	1557
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	1487	2998	442	358	25
RTOR Reduction (vph)	0	0	0	101	0	19
Lane Group Flow (vph)	52	1487	2998	341	358	6
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.6	67.3	58.7	58.7	23.9	23.9
Effective Green, g (s)	5.6	70.3	61.7	61.7	24.9	24.9
Actuated g/C Ratio	0.05	0.69	0.60	0.60	0.24	0.24
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	97	3501	3073	926	432	380
v/s Ratio Prot	c0.03	0.29	c0.59		c0.20	
v/s Ratio Perm				0.22		0.00
v/c Ratio	0.54	0.42	0.98	0.37	0.83	0.02
Uniform Delay, d1	47.0	7.0	19.5	10.3	36.6	29.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1	11.1	0.4	11.8	0.0
Delay (s)	49.8	7.1	30.6	10.6	48.4	29.3
Level of Service	D	A	C	B	D	C
Approach Delay (s)		8.6	28.1		47.1	
Approach LOS		A	C		D	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	102.1	Sum of lost time (s)	9.9
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

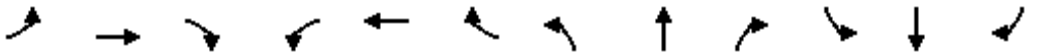


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	290	457	5	467	31	747	127	8	54	73	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	305	481	5	492	33	786	134	8	57	77	0
RTOR Reduction (vph)	0	0	368	0	0	23	0	0	4	0	0	0
Lane Group Flow (vph)	0	305	113	5	492	10	786	134	4	57	77	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		15.4	15.4	0.5	20.9	20.9	22.3	30.0	30.0	4.0	11.7	
Effective Green, g (s)		17.4	16.4	1.5	22.9	21.9	23.3	32.0	31.0	5.0	13.7	
Actuated g/C Ratio		0.25	0.23	0.02	0.33	0.31	0.33	0.46	0.44	0.07	0.20	
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		881	371	38	1159	496	1144	1620	702	127	694	
v/s Ratio Prot		0.09		0.00	c0.14		c0.23	0.04		0.03	c0.02	
v/s Ratio Perm			0.07			0.01			0.00			
v/c Ratio		0.35	0.30	0.13	0.42	0.02	0.69	0.08	0.01	0.45	0.11	
Uniform Delay, d1		21.6	22.0	33.6	18.4	16.6	20.1	10.7	10.8	31.1	23.1	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.5	1.6	0.3	0.0	1.7	0.0	0.0	2.5	0.1	
Delay (s)		21.8	22.5	35.1	18.6	16.6	21.9	10.7	10.9	33.6	23.2	
Level of Service		C	C	D	B	B	C	B	B	C	C	
Approach Delay (s)		22.2			18.6			20.2			27.6	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

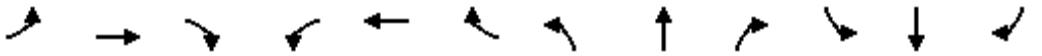
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	391	6	58	499	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3539	1583	1770	3539	1770	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (perm)	3539	1583	1770	3539	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	412	6	61	525	5	0
RTOR Reduction (vph)	0	4	0	0	0	0
Lane Group Flow (vph)	412	2	61	525	5	0
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	10.9	10.9	2.0	17.9	7.9	
Effective Green, g (s)	10.9	10.9	2.0	17.9	7.9	
Actuated g/C Ratio	0.30	0.30	0.06	0.50	0.22	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1078	482	99	1770	391	
v/s Ratio Prot	c0.12		0.03	c0.15		
v/s Ratio Perm		0.00			c0.00	
v/c Ratio	0.38	0.00	0.62	0.30	0.01	
Uniform Delay, d1	9.8	8.7	16.5	5.3	10.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.0	10.9	0.1	0.0	
Delay (s)	10.0	8.7	27.4	5.3	10.9	
Level of Service	B	A	C	A	B	
Approach Delay (s)	10.0			7.6	10.9	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	35.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



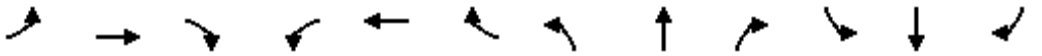
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	117	337	11	83	552	317	9	880	50	239	924	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	123	355	12	87	581	334	9	926	53	252	973	127
RTOR Reduction (vph)	0	0	8	0	0	101	0	0	33	0	0	69
Lane Group Flow (vph)	123	355	4	87	581	233	9	926	20	252	973	58
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.1	24.2	24.2	3.1	23.2	23.2	0.7	31.5	31.5	7.1	37.9	37.9
Effective Green, g (s)	5.1	26.2	25.2	4.1	25.2	24.2	1.7	33.5	32.5	8.1	39.9	38.9
Actuated g/C Ratio	0.06	0.31	0.29	0.05	0.29	0.28	0.02	0.39	0.38	0.09	0.46	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	204	1551	464	164	1038	446	68	1380	599	324	2362	717
v/s Ratio Prot	c0.04	0.07		0.03	c0.16		0.00	c0.26		c0.07	0.19	
v/s Ratio Perm			0.00			0.15			0.01			0.04
v/c Ratio	0.60	0.23	0.01	0.53	0.56	0.52	0.13	0.67	0.03	0.78	0.41	0.08
Uniform Delay, d1	39.4	22.3	21.5	40.0	25.7	26.0	41.4	21.6	16.8	38.0	15.2	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.1	0.0	3.3	0.7	1.1	0.9	1.3	0.0	11.2	0.1	0.0
Delay (s)	44.4	22.4	21.5	43.2	26.3	27.1	42.3	22.9	16.8	49.2	15.3	13.4
Level of Service	D	C	C	D	C	C	D	C	B	D	B	B
Approach Delay (s)		27.9			28.0			22.8			21.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



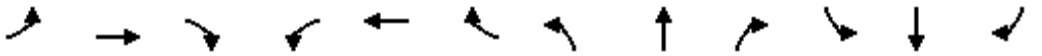
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	617	7	97	940	37	4	6	35	17	8	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.95	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	1770	1622		1770	1770	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	1770	1622		1770	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	649	7	102	989	39	4	6	37	18	8	4
RTOR Reduction (vph)	0	0	5	0	0	19	0	30	0	0	4	0
Lane Group Flow (vph)	0	649	2	102	989	20	4	13	0	18	8	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		15.0	15.0	4.4	23.4	23.4	6.1	9.1		0.5	3.5	
Effective Green, g (s)		15.0	15.0	4.4	23.4	23.4	6.1	9.1		0.5	3.5	
Actuated g/C Ratio		0.33	0.33	0.10	0.52	0.52	0.14	0.20		0.01	0.08	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1180	528	173	1840	823	240	328		20	138	
v/s Ratio Prot		0.18		0.06	c0.28		0.00	c0.01		c0.01	0.00	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.55	0.00	0.59	0.54	0.02	0.02	0.04		0.90	0.06	
Uniform Delay, d1		12.2	10.0	19.4	7.2	5.3	16.9	14.4		22.2	19.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.0	5.1	0.3	0.0	0.1	0.1		153.9	0.2	
Delay (s)		12.8	10.0	24.5	7.5	5.3	17.0	14.5		176.1	19.4	
Level of Service		B	B	C	A	A	B	B		F	B	
Approach Delay (s)		12.8			9.0			14.7			113.5	
Approach LOS		B			A			B			F	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	604	13	256	1168	81	13	151	189	13	245	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	3.0	4.7	4.7	4.3	4.3	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	636	14	269	1229	85	14	159	199	14	258	120
RTOR Reduction (vph)	0	0	10	0	0	40	0	0	154	0	0	93
Lane Group Flow (vph)	56	636	4	269	1229	45	14	159	45	14	258	27
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	20.2	20.2	15.0	31.2	31.2	1.6	15.2	15.2	1.6	15.2	15.2
Effective Green, g (s)	5.0	21.2	21.2	16.0	32.2	32.2	2.6	16.2	16.2	2.6	16.2	16.2
Actuated g/C Ratio	0.07	0.30	0.30	0.23	0.45	0.45	0.04	0.23	0.23	0.04	0.23	0.23
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	5.3	5.3	5.3	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	125	1057	473	399	1605	718	65	425	361	65	425	361
v/s Ratio Prot	0.03	0.18		c0.15	c0.35		c0.01	0.09		0.01	c0.14	
v/s Ratio Perm			0.00			0.03			0.03			0.02
v/c Ratio	0.45	0.60	0.01	0.67	0.77	0.06	0.22	0.37	0.13	0.22	0.61	0.08
Uniform Delay, d1	31.7	21.3	17.5	25.1	16.2	10.9	33.2	23.1	21.8	33.2	24.5	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.3	0.0	3.5	2.5	0.1	0.6	0.2	0.1	0.6	1.7	0.0
Delay (s)	32.6	22.6	17.5	28.6	18.8	11.0	33.8	23.3	21.8	33.8	26.2	21.6
Level of Service	C	C	B	C	B	B	C	C	C	C	C	C
Approach Delay (s)		23.3			20.0			22.9			25.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

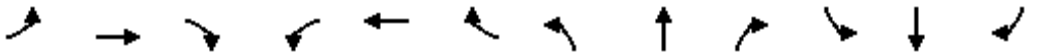


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	891	13	96	1380	56	20	18	16	33	33	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	5.7	4.0	4.7	4.7	4.9	4.9	4.9	3.9	4.9	3.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	938	14	101	1453	59	21	19	17	35	35	36
RTOR Reduction (vph)	0	0	7	0	0	17	0	0	16	0	0	32
Lane Group Flow (vph)	17	938	7	101	1453	42	21	19	1	35	35	4
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	0.6	38.7	38.7	6.2	44.3	44.3	5.1	5.1	5.1	6.6	6.6	6.6
Effective Green, g (s)	1.6	39.7	38.7	6.2	45.3	45.3	5.1	5.1	5.1	7.6	6.6	7.6
Actuated g/C Ratio	0.02	0.52	0.51	0.08	0.60	0.60	0.07	0.07	0.07	0.10	0.09	0.10
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.9	4.9	4.9	4.9	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	37	1846	805	144	2107	942	119	125	106	177	162	158
v/s Ratio Prot	0.01	0.27		c0.06	c0.41		c0.01	0.01		c0.02	0.02	
v/s Ratio Perm			0.00			0.03			0.00			0.00
v/c Ratio	0.46	0.51	0.01	0.70	0.69	0.05	0.18	0.15	0.01	0.20	0.22	0.02
Uniform Delay, d1	36.8	11.8	9.2	34.0	10.6	6.4	33.5	33.5	33.1	31.5	32.3	30.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.4	0.0	11.9	1.1	0.0	0.3	0.2	0.0	0.2	0.2	0.0
Delay (s)	40.1	12.2	9.2	45.9	11.7	6.4	33.8	33.7	33.2	31.7	32.6	30.9
Level of Service	D	B	A	D	B	A	C	C	C	C	C	C
Approach Delay (s)		12.7			13.6			33.6			31.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	12.8
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

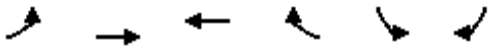
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	815	80	181	1425	104	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	858	84	191	1500	109	117
RTOR Reduction (vph)	0	50	0	0	0	97
Lane Group Flow (vph)	858	34	191	1500	109	20
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	22.4	22.4	9.1	36.5	9.6	9.6
Effective Green, g (s)	22.4	22.4	9.1	36.5	9.6	9.6
Actuated g/C Ratio	0.40	0.40	0.16	0.65	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1413	632	287	2303	303	271
v/s Ratio Prot	0.24		0.11	c0.42	c0.06	
v/s Ratio Perm		0.02				0.01
v/c Ratio	0.61	0.05	0.67	0.65	0.36	0.07
Uniform Delay, d1	13.4	10.3	22.1	5.9	20.5	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	5.7	0.7	0.7	0.1
Delay (s)	14.1	10.4	27.8	6.6	21.3	19.6
Level of Service	B	B	C	A	C	B
Approach Delay (s)	13.8			9.0	20.4	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



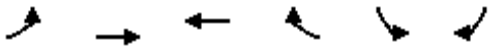
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	598	403	968	986	52	585	1137	533	62	1001	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.94	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	4990	3513		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	4990	3513		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	103	629	424	1019	1038	55	616	1197	561	65	1054	57
RTOR Reduction (vph)	0	0	225	0	3	0	0	0	300	0	0	40
Lane Group Flow (vph)	103	629	199	1019	1090	0	616	1197	261	65	1054	17
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	10.0	21.5	21.5	24.8	36.0		21.8	47.4	47.4	6.3	31.9	31.9
Effective Green, g (s)	11.0	24.0	24.0	25.8	38.5		22.8	50.8	50.8	7.3	35.3	35.3
Actuated g/C Ratio	0.09	0.20	0.20	0.22	0.32		0.19	0.42	0.42	0.06	0.29	0.29
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	315	710	317	1076	1130		654	2158	672	209	1500	467
v/s Ratio Prot	0.03	0.18		c0.20	c0.31		c0.18	0.24		0.02	c0.21	
v/s Ratio Perm			0.13						0.16			0.01
v/c Ratio	0.33	0.89	0.63	0.95	0.96		0.94	0.55	0.39	0.31	0.70	0.04
Uniform Delay, d1	50.9	46.5	43.8	46.3	39.9		47.8	25.9	23.7	53.8	37.5	30.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	13.4	4.9	16.0	18.8		21.7	0.5	0.7	0.3	1.8	0.1
Delay (s)	51.1	59.9	48.7	62.2	58.7		69.5	26.4	24.5	54.1	39.4	30.1
Level of Service	D	E	D	E	E		E	C	C	D	D	C
Approach Delay (s)		55.0			60.4			37.2			39.7	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	47.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	119.7	Sum of lost time (s)	8.6
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



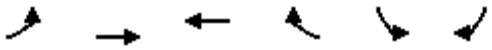
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	14	1170	1747	242	115	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	1232	1839	255	121	8
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	15	1232	1839	255	121	8
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.3	55.7	50.7	75.7	10.0	75.7
Effective Green, g (s)	2.3	58.7	53.7	75.7	11.5	75.7
Actuated g/C Ratio	0.03	0.78	0.71	1.00	0.15	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	54	2744	2510	1583	269	1583
v/s Ratio Prot	0.01	c0.35	c0.52		c0.07	
v/s Ratio Perm				0.16		0.01
v/c Ratio	0.28	0.45	0.73	0.16	0.45	0.01
Uniform Delay, d1	35.9	2.9	6.7	0.0	29.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	1.3	0.2	0.4	0.0
Delay (s)	36.9	3.1	7.9	0.2	29.7	0.0
Level of Service	D	A	A	A	C	A
Approach Delay (s)		3.5	7.0		27.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	8.2
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	1227	2014	21	47	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.98	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3534		1755	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3534		1755	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1292	2120	22	49	7
RTOR Reduction (vph)	0	0	0	0	6	0
Lane Group Flow (vph)	16	1292	2142	0	50	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.2	66.8	61.6		7.0	
Effective Green, g (s)	2.2	69.5	64.3		8.0	
Actuated g/C Ratio	0.03	0.83	0.77		0.10	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	47	2946	2721		168	
v/s Ratio Prot	0.01	c0.37	c0.61		c0.03	
v/s Ratio Perm						
v/c Ratio	0.34	0.44	0.79		0.30	
Uniform Delay, d1	39.9	1.8	5.6		35.1	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.6	0.2	1.8		0.4	
Delay (s)	41.5	2.0	7.4		35.5	
Level of Service	D	A	A		D	
Approach Delay (s)		2.5	7.4		35.5	
Approach LOS		A	A		D	

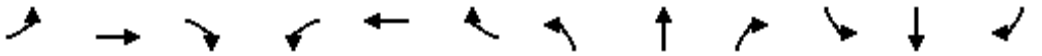
Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	44	1323	2044	1	34	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	5.7	3.0	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1517	1770	1543
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1517	1770	1543
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	1393	2152	1	36	38
RTOR Reduction (vph)	0	0	0	0	0	34
Lane Group Flow (vph)	46	1393	2152	1	36	4
Confl. Peds. (#/hr)				10		10
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.1	73.2	65.1	65.1	9.0	9.0
Effective Green, g (s)	5.1	75.9	67.8	66.1	10.0	10.0
Actuated g/C Ratio	0.05	0.82	0.73	0.71	0.11	0.11
Clearance Time (s)	4.0	6.7	6.7	6.7	4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	4.3	2.0	2.0
Lane Grp Cap (vph)	97	2891	2583	1079	191	166
v/s Ratio Prot	0.03	c0.39	c0.61		c0.02	
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.47	0.48	0.83	0.00	0.19	0.02
Uniform Delay, d1	42.6	2.6	8.7	3.9	37.8	37.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.2	2.6	0.0	0.2	0.0
Delay (s)	43.9	2.8	11.3	3.9	37.9	37.1
Level of Service	D	A	B	A	D	D
Approach Delay (s)		4.1	11.3		37.5	
Approach LOS		A	B		D	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	92.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	1035	152	724	1618	297	248	665	586	385	652	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	2.0	2.7	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	1089	160	762	1703	313	261	700	617	405	686	259
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	77	1089	160	762	1703	313	261	700	617	405	686	259
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	4.8	28.5	120.0	31.2	54.9	120.0	11.7	25.9	120.0	16.0	29.2	120.0
Effective Green, g (s)	5.8	31.5	120.0	32.2	57.9	120.0	12.7	28.9	120.0	17.0	32.2	120.0
Actuated g/C Ratio	0.05	0.26	1.00	0.27	0.48	1.00	0.11	0.24	1.00	0.14	0.27	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		3.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	149	1201	1400	829	2208	1400	327	767	1400	438	855	1400
v/s Ratio Prot	0.02	c0.24		c0.25	0.37		0.08	c0.22		c0.13	0.22	
v/s Ratio Perm			0.11			0.22			0.44			0.19
v/c Ratio	0.52	0.91	0.11	0.92	0.77	0.22	0.80	0.91	0.44	0.92	0.80	0.18
Uniform Delay, d1	55.7	42.8	0.0	42.6	25.6	0.0	52.4	44.3	0.0	50.9	40.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	11.4	0.2	14.7	1.9	0.4	11.9	15.6	1.0	24.9	6.1	0.3
Delay (s)	57.0	54.3	0.2	57.4	27.5	0.4	64.3	60.0	1.0	75.8	47.0	0.3
Level of Service	E	D	A	E	C	A	E	E	A	E	D	A
Approach Delay (s)		47.9			32.7			37.6			46.7	
Approach LOS		D			C			D			D	

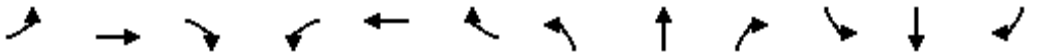
Intersection Summary			
HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1779	229	180	2865	6	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	1.7	1.7
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4969		1770	5085	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4969		1770	5085	1770	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1873	241	189	3016	6	213
RTOR Reduction (vph)	9	0	0	0	0	194
Lane Group Flow (vph)	2105	0	189	3016	6	19
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	81.2		16.7	101.9	9.4	9.4
Effective Green, g (s)	83.2		16.7	103.9	10.7	10.7
Actuated g/C Ratio	0.69		0.14	0.87	0.09	0.09
Clearance Time (s)	5.7		4.0	5.7	3.0	3.0
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	3445		246	4403	158	137
v/s Ratio Prot	0.42		c0.11	c0.59	0.00	
v/s Ratio Perm						c0.01
v/c Ratio	0.61		0.77	0.68	0.04	0.14
Uniform Delay, d1	9.8		49.8	2.7	49.9	50.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		12.2	0.9	0.0	0.2
Delay (s)	10.6		62.0	3.5	50.0	50.6
Level of Service	B		E	A	D	D
Approach Delay (s)	10.6			7.0	50.6	
Approach LOS	B			A	D	

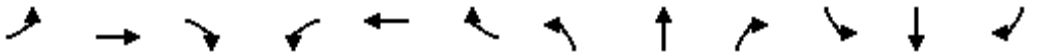
Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



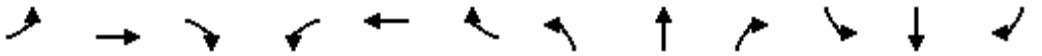
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	406	1475	96	796	1997	85	312	713	474	137	1528	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	6.0	5.7	4.0	6.0	6.0	4.0	4.0	6.4	4.0
Lane Util. Factor	0.97	0.91	1.00	0.94	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	427	1553	101	838	2102	89	328	751	499	144	1608	614
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	427	1553	101	838	2102	89	328	751	499	144	1608	614
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.3	42.3	120.0	19.0	48.3	120.0	9.0	28.7	120.0	8.3	25.6	120.0
Effective Green, g (s)	13.3	42.3	120.0	19.0	48.3	120.0	9.0	28.7	120.0	8.3	25.6	120.0
Actuated g/C Ratio	0.11	0.35	1.00	0.16	0.40	1.00	0.08	0.24	1.00	0.07	0.21	1.00
Clearance Time (s)	5.7	5.7		6.0	5.7		6.0	6.0		4.0	6.4	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	3.7	
Lane Grp Cap (vph)	380	1792	1583	790	2047	1583	257	1216	1583	237	1367	1583
v/s Ratio Prot	c0.12	0.31		0.17	c0.41		c0.10	0.15		0.04	c0.25	
v/s Ratio Perm			0.06			0.06			0.32			c0.39
v/c Ratio	1.12	0.87	0.06	1.06	1.03	0.06	1.28	0.62	0.32	0.61	1.18	0.39
Uniform Delay, d1	53.4	36.2	0.0	50.5	35.9	0.0	55.5	40.8	0.0	54.3	47.2	0.0
Progression Factor	1.00	1.00	1.00	0.86	0.56	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	84.1	5.0	0.1	44.5	24.0	0.0	151.0	1.1	0.5	3.0	87.3	0.7
Delay (s)	137.5	41.2	0.1	87.7	44.1	0.0	206.5	41.9	0.5	57.3	134.5	0.7
Level of Service	F	D	A	F	D	A	F	D	A	E	F	A
Approach Delay (s)		59.0			54.9			63.0			95.1	
Approach LOS		E			D			E			F	

Intersection Summary			
HCM Average Control Delay	67.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.8
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



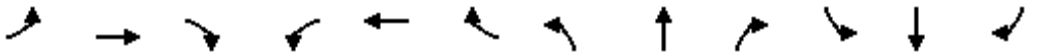
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	1724	119	520	2111	78	274	662	298	212	1236	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0	3.4	3.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	156	1815	125	547	2222	82	288	697	314	223	1301	332
RTOR Reduction (vph)	0	0	57	0	0	0	0	0	0	0	0	118
Lane Group Flow (vph)	156	1815	68	547	2222	82	288	697	314	223	1301	214
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			Free			6
Actuated Green, G (s)	8.4	43.0	43.0	16.0	52.6	120.0	10.0	29.6	120.0	9.0	28.6	28.6
Effective Green, g (s)	9.4	46.0	46.0	19.4	56.0	120.0	11.0	33.0	120.0	10.0	31.6	31.6
Actuated g/C Ratio	0.08	0.38	0.38	0.16	0.47	1.00	0.09	0.28	1.00	0.08	0.26	0.26
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1		2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	269	1949	607	555	2990	1583	315	973	1583	286	1339	417
v/s Ratio Prot	0.05	c0.36		c0.16	0.35		c0.08	0.20		0.06	c0.26	
v/s Ratio Perm			0.04			0.05			0.20			0.14
v/c Ratio	0.58	0.93	0.11	0.99	0.74	0.05	0.91	0.72	0.20	0.78	0.97	0.51
Uniform Delay, d1	53.4	35.5	23.8	50.2	26.1	0.0	54.0	39.3	0.0	53.9	43.8	37.7
Progression Factor	1.40	0.37	0.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	6.9	0.3	34.1	1.7	0.1	29.1	2.8	0.3	11.6	18.2	1.6
Delay (s)	75.9	20.0	1.8	84.3	27.8	0.1	83.1	42.1	0.3	65.5	62.0	39.3
Level of Service	E	C	A	F	C	A	F	D	A	E	E	D
Approach Delay (s)		23.1			37.9			41.1			58.3	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



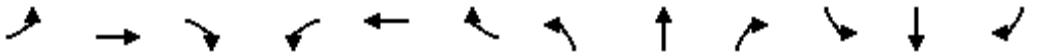
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	2158	30	93	2376	95	328	55	25	108	10	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	2272	32	98	2501	100	345	58	26	114	11	14
RTOR Reduction (vph)	0	0	9	0	0	21	0	0	22	0	0	13
Lane Group Flow (vph)	11	2272	23	98	2501	79	345	58	4	114	11	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.2	82.0	82.0	12.4	93.2	93.2	31.3	20.9	20.9	17.0	5.7	5.7
Effective Green, g (s)	1.2	82.0	82.0	12.4	93.2	93.2	31.3	20.9	20.9	17.0	5.7	5.7
Actuated g/C Ratio	0.01	0.55	0.55	0.08	0.62	0.62	0.21	0.14	0.14	0.11	0.04	0.04
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.5	2.5	2.0	3.1	3.1
Lane Grp Cap (vph)	14	2780	865	146	3159	984	369	260	221	201	71	60
v/s Ratio Prot	0.01	c0.45		0.06	c0.49		c0.19	c0.03		0.06	0.01	
v/s Ratio Perm			0.01			0.05			0.00			0.00
v/c Ratio	0.79	0.82	0.03	0.67	0.79	0.08	0.93	0.22	0.02	0.57	0.15	0.01
Uniform Delay, d1	74.3	27.9	15.6	66.8	21.2	11.3	58.3	57.3	55.7	63.0	69.8	69.4
Progression Factor	1.00	1.00	1.00	0.78	0.70	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	123.8	2.8	0.1	0.9	0.1	0.0	30.2	0.3	0.0	2.2	1.1	0.1
Delay (s)	198.1	30.7	15.7	53.1	14.9	7.2	88.5	57.7	55.7	65.2	70.9	69.5
Level of Service	F	C	B	D	B	A	F	E	E	E	E	E
Approach Delay (s)		31.2			16.0			82.4			66.1	
Approach LOS		C			B			F			E	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



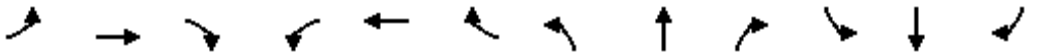
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	12	35	277	26	71	88	1419	194	98	1015	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	1490		1593	1492		1593	4577	1425	1593	3185	1425
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1593	1490		1593	1492		1593	4577	1425	1593	3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	13	37	292	27	75	93	1494	204	103	1068	1
RTOR Reduction (vph)	0	33	0	0	54	0	0	0	107	0	0	1
Lane Group Flow (vph)	6	17	0	292	48	0	93	1494	97	103	1068	0
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	0.6	8.1		18.7	26.2		9.4	44.7	44.7	10.5	44.8	44.8
Effective Green, g (s)	1.6	9.6		19.7	27.7		10.4	47.7	47.7	11.5	47.8	47.8
Actuated g/C Ratio	0.02	0.10		0.20	0.28		0.10	0.48	0.48	0.12	0.48	0.48
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	25	143		314	413		166	2183	680	183	1522	681
v/s Ratio Prot	0.00	0.01		c0.18	c0.03		0.06	0.33		c0.06	c0.34	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.24	0.12		0.93	0.12		0.56	0.68	0.14	0.56	0.70	0.00
Uniform Delay, d1	48.6	41.3		39.5	27.0		42.6	20.3	14.7	41.9	20.5	13.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.3		32.2	0.1		2.6	1.8	0.4	2.4	1.7	0.0
Delay (s)	50.4	41.6		71.7	27.1		45.2	22.1	15.1	44.2	22.2	13.6
Level of Service	D	D		E	C		D	C	B	D	C	B
Approach Delay (s)		42.6			60.1			22.5			24.1	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	5.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



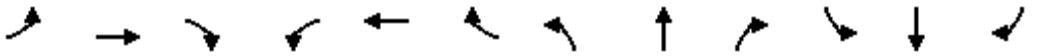
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	3	9	146	9	55	23	1318	61	49	947	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	3	9	154	9	58	24	1387	64	52	997	7
RTOR Reduction (vph)	0	0	8	0	0	48	0	0	33	0	0	3
Lane Group Flow (vph)	4	3	1	154	9	10	24	1387	31	52	997	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	4.2	4.2	8.4	12.1	12.1	0.7	32.0	32.0	2.3	33.6	33.6
Effective Green, g (s)	0.5	4.2	4.2	8.4	12.1	12.1	0.7	32.0	32.0	2.3	33.6	33.6
Actuated g/C Ratio	0.01	0.06	0.06	0.13	0.18	0.18	0.01	0.48	0.48	0.03	0.50	0.50
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	222	99	222	640	286	19	2432	757	61	2554	795
v/s Ratio Prot	0.00	0.00		c0.09	0.00		0.01	c0.27		c0.03	0.20	
v/s Ratio Perm			0.00			c0.01			0.02			0.00
v/c Ratio	0.31	0.01	0.01	0.69	0.01	0.04	1.26	0.57	0.04	0.85	0.39	0.00
Uniform Delay, d1	33.0	29.4	29.4	28.0	22.5	22.6	33.1	12.5	9.3	32.1	10.3	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.0	0.0	0.0	9.0	0.0	0.1	298.7	0.3	0.0	65.3	0.1	0.0
Delay (s)	46.0	29.4	29.4	37.0	22.5	22.6	331.8	12.8	9.3	97.4	10.4	8.3
Level of Service	D	C	C	D	C	C	F	B	A	F	B	A
Approach Delay (s)		33.6			32.7			17.9			14.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	66.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



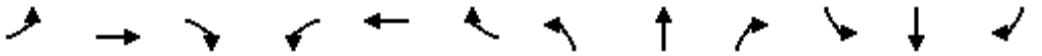
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	80	6	1	230	34	4	1	3	14	4	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	84	6	1	242	36	4	1	3	15	4	2
RTOR Reduction (vph)	0	0	5	0	0	28	0	0	2	0	0	1
Lane Group Flow (vph)	1	84	1	1	242	8	4	1	1	15	4	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	9.2	9.2	0.4	9.2	9.2	0.4	11.1	11.1	0.9	11.6	11.6
Effective Green, g (s)	0.4	9.2	9.2	0.4	9.2	9.2	0.4	11.1	11.1	0.9	11.6	11.6
Actuated g/C Ratio	0.01	0.22	0.22	0.01	0.22	0.22	0.01	0.27	0.27	0.02	0.28	0.28
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	17	783	350	17	783	350	17	497	422	38	519	441
v/s Ratio Prot	c0.00	0.02		0.00	c0.07		0.00	0.00		c0.01	c0.00	
v/s Ratio Perm			0.00			0.01			0.00			0.00
v/c Ratio	0.06	0.11	0.00	0.06	0.31	0.02	0.24	0.00	0.00	0.39	0.01	0.00
Uniform Delay, d1	20.4	12.9	12.6	20.4	13.5	12.7	20.4	11.2	11.2	20.1	10.8	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	0.0	1.5	0.2	0.0	7.0	0.0	0.0	6.6	0.0	0.0
Delay (s)	21.9	13.0	12.6	21.9	13.8	12.7	27.5	11.2	11.2	26.7	10.8	10.8
Level of Service	C	B	B	C	B	B	C	B	B	C	B	B
Approach Delay (s)		13.1			13.7			19.3			22.2	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



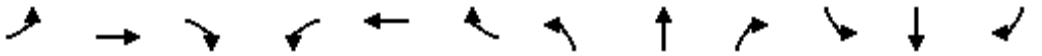
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	63	9	537	206	29	40	1316	241	48	842	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.3	4.3	4.0	3.3	4.3
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	66	9	565	217	31	42	1385	254	51	886	53
RTOR Reduction (vph)	0	0	8	0	0	17	0	0	115	0	0	36
Lane Group Flow (vph)	19	66	1	565	217	14	42	1385	139	51	886	17
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.4	11.6	11.6	39.9	50.1	50.1	3.9	35.7	35.7	3.0	34.8	34.8
Effective Green, g (s)	2.4	12.6	12.6	40.9	51.1	51.1	4.9	37.7	36.7	4.0	36.8	35.8
Actuated g/C Ratio	0.02	0.11	0.11	0.37	0.46	0.46	0.04	0.34	0.33	0.04	0.33	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	38	404	181	655	1637	732	78	1735	526	64	1693	513
v/s Ratio Prot	0.01	c0.02		c0.32	0.06		0.02	c0.27		c0.03	0.17	
v/s Ratio Perm			0.00			0.01			0.09			0.01
v/c Ratio	0.50	0.16	0.01	0.86	0.13	0.02	0.54	0.80	0.26	0.80	0.52	0.03
Uniform Delay, d1	53.5	44.2	43.4	32.2	17.0	16.1	51.7	33.0	27.0	52.8	29.8	25.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.0	0.2	0.0	11.3	0.0	0.0	7.0	2.7	0.3	48.1	0.3	0.0
Delay (s)	63.4	44.4	43.4	43.5	17.0	16.1	58.7	35.6	27.3	101.0	30.1	25.6
Level of Service	E	D	D	D	B	B	E	D	C	F	C	C
Approach Delay (s)		48.1			35.4			34.9			33.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	35.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	110.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



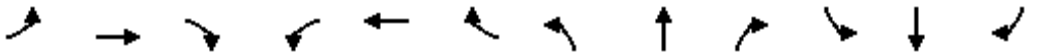
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	357	0	27	772	0	17	0	1	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0		5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00		1.00	
Frt	1.00	1.00		1.00	1.00		1.00		0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00		1.00	
Satd. Flow (prot)	1770	3539		1770	3539		1770		1583		1863	
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00		1.00	
Satd. Flow (perm)	1770	3539		1770	3539		1770		1583		1863	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	376	0	28	813	0	18	0	1	0	2	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	2	376	0	28	813	0	18	0	0	0	2	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	17.4		0.5	17.5		0.4		14.0		8.6	
Effective Green, g (s)	0.4	17.4		0.5	17.5		0.4		14.0		8.6	
Actuated g/C Ratio	0.01	0.37		0.01	0.37		0.01		0.30		0.18	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0		5.0		5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	15	1313		19	1321		15		473		342	
v/s Ratio Prot	0.00	0.11		c0.02	c0.23		c0.01				c0.00	
v/s Ratio Perm									0.00			
v/c Ratio	0.13	0.29		1.47	0.62		1.20		0.00		0.01	
Uniform Delay, d1	23.1	10.4		23.2	12.0		23.2		11.5		15.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2	4.0	0.1		378.9	0.9		303.5		0.0		0.0	
Delay (s)	27.1	10.5		402.1	12.8		326.8		11.5		15.7	
Level of Service	C	B		F	B		F		B		B	
Approach Delay (s)		10.6			25.8			310.2			15.7	
Approach LOS		B			C			F			B	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



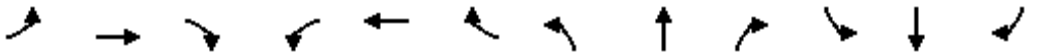
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	256	46	44	856	6	71	78	12	3	52	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	269	48	46	901	6	75	82	13	3	55	43
RTOR Reduction (vph)	0	0	30	0	0	4	0	0	10	0	0	33
Lane Group Flow (vph)	77	269	18	46	901	2	75	82	3	3	55	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.0	18.9	18.9	1.3	17.2	17.2	2.1	13.1	13.1	0.6	11.6	11.6
Effective Green, g (s)	4.0	20.9	19.9	2.3	19.2	18.2	3.1	15.1	14.1	1.6	13.6	12.6
Actuated g/C Ratio	0.07	0.39	0.37	0.04	0.36	0.34	0.06	0.28	0.26	0.03	0.25	0.23
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	131	1372	584	76	1261	535	102	522	414	53	470	370
v/s Ratio Prot	c0.04	0.08		0.03	c0.25		c0.04	c0.04		0.00	0.03	
v/s Ratio Perm			0.01			0.00			0.00			0.01
v/c Ratio	0.59	0.20	0.03	0.61	0.71	0.00	0.74	0.16	0.01	0.06	0.12	0.03
Uniform Delay, d1	24.2	10.9	10.8	25.4	15.0	11.8	25.0	14.6	14.7	25.4	15.5	15.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	0.1	0.0	12.9	1.9	0.0	23.8	0.1	0.0	0.4	0.1	0.0
Delay (s)	30.7	11.0	10.9	38.2	16.9	11.8	48.8	14.7	14.7	25.9	15.6	16.0
Level of Service	C	B	B	D	B	B	D	B	B	C	B	B
Approach Delay (s)		14.8			17.9			29.8			16.1	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	53.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



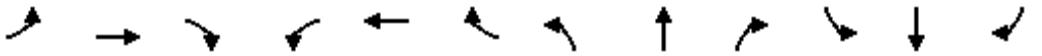
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	279	18	55	964	0	13	0	37	0	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0		5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00		1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539		1770		1583		1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539		1770		1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	294	19	58	1015	0	14	0	39	0	1	5
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	28	0	0	4
Lane Group Flow (vph)	2	294	7	58	1015	0	14	0	11	0	1	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	19.3	19.3	2.4	21.3		0.4		14.0		8.6	8.6
Effective Green, g (s)	0.4	19.3	19.3	2.4	21.3		0.4		14.0		8.6	8.6
Actuated g/C Ratio	0.01	0.38	0.38	0.05	0.42		0.01		0.28		0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0		5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	14	1347	603	84	1487		14		437		316	269
v/s Ratio Prot	0.00	0.08		c0.03	c0.29		c0.01				0.00	
v/s Ratio Perm			0.00						c0.01			0.00
v/c Ratio	0.14	0.22	0.01	0.69	0.68		1.00		0.02		0.00	0.00
Uniform Delay, d1	25.0	10.6	9.8	23.8	12.0		25.2		13.4		17.5	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2	4.7	0.1	0.0	21.7	1.3		240.5		0.0		0.0	0.0
Delay (s)	29.6	10.7	9.8	45.5	13.3		265.7		13.4		17.5	17.5
Level of Service	C	B	A	D	B		F		B		B	B
Approach Delay (s)		10.8			15.0			80.0			17.5	
Approach LOS		B			B			F			B	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	50.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



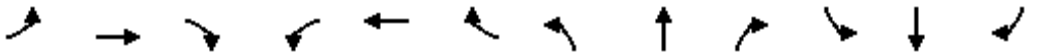
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	207	48	82	882	2	74	145	88	4	71	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	218	51	86	928	2	78	153	93	4	75	66
RTOR Reduction (vph)	0	0	31	0	0	1	0	0	70	0	0	52
Lane Group Flow (vph)	64	218	20	86	928	1	78	153	23	4	75	14
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.8	21.9	21.9	2.8	21.9	21.9	2.8	13.7	13.7	0.6	11.5	11.5
Effective Green, g (s)	3.8	23.9	22.9	3.8	23.9	22.9	3.8	15.7	14.7	1.6	13.5	12.5
Actuated g/C Ratio	0.06	0.41	0.39	0.06	0.41	0.39	0.06	0.27	0.25	0.03	0.23	0.21
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	1434	614	114	1434	614	114	496	394	48	426	335
v/s Ratio Prot	0.04	0.06		c0.05	c0.26		c0.04	c0.08		0.00	0.04	
v/s Ratio Perm			0.01			0.00			0.01			0.01
v/c Ratio	0.56	0.15	0.03	0.75	0.65	0.00	0.68	0.31	0.06	0.08	0.18	0.04
Uniform Delay, d1	26.8	11.1	11.2	27.1	14.2	11.0	27.0	17.3	16.9	28.0	18.3	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.0	0.0	24.3	1.0	0.0	15.7	0.4	0.1	0.7	0.2	0.1
Delay (s)	33.0	11.2	11.2	51.4	15.2	11.1	42.7	17.7	16.9	28.7	18.5	18.5
Level of Service	C	B	B	D	B	B	D	B	B	C	B	B
Approach Delay (s)		15.4			18.2			23.5			18.8	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



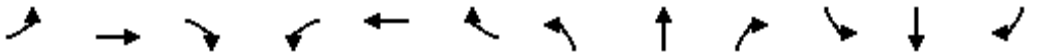
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	303	0	15	28	0	643	53	1599	25	227	1241	1001
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97		1.00	1.00		1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583	1770		1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583	1770		1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	319	0	16	29	0	677	56	1683	26	239	1306	1054
RTOR Reduction (vph)	0	0	15	0	0	22	0	0	9	0	0	248
Lane Group Flow (vph)	319	0	1	29	0	655	56	1683	17	239	1306	806
Turn Type	Prot		custom	Prot		Over	Prot		Perm	Prot		Perm
Protected Phases	7		4	3		1	5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	19.1		11.7	2.4		58.1	5.5	50.0	50.0	58.1	102.6	102.6
Effective Green, g (s)	19.1		11.7	2.4		58.1	5.5	50.0	50.0	58.1	102.6	102.6
Actuated g/C Ratio	0.13		0.08	0.02		0.41	0.04	0.35	0.35	0.41	0.72	0.72
Clearance Time (s)	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	461		130	30		647	68	1788	557	723	3669	1142
v/s Ratio Prot	c0.09		0.00	0.02		c0.41	0.03	c0.33		0.14	0.26	
v/s Ratio Perm									0.01			0.51
v/c Ratio	0.69		0.01	0.97		1.01	0.82	0.94	0.03	0.33	0.36	0.71
Uniform Delay, d1	58.7		59.9	69.9		42.0	67.9	44.7	30.2	28.8	7.4	11.2
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5		0.0	149.0		38.5	52.8	10.5	0.0	0.3	0.1	2.0
Delay (s)	63.2		60.0	218.8		80.6	120.7	55.1	30.2	29.0	7.5	13.2
Level of Service	E		E	F		F	F	E	C	C	A	B
Approach Delay (s)		63.0			86.3			56.8			11.8	
Approach LOS		E			F			E			B	

Intersection Summary			
HCM Average Control Delay	39.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	142.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	91.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



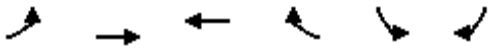
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	1450	28	71	1310	43	0	25	12	141	11	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	4.0	4.0	2.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	1526	29	75	1379	45	0	26	13	148	12	7
RTOR Reduction (vph)	0	0	15	0	0	24	0	0	11	0	0	5
Lane Group Flow (vph)	17	1526	14	75	1379	21	0	26	2	148	12	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.6	29.4	29.4	3.1	31.9	31.9		10.3	10.3	8.2	23.5	23.5
Effective Green, g (s)	1.6	32.4	30.4	4.1	34.9	32.9		11.3	11.3	9.2	24.5	24.5
Actuated g/C Ratio	0.02	0.46	0.43	0.06	0.49	0.46		0.16	0.16	0.13	0.35	0.35
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	40	2320	678	102	2500	734		297	252	229	643	546
v/s Ratio Prot	0.01	c0.30		c0.04	0.27			c0.01		c0.08	0.01	
v/s Ratio Perm			0.01			0.01			0.00			0.00
v/c Ratio	0.42	0.66	0.02	0.74	0.55	0.03		0.09	0.01	0.65	0.02	0.00
Uniform Delay, d1	34.2	15.0	11.7	32.9	12.6	10.4		25.5	25.1	29.4	15.3	15.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	0.7	0.0	23.8	0.3	0.0		0.1	0.0	6.1	0.0	0.0
Delay (s)	41.4	15.7	11.7	56.7	12.9	10.4		25.6	25.1	35.5	15.3	15.3
Level of Service	D	B	B	E	B	B		C	C	D	B	B
Approach Delay (s)		15.9			15.0			25.4			33.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



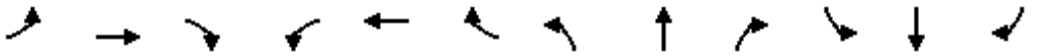
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	479	1188	6	494	1035	68	11	961	488	54	687	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	4.0	4.0	2.0	4.0	4.0	2.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	504	1251	6	520	1089	72	12	1012	514	57	723	374
RTOR Reduction (vph)	0	0	3	0	0	49	0	0	244	0	0	239
Lane Group Flow (vph)	504	1251	3	520	1089	23	12	1012	270	57	723	135
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.2	33.4	33.4	18.3	33.5	33.5	0.7	35.4	35.4	3.0	37.7	37.7
Effective Green, g (s)	19.2	36.4	34.4	19.3	36.5	34.5	1.7	38.4	37.4	4.0	39.7	39.7
Actuated g/C Ratio	0.17	0.33	0.31	0.18	0.33	0.31	0.02	0.35	0.34	0.04	0.36	0.36
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	599	1681	495	602	1686	496	53	1774	538	125	1834	571
v/s Ratio Prot	0.15	c0.25		c0.15	0.21		0.00	c0.20		c0.02	0.14	
v/s Ratio Perm			0.00			0.01			0.17			0.09
v/c Ratio	0.84	0.74	0.01	0.86	0.65	0.05	0.23	0.57	0.50	0.46	0.39	0.24
Uniform Delay, d1	44.0	32.7	26.1	44.1	31.3	26.3	53.6	29.1	28.9	52.0	26.2	24.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.4	1.8	0.0	12.3	0.9	0.0	2.2	0.4	0.7	2.6	0.1	0.2
Delay (s)	54.3	34.5	26.1	56.4	32.2	26.4	55.7	29.6	29.7	54.6	26.4	24.8
Level of Service	D	C	C	E	C	C	E	C	C	D	C	C
Approach Delay (s)		40.2			39.4			29.8			27.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	34.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



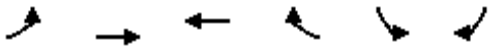
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	217	1333	1303	86	129	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	228	1403	1372	91	136	389
RTOR Reduction (vph)	0	0	0	55	0	316
Lane Group Flow (vph)	228	1403	1372	36	136	73
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	13.6	45.4	26.8	26.8	12.7	12.7
Effective Green, g (s)	13.6	45.4	26.8	26.8	12.7	12.7
Actuated g/C Ratio	0.20	0.67	0.39	0.39	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	3390	2001	623	330	295
v/s Ratio Prot	c0.13	0.28	c0.27		c0.08	
v/s Ratio Perm				0.02		0.05
v/c Ratio	0.65	0.41	0.69	0.06	0.41	0.25
Uniform Delay, d1	25.0	5.2	17.2	12.8	24.4	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.1	1.0	0.0	0.8	0.4
Delay (s)	29.1	5.3	18.1	12.9	25.2	24.1
Level of Service	C	A	B	B	C	C
Approach Delay (s)		8.6	17.8		24.4	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



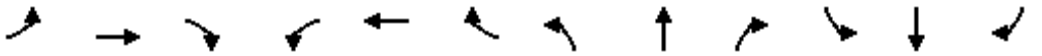
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	580	856	26	416	970	232	14	738	290	158	775	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	4.0	3.0	5.0	4.0	2.0	4.0	4.0	2.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	611	901	27	438	1021	244	15	777	305	166	816	426
RTOR Reduction (vph)	0	0	18	0	0	71	0	0	219	0	0	288
Lane Group Flow (vph)	611	901	9	438	1021	173	15	777	86	166	816	138
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.1	34.1	34.1	17.8	30.8	30.8	1.4	29.5	29.5	6.1	34.2	34.2
Effective Green, g (s)	22.1	37.1	35.1	18.8	33.8	31.8	2.4	32.5	30.5	7.1	37.2	35.2
Actuated g/C Ratio	0.20	0.34	0.32	0.17	0.31	0.29	0.02	0.30	0.28	0.07	0.34	0.32
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	699	1739	512	595	1584	464	76	1523	445	225	1743	514
v/s Ratio Prot	c0.18	c0.18		0.13	c0.20		0.00	c0.15		c0.05	0.16	
v/s Ratio Perm			0.01			0.11			0.05			0.09
v/c Ratio	0.87	0.52	0.02	0.74	0.64	0.37	0.20	0.51	0.19	0.74	0.47	0.27
Uniform Delay, d1	41.9	28.6	25.0	42.5	32.2	30.4	52.1	31.4	29.6	49.8	27.9	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7	0.3	0.0	4.7	0.9	0.5	1.3	0.3	0.2	11.9	0.2	0.3
Delay (s)	53.6	28.8	25.0	47.2	33.1	30.9	53.4	31.7	29.9	61.7	28.1	27.4
Level of Service	D	C	C	D	C	C	D	C	C	E	C	C
Approach Delay (s)		38.6			36.4			31.5			31.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	34.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	108.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



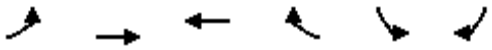
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1304	1455	88	0	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0		5.0
Lane Util. Factor		0.91	0.91	1.00		1.00
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		5085	5085	1583		1583
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		5085	5085	1583		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1373	1532	93	0	172
RTOR Reduction (vph)	0	0	0	40	0	134
Lane Group Flow (vph)	0	1373	1532	53	0	38
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)		25.0	25.0	25.0		9.2
Effective Green, g (s)		25.0	25.0	25.0		9.2
Actuated g/C Ratio		0.57	0.57	0.57		0.21
Clearance Time (s)		5.0	5.0	5.0		5.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		2876	2876	895		329
v/s Ratio Prot		0.27	c0.30			
v/s Ratio Perm				0.03		c0.02
v/c Ratio		0.48	0.53	0.06		0.12
Uniform Delay, d1		5.7	6.0	4.3		14.2
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.2	0.0		0.2
Delay (s)		5.8	6.2	4.3		14.4
Level of Service		A	A	A		B
Approach Delay (s)		5.8	6.1		14.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	44.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



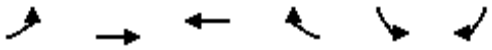
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	1161	118	25	1416	200	102	114	11	104	73	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	1222	124	26	1491	211	107	120	12	109	77	25
RTOR Reduction (vph)	0	0	72	0	0	117	0	0	10	0	0	20
Lane Group Flow (vph)	25	1222	52	26	1491	94	107	120	2	109	77	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.3	27.2	27.2	1.3	27.2	27.2	6.2	12.1	12.1	6.2	12.1	12.1
Effective Green, g (s)	2.3	29.2	28.2	2.3	29.2	28.2	7.2	14.1	13.1	7.2	14.1	13.1
Actuated g/C Ratio	0.03	0.44	0.42	0.03	0.44	0.42	0.11	0.21	0.20	0.11	0.21	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	61	2223	668	61	2223	668	191	393	310	191	393	310
v/s Ratio Prot	0.01	0.24		c0.01	c0.29		0.06	c0.06		c0.06	0.04	
v/s Ratio Perm			0.03			0.06			0.00			0.00
v/c Ratio	0.41	0.55	0.08	0.43	0.67	0.14	0.56	0.31	0.01	0.57	0.20	0.02
Uniform Delay, d1	31.6	13.9	11.5	31.6	15.0	11.9	28.3	22.2	21.6	28.3	21.7	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	0.3	0.1	4.7	0.8	0.1	3.7	0.4	0.0	4.1	0.2	0.0
Delay (s)	36.0	14.2	11.6	36.3	15.8	12.0	32.0	22.7	21.6	32.4	21.9	21.7
Level of Service	D	B	B	D	B	B	C	C	C	C	C	C
Approach Delay (s)		14.4			15.6			26.8			27.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



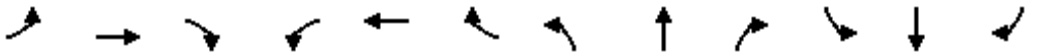
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	153	1123	1377	124	205	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	161	1182	1449	131	216	278
RTOR Reduction (vph)	0	0	0	83	0	211
Lane Group Flow (vph)	161	1182	1449	48	216	67
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.7	33.7	21.0	21.0	14.0	14.0
Effective Green, g (s)	7.7	33.7	21.0	21.0	14.0	14.0
Actuated g/C Ratio	0.13	0.58	0.36	0.36	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	2970	1851	576	429	384
v/s Ratio Prot	c0.09	0.23	c0.28		c0.12	
v/s Ratio Perm				0.03		0.04
v/c Ratio	0.68	0.40	0.78	0.08	0.50	0.18
Uniform Delay, d1	23.8	6.5	16.3	12.0	18.9	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9	0.1	2.2	0.1	0.9	0.2
Delay (s)	31.7	6.6	18.6	12.1	19.8	17.5
Level of Service	C	A	B	B	B	B
Approach Delay (s)		9.6	18.0		18.5	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	86	1243	1492	79	42	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	91	1308	1571	83	44	9
RTOR Reduction (vph)	0	0	0	45	0	7
Lane Group Flow (vph)	91	1308	1571	38	44	2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.8	33.6	24.8	24.8	9.9	9.9
Effective Green, g (s)	3.8	33.6	24.8	24.8	9.9	9.9
Actuated g/C Ratio	0.07	0.63	0.46	0.46	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	126	3194	2357	734	328	293
v/s Ratio Prot	c0.05	0.26	c0.31		c0.02	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.72	0.41	0.67	0.05	0.13	0.01
Uniform Delay, d1	24.3	5.0	11.1	7.9	18.2	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.4	0.1	0.7	0.0	0.2	0.0
Delay (s)	42.7	5.1	11.9	7.9	18.4	17.8
Level of Service	D	A	B	A	B	B
Approach Delay (s)		7.5	11.7		18.3	
Approach LOS		A	B		B	

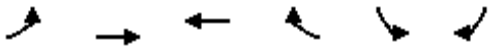
Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	1055	111	742	1391	254	165	876	434	373	828	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	3.0	3.7	3.7	3.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	209	1111	117	781	1464	267	174	922	457	393	872	49
RTOR Reduction (vph)	0	0	86	0	0	136	0	0	281	0	0	28
Lane Group Flow (vph)	209	1111	31	781	1464	131	174	922	177	393	872	21
Heavy Vehicles (%)	2%	4%	2%	2%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.4	33.0	33.0	28.0	49.6	49.6	8.9	30.0	30.0	15.0	36.1	36.1
Effective Green, g (s)	12.4	36.0	34.0	30.0	51.9	51.9	10.9	32.0	32.0	16.0	38.1	38.1
Actuated g/C Ratio	0.10	0.28	0.27	0.23	0.41	0.41	0.09	0.25	0.25	0.12	0.30	0.30
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	4.7	4.7	3.0	4.8	4.8	3.0	4.8	4.8	3.0	4.7	4.7
Lane Grp Cap (vph)	333	1403	420	805	2022	630	292	1271	396	429	1514	471
v/s Ratio Prot	0.06	c0.22		c0.23	0.29		0.05	c0.18		c0.11	0.17	
v/s Ratio Perm			0.02			0.08			0.11			0.01
v/c Ratio	0.63	0.79	0.07	0.97	0.72	0.21	0.60	0.73	0.45	0.92	0.58	0.04
Uniform Delay, d1	55.6	42.5	35.2	48.6	32.0	24.7	56.4	44.0	40.5	55.3	38.1	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	3.6	0.1	24.5	1.6	0.3	3.3	2.5	1.6	24.0	0.8	0.1
Delay (s)	59.3	46.1	35.3	73.1	33.6	25.0	59.7	46.5	42.1	79.3	38.9	32.1
Level of Service	E	D	D	E	C	C	E	D	D	E	D	C
Approach Delay (s)		47.1			45.0			46.7			50.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	46.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

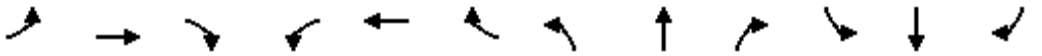
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	368	1416	1424	113	55	697
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1478	1770	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	387	1491	1499	119	58	734
RTOR Reduction (vph)	0	0	0	61	0	159
Lane Group Flow (vph)	387	1491	1499	58	58	575
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	8.6	39.8	27.2	27.2	4.7	13.3
Effective Green, g (s)	9.6	42.8	30.2	30.2	5.7	15.3
Actuated g/C Ratio	0.16	0.69	0.49	0.49	0.09	0.25
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	534	2455	1732	723	164	827
v/s Ratio Prot	0.11	0.42	c0.42		0.03	c0.11
v/s Ratio Perm				0.04		0.10
v/c Ratio	0.72	0.61	0.87	0.08	0.35	0.69
Uniform Delay, d1	24.8	5.0	14.0	8.4	26.3	21.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.5	5.0	0.1	0.5	2.1
Delay (s)	28.9	5.5	19.0	8.4	26.8	23.1
Level of Service	C	A	B	A	C	C
Approach Delay (s)		10.3	18.2		23.4	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	13.2
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

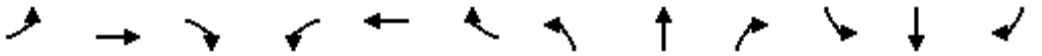
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	510	868	81	540	959	227	60	0	192	164	0	637
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0	5.0	2.0	4.0	3.0	2.0		3.0	3.7		2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.99	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1527	1770	3539	1562	1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1527	1770	3539	1562	1770		1583	1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	537	914	85	568	1009	239	63	0	202	173	0	671
RTOR Reduction (vph)	0	0	56	0	0	0	0	0	178	0	0	0
Lane Group Flow (vph)	537	914	29	568	1009	239	63	0	24	173	0	671
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot		Perm	Prot		Free	Prot		custom	Prot		Free
Protected Phases	7	4		3	8		5			6		
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	33.1	32.1	32.1	35.1	34.1	108.9	11.7		11.7	10.3		108.9
Effective Green, g (s)	35.1	34.1	33.1	37.1	36.1	108.9	13.7		12.7	12.3		108.9
Actuated g/C Ratio	0.32	0.31	0.30	0.34	0.33	1.00	0.13		0.12	0.11		1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0		4.0	5.7		
Vehicle Extension (s)	2.0	4.8	4.8	2.0	4.8		2.0		2.0	2.0		
Lane Grp Cap (vph)	570	1108	464	603	1173	1562	223		185	200		1583
v/s Ratio Prot	c0.30	0.26		c0.32	0.29		0.04			c0.10		
v/s Ratio Perm			0.02			0.15			0.01			c0.42
v/c Ratio	0.94	0.82	0.06	0.94	0.86	0.15	0.28		0.13	0.86		0.42
Uniform Delay, d1	35.9	34.6	26.9	34.9	34.0	0.0	43.1		43.1	47.5		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	23.9	5.7	0.1	23.0	7.2	0.2	0.3		0.1	29.1		0.8
Delay (s)	59.8	40.3	27.0	57.8	41.2	0.2	43.4		43.2	76.6		0.8
Level of Service	E	D	C	E	D	A	D		D	E		A
Approach Delay (s)		46.4			41.0			43.3			16.4	
Approach LOS		D			D			D			B	

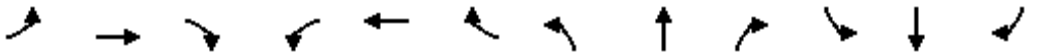
Intersection Summary			
HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	7.7
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	335	474	89	610	142	834	1507	89	149	1753	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	263	353	499	94	642	149	878	1586	94	157	1845	282
RTOR Reduction (vph)	0	0	365	0	0	95	0	0	46	0	0	0
Lane Group Flow (vph)	263	353	134	94	642	54	878	1586	48	157	1845	282
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	10.8	20.3	20.3	7.7	18.2	18.2	33.0	57.9	57.9	14.1	39.0	120.0
Effective Green, g (s)	11.8	23.3	23.3	8.7	20.7	20.7	34.0	60.9	60.9	15.1	42.0	120.0
Actuated g/C Ratio	0.10	0.19	0.19	0.07	0.17	0.17	0.28	0.51	0.51	0.13	0.35	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	338	687	307	128	877	273	973	2581	803	223	2243	1583
v/s Ratio Prot	c0.08	0.10		0.05	c0.13		c0.26	0.31		0.09	c0.29	
v/s Ratio Perm			0.08			0.03			0.03			0.18
v/c Ratio	0.78	0.51	0.44	0.73	0.73	0.20	0.90	0.61	0.06	0.70	0.82	0.18
Uniform Delay, d1	52.8	43.3	42.6	54.5	47.0	42.5	41.4	21.1	15.0	50.3	35.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.9	1.1	1.7	17.0	3.9	0.7	11.4	1.1	0.1	8.0	2.7	0.2
Delay (s)	62.7	44.4	44.3	71.5	50.9	43.3	52.8	22.3	15.1	58.3	38.3	0.2
Level of Service	E	D	D	E	D	D	D	C	B	E	D	A
Approach Delay (s)		48.6			51.8			32.5			35.0	
Approach LOS		D			D			C			C	

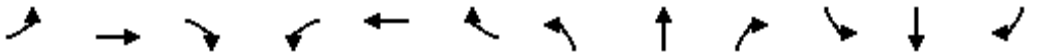
Intersection Summary			
HCM Average Control Delay	38.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	376	190	611	124	636	65	776	400	448	1210	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0	5.0	3.0	2.6	5.0	5.0	2.6	3.0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1562	3433	1863	1558	1770	3539	1570	3433	3539	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1562	3433	1863	1558	1770	3539	1570	3433	3539	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	396	200	643	131	669	68	817	421	472	1274	6
RTOR Reduction (vph)	0	0	0	0	0	99	0	0	36	0	0	0
Lane Group Flow (vph)	54	396	200	643	131	570	68	817	385	472	1274	6
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		Free
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			Free			8			2			Free
Actuated Green, G (s)	7.5	24.8	110.8	23.3	40.6	56.6	4.8	26.7	50.0	16.0	38.9	110.8
Effective Green, g (s)	8.5	24.8	110.8	23.3	40.6	56.6	5.8	30.1	50.0	16.0	42.3	110.8
Actuated g/C Ratio	0.08	0.22	1.00	0.21	0.37	0.51	0.05	0.27	0.45	0.14	0.38	1.00
Clearance Time (s)	4.0	4.0		5.0	5.0	5.0	4.0	6.0	5.0	5.0	6.0	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	3.9	3.0	3.0	3.9	
Lane Grp Cap (vph)	136	417	1562	722	683	866	93	961	708	496	1351	1548
v/s Ratio Prot	0.03	c0.21		c0.19	0.07	0.09	0.04	0.23	0.11	c0.14	c0.36	
v/s Ratio Perm			0.13			0.27			0.13			0.00
v/c Ratio	0.40	0.95	0.13	0.89	0.19	0.66	0.73	0.85	0.54	0.95	0.94	0.00
Uniform Delay, d1	48.7	42.4	0.0	42.5	23.9	20.0	51.7	38.2	22.1	47.0	33.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	30.8	0.2	13.2	0.1	1.8	22.2	7.5	0.9	28.5	13.3	0.0
Delay (s)	49.4	73.2	0.2	55.7	24.1	21.8	74.0	45.7	23.0	75.5	46.4	0.0
Level of Service	D	E	A	E	C	C	E	D	C	E	D	A
Approach Delay (s)		48.7			37.1			39.9			54.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	45.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

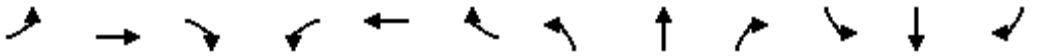
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	753	14	48	709	545	1	628	41	410	1188	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	4.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1556	3433	3539	1562	3433	3539	1562	3433	3539	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1556	3433	3539	1562	3433	3539	1562	3433	3539	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	793	15	51	746	574	1	661	43	432	1251	148
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	0	61
Lane Group Flow (vph)	59	793	5	51	746	574	1	661	43	432	1251	87
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	3		4	8		5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)	7.5	25.9	25.9	9.6	27.0	95.9	1.4	28.9	95.9	13.5	41.0	41.0
Effective Green, g (s)	8.5	26.9	26.9	10.6	28.0	95.9	2.4	29.9	95.9	14.5	42.0	42.0
Actuated g/C Ratio	0.09	0.28	0.28	0.11	0.29	1.00	0.03	0.31	1.00	0.15	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	5.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	3.0		2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)	304	993	436	379	1033	1562	86	1103	1562	519	1550	680
v/s Ratio Prot	0.02	c0.22		0.01	c0.21		0.00	0.19		c0.13	c0.35	
v/s Ratio Perm			0.00			0.37			0.03			0.06
v/c Ratio	0.19	0.80	0.01	0.13	0.72	0.37	0.01	0.60	0.03	0.83	0.81	0.13
Uniform Delay, d1	40.5	32.0	24.9	38.5	30.5	0.0	45.6	27.9	0.0	39.5	23.4	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	4.3	0.0	0.1	2.5	0.7	0.0	1.3	0.0	10.5	3.6	0.2
Delay (s)	40.6	36.2	24.9	38.6	33.0	0.7	45.6	29.2	0.0	50.0	27.0	16.2
Level of Service	D	D	C	D	C	A	D	C	A	D	C	B
Approach Delay (s)		36.3			19.7			27.4			31.6	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



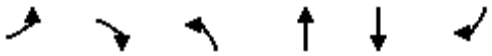
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	4	75	32	7	2	129	1249	22	0	1190	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00		0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85		1.00	
Flt Protected		0.97	1.00		0.96		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1800	1478		1781		1770	3539	1583		3539	
Flt Permitted		0.97	1.00		0.96		0.95	1.00	1.00		1.00	
Satd. Flow (perm)		1800	1478		1781		1770	3539	1583		3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	4	79	34	7	2	136	1315	23	0	1253	0
RTOR Reduction (vph)	0	0	70	0	2	0	0	0	4	0	0	0
Lane Group Flow (vph)	0	13	9	0	41	0	136	1315	19	0	1253	0
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		4.3	4.3		1.3		3.2	32.1	32.1		24.9	
Effective Green, g (s)		6.2	6.2		3.2		4.2	35.1	35.1		27.9	
Actuated g/C Ratio		0.12	0.12		0.06		0.08	0.68	0.68		0.54	
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0		6.0	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1		4.1	
Lane Grp Cap (vph)		215	177		110		143	2393	1071		1902	
v/s Ratio Prot		c0.01			c0.02		c0.08	0.37			c0.35	
v/s Ratio Perm			0.01						0.01			
v/c Ratio		0.06	0.05		0.37		0.95	0.55	0.02		0.66	
Uniform Delay, d1		20.3	20.2		23.4		23.7	4.3	2.8		8.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.0	0.0		0.8		59.9	0.3	0.0		0.9	
Delay (s)		20.3	20.3		24.2		83.6	4.7	2.8		9.5	
Level of Service		C	C		C		F	A	A		A	
Approach Delay (s)		20.3			24.2			11.9			9.5	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	51.9	Sum of lost time (s)	10.4
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

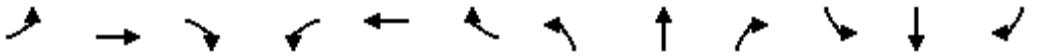
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	65	78	2047	164	80	1918
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	82	2155	173	84	2019
RTOR Reduction (vph)	0	74	0	46	0	0
Lane Group Flow (vph)	68	8	2155	127	84	2019
Turn Type		Perm		Perm	Prot	
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	11.7	11.7	83.8	83.8	8.4	96.2
Effective Green, g (s)	11.7	11.7	83.8	83.8	8.4	96.2
Actuated g/C Ratio	0.10	0.10	0.70	0.70	0.07	0.80
Clearance Time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Vehicle Extension (s)	2.5	2.5	3.5	3.5	2.0	3.7
Lane Grp Cap (vph)	173	154	3551	1105	124	4076
v/s Ratio Prot	c0.04		c0.42		c0.05	0.40
v/s Ratio Perm		0.01		0.08		
v/c Ratio	0.39	0.05	0.61	0.12	0.68	0.50
Uniform Delay, d1	50.8	49.1	9.5	5.9	54.5	3.9
Progression Factor	1.00	1.00	0.71	0.83	1.18	1.05
Incremental Delay, d2	1.1	0.1	0.3	0.0	9.5	0.4
Delay (s)	51.9	49.2	7.0	5.0	73.7	4.5
Level of Service	D	D	A	A	E	A
Approach Delay (s)	50.4		6.8			7.2
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



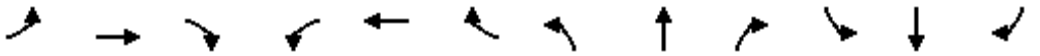
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	312	252	107	1939	1787	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	5085	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	328	265	113	2041	1881	248
RTOR Reduction (vph)	0	226	0	0	0	46
Lane Group Flow (vph)	328	39	113	2041	1881	202
Turn Type		Perm	Prot			Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Actuated Green, G (s)	17.6	17.6	11.8	91.0	74.9	74.9
Effective Green, g (s)	17.6	17.6	11.8	91.0	74.9	74.9
Actuated g/C Ratio	0.15	0.15	0.10	0.76	0.62	0.62
Clearance Time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.1	4.1	4.1
Lane Grp Cap (vph)	504	232	338	3856	3174	988
v/s Ratio Prot	c0.10		0.03	c0.40	c0.37	
v/s Ratio Perm		0.02				0.13
v/c Ratio	0.65	0.17	0.33	0.53	0.59	0.20
Uniform Delay, d1	48.3	44.8	50.4	5.9	13.5	9.7
Progression Factor	1.00	1.00	1.22	0.47	0.26	0.07
Incremental Delay, d2	2.3	0.1	0.2	0.4	0.7	0.4
Delay (s)	50.6	44.9	61.7	3.2	4.2	1.1
Level of Service	D	D	E	A	A	A
Approach Delay (s)	48.1			6.3	3.9	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



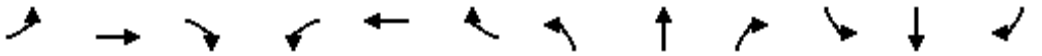
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	254	31	224	7	20	14	186	1800	8	15	1977	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1703	1583	1770	1746		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1703	1583	1770	1746		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	267	33	236	7	21	15	196	1895	8	16	2081	73
RTOR Reduction (vph)	0	0	211	0	14	0	0	0	3	0	0	19
Lane Group Flow (vph)	150	150	25	7	22	0	196	1895	5	16	2081	54
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	12.8	12.8	12.8	6.0	6.0		15.3	79.5	79.5	2.0	66.2	66.2
Effective Green, g (s)	12.8	12.8	12.8	6.0	6.0		15.3	79.5	79.5	2.0	66.2	66.2
Actuated g/C Ratio	0.11	0.11	0.11	0.05	0.05		0.13	0.66	0.66	0.02	0.55	0.55
Clearance Time (s)	6.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	3.8	3.8	3.8	2.5	2.5		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	179	182	169	89	87		226	3369	1049	30	2805	873
v/s Ratio Prot	c0.09	0.09		0.00	c0.01		c0.11	0.37		0.01	c0.41	
v/s Ratio Perm			0.02						0.00			0.03
v/c Ratio	0.84	0.82	0.15	0.08	0.25		0.87	0.56	0.01	0.53	0.74	0.06
Uniform Delay, d1	52.6	52.5	48.7	54.4	54.8		51.4	10.9	6.9	58.5	20.4	12.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.82	1.31	0.62	1.17	0.30	0.25
Incremental Delay, d2	28.3	25.9	0.5	0.3	1.1		23.5	0.6	0.0	7.4	1.0	0.0
Delay (s)	80.9	78.4	49.2	54.6	55.9		65.7	14.9	4.3	75.8	7.2	3.1
Level of Service	F	E	D	D	E		E	B	A	E	A	A
Approach Delay (s)		66.2			55.7			19.6			7.6	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



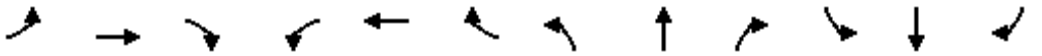
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	197	94	37	98	200	19	1627	135	333	1830	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5071	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5071	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	207	99	39	103	211	20	1713	142	351	1926	38
RTOR Reduction (vph)	0	0	82	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	74	207	17	39	103	211	20	1713	142	351	1963	0
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	7.4	20.3	20.3	3.6	15.7	120.0	2.0	61.4	120.0	16.1	75.5	
Effective Green, g (s)	7.4	20.3	20.3	3.6	15.7	120.0	2.0	61.4	120.0	16.1	75.5	
Actuated g/C Ratio	0.06	0.17	0.17	0.03	0.13	1.00	0.02	0.51	1.00	0.13	0.63	
Clearance Time (s)	4.0	4.9	4.9	4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	4.3		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	109	315	268	53	463	1583	30	2602	1583	461	3191	
v/s Ratio Prot	c0.04	c0.11		0.02	0.03		0.01	c0.34		c0.10	0.39	
v/s Ratio Perm			0.01			0.13			0.09			
v/c Ratio	0.68	0.66	0.06	0.74	0.22	0.13	0.67	0.66	0.09	0.76	0.62	
Uniform Delay, d1	55.1	46.6	41.9	57.7	46.7	0.0	58.7	21.6	0.0	50.1	13.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.37	
Incremental Delay, d2	12.4	7.2	0.2	36.2	0.4	0.2	35.7	0.7	0.1	4.6	0.6	
Delay (s)	67.5	53.8	42.1	94.0	47.1	0.2	94.3	22.3	0.1	61.3	5.5	
Level of Service	E	D	D	F	D	A	F	C	A	E	A	
Approach Delay (s)		53.5			24.2			21.4			14.0	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	3	9	23	3	170	96	909	10	92	1153	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1783	1583	1770	3533		1770	3536	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1783	1583	1770	3533		1770	3536	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	3	9	24	3	179	101	957	11	97	1214	7
RTOR Reduction (vph)	0	0	8	0	0	143	0	1	0	0	1	0
Lane Group Flow (vph)	0	26	1	0	27	36	101	967	0	97	1220	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		5.5	5.5		15.8	15.8	7.2	37.6		6.1	36.5	
Effective Green, g (s)		6.5	6.5		16.8	16.8	8.2	40.6		7.1	39.5	
Actuated g/C Ratio		0.08	0.08		0.20	0.20	0.10	0.49		0.09	0.48	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		140	124		362	322	176	1734		152	1689	
v/s Ratio Prot		c0.01			0.02		0.06	0.27		c0.05	c0.35	
v/s Ratio Perm			0.00			c0.02						
v/c Ratio		0.19	0.01		0.07	0.11	0.57	0.56		0.64	0.72	
Uniform Delay, d1		35.6	35.1		26.7	26.9	35.6	14.8		36.6	17.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.0	0.1	2.8	0.6		6.3	1.8	
Delay (s)		35.9	35.1		26.7	26.9	38.4	15.3		42.9	19.0	
Level of Service		D	D		C	C	D	B		D	B	
Approach Delay (s)		35.7			26.9			17.5			20.8	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	11.7
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

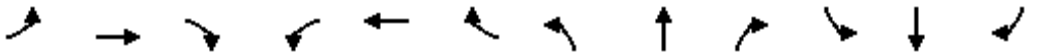


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	585	553	183	501	103	308	581	100	571	806	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1484	1856	3592	1471	3601	3592	1476	3565	5110	1461
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1484	1856	3592	1471	3601	3592	1476	3565	5110	1461
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	616	582	193	527	108	324	612	105	601	848	31
RTOR Reduction (vph)	0	0	42	0	0	73	0	0	74	0	0	21
Lane Group Flow (vph)	34	616	540	193	527	35	324	612	31	601	848	10
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.6	21.0	38.0	12.5	27.9	27.9	17.0	26.2	26.2	19.1	28.3	28.3
Effective Green, g (s)	6.6	24.0	40.0	13.5	30.9	30.9	18.0	29.2	29.2	20.1	31.3	31.3
Actuated g/C Ratio	0.07	0.24	0.41	0.14	0.31	0.31	0.18	0.30	0.30	0.20	0.32	0.32
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	125	878	604	255	1130	463	660	1068	439	730	1629	466
v/s Ratio Prot	0.02	0.17	c0.16	c0.10	0.15		0.09	c0.17		0.17	0.17	
v/s Ratio Perm			0.20			0.02			0.02			0.01
v/c Ratio	0.27	0.70	0.89	0.76	0.47	0.08	0.49	0.57	0.07	0.82	0.52	0.02
Uniform Delay, d1	43.5	33.8	27.1	40.8	27.0	23.6	36.0	29.2	24.8	37.4	27.3	22.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.9	15.3	10.8	0.5	0.1	0.2	1.0	0.1	7.1	0.5	0.0
Delay (s)	43.9	36.8	42.4	51.6	27.6	23.8	36.2	30.3	24.9	44.5	27.8	23.0
Level of Service	D	D	D	D	C	C	D	C	C	D	C	C
Approach Delay (s)		39.6			32.7			31.6			34.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	34.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	98.2	Sum of lost time (s)	11.7
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1260	90	113	873	64	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	3.0	1.3	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1326	95	119	919	67	32
RTOR Reduction (vph)	0	43	0	0	0	27
Lane Group Flow (vph)	1326	52	119	919	67	5
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	30.7	30.7	6.0	42.4	7.1	7.1
Effective Green, g (s)	33.4	31.7	7.0	45.1	8.1	8.1
Actuated g/C Ratio	0.58	0.55	0.12	0.78	0.14	0.14
Clearance Time (s)	5.7	5.7	4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2056	873	215	2776	249	223
v/s Ratio Prot	c0.37		c0.07	0.26	c0.04	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.64	0.06	0.55	0.33	0.27	0.02
Uniform Delay, d1	8.1	6.0	23.8	1.8	22.1	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	1.7	0.1	0.2	0.0
Delay (s)	8.9	6.0	25.5	1.9	22.3	21.3
Level of Service	A	A	C	A	C	C
Approach Delay (s)	8.7			4.6	22.0	
Approach LOS	A			A	C	

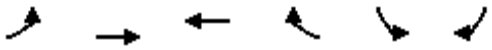
Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	381	769	58	207	83	646	1082	59	277	1695	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	133	401	809	61	218	87	680	1139	62	292	1784	95
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	133	401	809	61	218	87	680	1139	62	292	1784	95
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.0	21.9	120.0	8.0	21.3	120.0	31.0	55.3	120.0	15.1	39.4	120.0
Effective Green, g (s)	10.0	24.6	120.0	9.0	24.0	120.0	32.0	58.3	120.0	16.1	42.4	120.0
Actuated g/C Ratio	0.08	0.21	1.00	0.08	0.20	1.00	0.27	0.49	1.00	0.13	0.35	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	286	725	1562	257	708	1562	915	2470	1562	461	1797	1562
v/s Ratio Prot	0.04	0.11		0.02	0.06		c0.20	0.22		0.09	c0.35	
v/s Ratio Perm			c0.52			0.06			0.04			0.06
v/c Ratio	0.47	0.55	0.52	0.24	0.31	0.06	0.74	0.46	0.04	0.63	0.99	0.06
Uniform Delay, d1	52.4	42.8	0.0	52.3	40.9	0.0	40.2	20.4	0.0	49.2	38.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.3	1.2	0.2	0.4	0.1	2.9	0.6	0.0	2.1	19.4	0.1
Delay (s)	52.9	44.1	1.2	52.4	41.3	0.1	43.1	21.1	0.0	51.2	58.1	0.1
Level of Service	D	D	A	D	D	A	D	C	A	D	E	A
Approach Delay (s)		19.2			33.4			28.3			54.6	
Approach LOS		B			C			C			D	

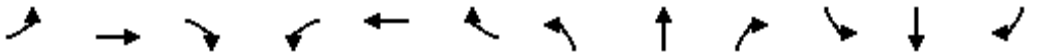
Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	75	693	1043	484	312	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1510	1736	1534
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1510	1736	1534
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	729	1098	509	328	159
RTOR Reduction (vph)	0	0	0	242	0	13
Lane Group Flow (vph)	79	729	1098	267	328	146
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	3.3	30.0	34.7	34.7	17.6	20.9
Effective Green, g (s)	4.3	32.0	36.7	36.7	20.6	26.9
Actuated g/C Ratio	0.06	0.46	0.53	0.53	0.29	0.38
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	107	1589	1822	793	512	590
v/s Ratio Prot	c0.05	0.21	c0.32		c0.19	0.02
v/s Ratio Perm				0.18		0.07
v/c Ratio	0.74	0.46	0.60	0.34	0.64	0.25
Uniform Delay, d1	32.2	13.0	11.5	9.6	21.4	14.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.2	0.2	0.6	0.3	2.1	0.1
Delay (s)	52.5	13.2	12.1	9.8	23.5	14.7
Level of Service	D	B	B	A	C	B
Approach Delay (s)		17.1	11.4		20.6	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	8.3
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	638	15	9	1227	345	25	1	10	86	4	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3427		1787	3438	1479	1787	1623			1695	1470
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3427		1787	3438	1479	1787	1623			1695	1470
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	120	672	16	9	1292	363	26	1	11	91	4	325
RTOR Reduction (vph)	0	1	0	0	0	201	0	10	0	0	0	0
Lane Group Flow (vph)	120	687	0	9	1292	162	26	2	0	0	95	325
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	6.1	41.2		0.5	35.6	35.6	6.4	6.4			18.3	18.3
Effective Green, g (s)	7.1	43.2		1.5	37.6	37.6	7.4	7.4			19.3	19.3
Actuated g/C Ratio	0.08	0.51		0.02	0.45	0.45	0.09	0.09			0.23	0.23
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	145	1760		32	1537	661	157	143			389	337
v/s Ratio Prot	c0.07	0.20		0.01	c0.38		c0.01	0.00			0.06	
v/s Ratio Perm						0.11						c0.22
v/c Ratio	0.83	0.39		0.28	0.84	0.25	0.17	0.01			0.24	0.96
Uniform Delay, d1	37.9	12.4		40.8	20.6	14.4	35.5	35.0			26.4	32.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	29.3	0.1		1.8	4.3	0.2	0.2	0.0			0.3	39.3
Delay (s)	67.1	12.6		42.5	24.9	14.6	35.7	35.0			26.8	71.3
Level of Service	E	B		D	C	B	D	D			C	E
Approach Delay (s)		20.7			22.8			35.5			61.2	
Approach LOS		C			C			D			E	

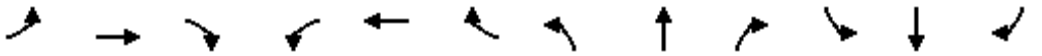
Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	84.1	Sum of lost time (s)	12.7
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	735	270	245	1513	111	661
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1565	1770	3539	1770	1573
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1565	1770	3539	1770	1573
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	774	284	258	1593	117	696
RTOR Reduction (vph)	0	134	0	0	0	11
Lane Group Flow (vph)	774	150	258	1593	117	685
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	20.4	29.6	16.4	40.8	9.2	25.6
Effective Green, g (s)	22.4	31.6	17.4	42.8	10.2	27.6
Actuated g/C Ratio	0.37	0.53	0.29	0.71	0.17	0.46
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1321	902	513	2524	301	802
v/s Ratio Prot	0.22	0.03	0.15	c0.45	0.07	c0.25
v/s Ratio Perm		0.07				0.19
v/c Ratio	0.59	0.17	0.50	0.63	0.39	0.85
Uniform Delay, d1	15.1	7.4	17.7	4.5	22.1	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	0.3	1.2	0.3	8.5
Delay (s)	15.7	7.4	18.0	5.7	22.4	22.9
Level of Service	B	A	B	A	C	C
Approach Delay (s)	13.5			7.4	22.8	
Approach LOS	B			A	C	

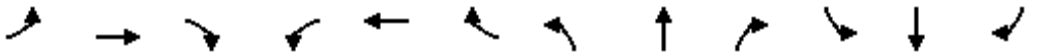
Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



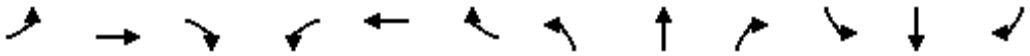
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	466	307	18	123	313	95	1	1503	11	104	1392	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.5	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	491	323	19	129	329	100	1	1582	12	109	1465	344
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	491	323	19	129	329	100	1	1582	12	109	1465	344
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	20.8	24.0	120.0	12.3	15.2	120.0	0.6	53.5	120.0	10.8	63.7	120.0
Effective Green, g (s)	21.8	26.5	120.0	13.3	17.7	120.0	1.6	56.0	120.0	11.8	66.2	120.0
Actuated g/C Ratio	0.18	0.22	1.00	0.11	0.15	1.00	0.01	0.47	1.00	0.10	0.55	1.00
Clearance Time (s)	4.0	5.7		4.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.3		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	624	782	1583	196	522	1583	24	2373	1583	174	2805	1583
v/s Ratio Prot	c0.14	0.09		0.07	c0.09		0.00	c0.31		c0.06	0.29	
v/s Ratio Perm			0.01			0.06			0.01			0.22
v/c Ratio	0.79	0.41	0.01	0.66	0.63	0.06	0.04	0.67	0.01	0.63	0.52	0.22
Uniform Delay, d1	46.9	40.1	0.0	51.2	48.1	0.0	58.4	24.8	0.0	52.0	16.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	0.6	0.0	6.0	2.7	0.1	0.3	1.5	0.0	5.0	0.7	0.3
Delay (s)	52.9	40.6	0.0	57.1	50.8	0.1	58.7	26.3	0.0	57.0	17.6	0.3
Level of Service	D	D	A	E	D	A	E	C	A	E	B	A
Approach Delay (s)		46.9			43.2			26.1			16.8	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.7
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



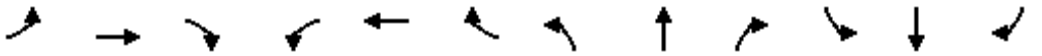
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	262	280	50	190	126	234	1414	91	105	1471	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	276	295	53	200	133	246	1488	96	111	1548	84
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	57	276	295	53	200	133	246	1488	96	111	1548	84
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.2	14.7	120.0	6.1	14.6	120.0	20.3	67.7	120.0	11.4	58.8	120.0
Effective Green, g (s)	7.2	17.2	120.0	7.1	17.1	120.0	21.3	70.2	120.0	12.4	61.3	120.0
Actuated g/C Ratio	0.06	0.14	1.00	0.06	0.14	1.00	0.18	0.59	1.00	0.10	0.51	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	106	507	1583	105	504	1583	314	2975	1583	183	2598	1583
v/s Ratio Prot	c0.03	c0.08		0.03	0.06		c0.14	0.29		0.06	c0.30	
v/s Ratio Perm			c0.19			0.08			0.06			0.05
v/c Ratio	0.54	0.54	0.19	0.50	0.40	0.08	0.78	0.50	0.06	0.61	0.60	0.05
Uniform Delay, d1	54.8	47.8	0.0	54.7	46.8	0.0	47.1	14.6	0.0	51.5	20.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	1.3	0.3	1.4	0.7	0.1	11.2	0.6	0.1	3.9	0.5	0.1
Delay (s)	57.4	49.1	0.3	56.1	47.4	0.1	58.3	15.2	0.1	55.3	21.1	0.1
Level of Service	E	D	A	E	D	A	E	B	A	E	C	A
Approach Delay (s)		26.9			32.3			20.2			22.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



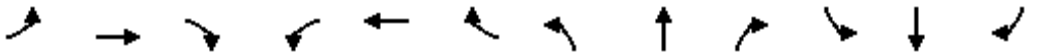
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	0	0	14	2	45	7	825	11	51	1189	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0				3.0	3.0	2.0	4.7		3.0	4.7	
Lane Util. Factor	1.00				1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00				1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770				1784	1583	1770	3532		1770	3534	
Flt Permitted	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770				1784	1583	1770	3532		1770	3534	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	0	0	15	2	47	7	868	12	54	1252	12
RTOR Reduction (vph)	0	0	0	0	0	41	0	1	0	0	0	0
Lane Group Flow (vph)	18	0	0	0	17	6	7	879	0	54	1264	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						4						
Actuated Green, G (s)	1.2				6.5	6.5	0.9	34.5		3.7	38.3	
Effective Green, g (s)	2.2				7.5	7.5	1.9	35.5		4.7	39.3	
Actuated g/C Ratio	0.03				0.12	0.12	0.03	0.56		0.07	0.62	
Clearance Time (s)	4.0				4.0	4.0	3.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0				2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	61				210	187	53	1971		131	2184	
v/s Ratio Prot	c0.01				c0.01		0.00	0.25		c0.03	c0.36	
v/s Ratio Perm						0.00						
v/c Ratio	0.30				0.08	0.03	0.13	0.45		0.41	0.58	
Uniform Delay, d1	29.9				25.0	24.8	30.0	8.3		28.1	7.2	
Progression Factor	1.00				1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0				0.1	0.0	0.4	0.3		0.8	0.5	
Delay (s)	30.9				25.0	24.9	30.5	8.5		28.9	7.7	
Level of Service	C				C	C	C	A		C	A	
Approach Delay (s)		30.9			24.9			8.7			8.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



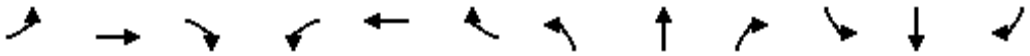
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	1158	52	50	733	8	40	2	27	12	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.97	1.00
Satd. Flow (prot)	1770	3516		1770	3539	1583		1778	1583		1807	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.97	1.00
Satd. Flow (perm)	1770	3516		1770	3539	1583		1778	1583		1807	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	1219	55	53	772	8	42	2	28	13	8	3
RTOR Reduction (vph)	0	3	0	0	0	3	0	0	25	0	0	3
Lane Group Flow (vph)	45	1271	0	53	772	5	0	44	3	0	21	0
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	1.9	36.0		2.7	36.8	36.8		5.9	5.9		4.7	4.7
Effective Green, g (s)	2.9	39.0		3.7	39.8	37.8		6.9	6.9		5.7	5.7
Actuated g/C Ratio	0.04	0.58		0.06	0.59	0.56		0.10	0.10		0.09	0.09
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	77	2047		98	2102	893		183	163		154	135
v/s Ratio Prot	0.03	c0.36		c0.03	0.22			c0.02			c0.01	
v/s Ratio Perm						0.00			0.00			0.00
v/c Ratio	0.58	0.62		0.54	0.37	0.01		0.24	0.02		0.14	0.00
Uniform Delay, d1	31.5	9.2		30.8	7.1	6.4		27.6	27.0		28.4	28.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	7.1	1.1		3.2	0.3	0.0		0.2	0.0		0.1	0.0
Delay (s)	38.6	10.2		34.1	7.4	6.4		27.9	27.0		28.5	28.0
Level of Service	D	B		C	A	A		C	C		C	C
Approach Delay (s)		11.2			9.1			27.6			28.5	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



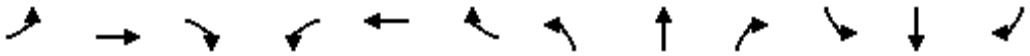
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	607	512	80	461	237	136	1152	37	339	1403	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	144	639	539	84	485	249	143	1213	39	357	1477	206
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	144	639	539	84	485	249	143	1213	39	357	1477	206
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.4	28.5	120.0	8.0	22.1	120.0	9.0	46.9	120.0	17.2	55.1	120.0
Effective Green, g (s)	15.4	31.0	120.0	9.0	24.6	120.0	10.0	49.9	120.0	18.2	58.1	120.0
Actuated g/C Ratio	0.13	0.26	1.00	0.08	0.21	1.00	0.08	0.42	1.00	0.15	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	227	914	1583	257	725	1583	286	2115	1583	521	2462	1583
v/s Ratio Prot	c0.08	c0.18		0.02	0.14		0.04	c0.24		c0.10	c0.29	
v/s Ratio Perm			0.34			0.16			0.02			0.13
v/c Ratio	0.63	0.70	0.34	0.33	0.67	0.16	0.50	0.57	0.02	0.69	0.60	0.13
Uniform Delay, d1	49.6	40.3	0.0	52.6	43.9	0.0	52.6	26.9	0.0	48.2	22.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	2.4	0.6	0.7	2.4	0.2	1.4	0.4	0.0	3.7	1.1	0.2
Delay (s)	55.3	42.6	0.6	53.4	46.3	0.2	54.0	27.3	0.0	51.9	23.6	0.2
Level of Service	E	D	A	D	D	A	D	C	A	D	C	A
Approach Delay (s)		26.9			33.0			29.2			26.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	487	0	0	621	399	2	2	0	507	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0		3.0	3.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		0.95	0.95	
Frt		1.00			1.00	0.85		1.00		1.00	0.99	
Flt Protected		1.00			1.00	1.00		0.98		0.95	0.96	
Satd. Flow (prot)		3539			1863	1583		1817		1681	1670	
Flt Permitted		0.95			1.00	1.00		1.00		0.95	0.96	
Satd. Flow (perm)		3378			1863	1583		1863		1681	1670	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	513	0	0	654	420	2	2	0	534	0	24
RTOR Reduction (vph)	0	0	0	0	0	43	0	0	0	0	3	0
Lane Group Flow (vph)	0	514	0	0	654	377	0	4	0	283	272	0
Turn Type	Perm					pt+ov	Perm			Split		
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases	2						3					
Actuated Green, G (s)		81.5			76.9	106.6		0.8		24.8	24.8	
Effective Green, g (s)		82.5			77.9	107.6		1.8		25.8	25.8	
Actuated g/C Ratio		0.69			0.65	0.90		0.02		0.22	0.22	
Clearance Time (s)		4.9			4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1			3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		2322			1209	1419		28		361	359	
v/s Ratio Prot					c0.35	0.24				c0.17	0.16	
v/s Ratio Perm		c0.15						c0.00				
v/c Ratio		0.22			0.54	0.27		0.14		0.78	0.76	
Uniform Delay, d1		6.9			11.4	0.8		58.3		44.5	44.2	
Progression Factor		1.00			1.53	1.11		1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.5	0.1		0.9		9.9	7.9	
Delay (s)		7.1			17.9	1.0		59.2		54.3	52.0	
Level of Service		A			B	A		E		D	D	
Approach Delay (s)		7.1			11.3			59.2			53.2	
Approach LOS		A			B			E			D	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

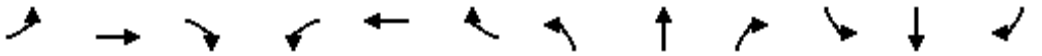


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	991	24	18	979	0	45	0	45	75	11	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9		2.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		1.00	1.00	
Frt		1.00		1.00	1.00			0.93		1.00	0.89	
Flt Protected		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3527		1770	3539			1695		1770	1660	
Flt Permitted		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3527		1770	3539			1695		1770	1660	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1043	25	19	1031	0	47	0	47	79	12	32
RTOR Reduction (vph)	0	1	0	0	0	0	0	31	0	0	29	0
Lane Group Flow (vph)	0	1067	0	19	1031	0	0	63	0	79	15	0
Turn Type				Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)		82.6		3.2	88.8			9.7		8.6	8.6	
Effective Green, g (s)		83.6		4.2	89.8			10.7		9.6	9.6	
Actuated g/C Ratio		0.70		0.04	0.75			0.09		0.08	0.08	
Clearance Time (s)		4.9		3.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1		2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		2457		62	2648			151		142	133	
v/s Ratio Prot		c0.30		0.01	c0.29			c0.04		c0.04	0.01	
v/s Ratio Perm												
v/c Ratio		0.43		0.31	0.39			0.42		0.56	0.11	
Uniform Delay, d1		7.9		56.5	5.4			51.7		53.1	51.2	
Progression Factor		0.57		1.13	0.50			1.00		1.00	1.00	
Incremental Delay, d2		0.1		1.0	0.4			0.7		2.7	0.1	
Delay (s)		4.7		65.0	3.1			52.4		55.8	51.4	
Level of Service		A		E	A			D		E	D	
Approach Delay (s)		4.7			4.2			52.4			54.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

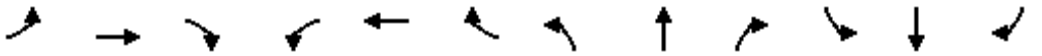
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1077	44	175	561	32	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		2.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3519		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3519		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1134	46	184	591	34	176
RTOR Reduction (vph)	4	0	0	0	0	158
Lane Group Flow (vph)	1176	0	184	591	34	18
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	33.2		9.7	45.9	5.2	5.2
Effective Green, g (s)	34.2		10.7	46.9	6.2	6.2
Actuated g/C Ratio	0.57		0.18	0.78	0.10	0.10
Clearance Time (s)	4.9		3.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	2006		316	2766	183	164
v/s Ratio Prot	c0.33		c0.10	0.17	c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.59		0.58	0.21	0.19	0.11
Uniform Delay, d1	8.3		22.6	1.7	24.6	24.4
Progression Factor	0.93		1.17	1.37	1.00	1.00
Incremental Delay, d2	0.4		1.3	0.1	0.2	0.1
Delay (s)	8.2		27.6	2.5	24.8	24.5
Level of Service	A		C	A	C	C
Approach Delay (s)	8.2			8.4	24.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



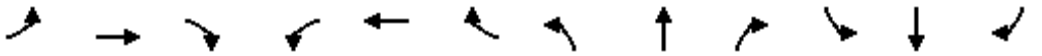
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	1153	4	13	1345	98	5	2	12	508	4	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3537		1770	3503			1678		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3537		1770	3503			1678		1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	103	1214	4	14	1416	103	5	2	13	535	4	95
RTOR Reduction (vph)	0	0	0	0	4	0	0	13	0	0	0	39
Lane Group Flow (vph)	103	1218	0	14	1515	0	0	7	0	267	272	56
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	9.6	76.6		1.2	68.2			1.6		23.1	23.1	23.1
Effective Green, g (s)	10.6	77.6		2.2	69.2			2.6		24.1	24.1	24.1
Actuated g/C Ratio	0.09	0.65		0.02	0.58			0.02		0.20	0.20	0.20
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	156	2287		32	2020			36		338	339	318
v/s Ratio Prot	c0.06	0.34		0.01	c0.43			c0.00		0.16	c0.16	
v/s Ratio Perm												0.04
v/c Ratio	0.66	0.53		0.44	0.75			0.20		0.79	0.80	0.18
Uniform Delay, d1	53.0	11.4		58.3	18.9			57.7		45.5	45.7	39.7
Progression Factor	0.80	1.14		0.64	0.53			1.00		1.00	1.00	1.00
Incremental Delay, d2	6.7	0.8		1.4	0.7			1.0		11.2	12.5	0.2
Delay (s)	49.2	13.8		38.8	10.7			58.7		56.8	58.2	39.9
Level of Service	D	B		D	B			E		E	E	D
Approach Delay (s)		16.6			11.0			58.7			54.8	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



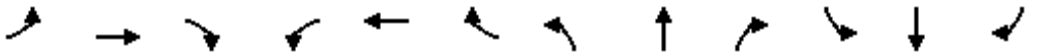
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	375	1309	18	109	1094	583	48	61	114	997	12	333
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	395	1378	19	115	1152	614	51	64	120	1049	13	351
RTOR Reduction (vph)	0	1	0	0	0	213	0	0	102	0	0	220
Lane Group Flow (vph)	395	1396	0	115	1152	401	51	64	19	535	527	131
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	25.0	55.1		8.0	38.1	38.1	4.0	4.0	4.0	35.1	35.1	35.1
Effective Green, g (s)	25.0	55.1		8.0	38.1	38.1	4.0	4.0	4.0	35.1	35.1	35.1
Actuated g/C Ratio	0.21	0.46		0.07	0.32	0.32	0.03	0.03	0.03	0.29	0.29	0.29
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.3		2.0	3.5	3.5	2.0	2.0	2.0	2.3	2.3	2.3
Lane Grp Cap (vph)	369	1622		118	1124	503	59	62	53	492	493	463
v/s Ratio Prot	c0.22	0.40		0.06	c0.33		0.03	c0.03		c0.32	0.31	
v/s Ratio Perm						0.25			0.01			0.08
v/c Ratio	1.07	0.86		0.97	1.02	0.80	0.86	1.03	0.35	1.09	1.07	0.28
Uniform Delay, d1	47.5	29.0		55.9	41.0	37.4	57.7	58.0	56.7	42.5	42.5	32.7
Progression Factor	0.89	0.74		1.35	0.56	0.45	1.00	1.00	1.00	0.89	0.89	2.23
Incremental Delay, d2	63.1	5.3		18.8	15.5	0.9	68.5	123.6	1.4	61.0	54.7	0.1
Delay (s)	105.6	26.8		94.2	38.5	17.8	126.3	181.6	58.2	98.9	92.5	73.2
Level of Service	F	C		F	D	B	F	F	E	F	F	E
Approach Delay (s)		44.1			35.1			106.6			90.1	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM Average Control Delay	55.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



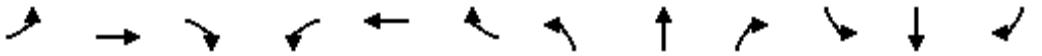
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1093	756	0	1604	1404	0	0	0	274	764	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.9		2.9	3.0				3.7	4.3	3.7
Lane Util. Factor		0.95	1.00		0.91	0.91				0.95	*0.90	1.00
Frt		1.00	0.85		0.97	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3539	1583		3273	1441				1681	1674	1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3539	1583		3273	1441				1681	1674	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1151	796	0	1688	1478	0	0	0	288	804	186
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	1151	796	0	2169	975	0	0	0	259	833	176
Turn Type			Prot			Free				Split		Prot
Protected Phases		2	2		6					4	4	4
Permitted Phases						Free						
Actuated Green, G (s)		64.1	64.1		64.1	120.0				45.7	45.7	45.7
Effective Green, g (s)		65.7	65.1		66.1	120.0				47.3	46.7	47.3
Actuated g/C Ratio		0.55	0.54		0.55	1.00				0.39	0.39	0.39
Clearance Time (s)		4.9	4.9		4.9					5.3	5.3	5.3
Vehicle Extension (s)		3.8	3.8		3.8					2.0	2.0	2.0
Lane Grp Cap (vph)		1938	859		1803	1441				663	651	624
v/s Ratio Prot		0.33	0.50		c0.66					0.15	c0.50	0.11
v/s Ratio Perm						0.68						
v/c Ratio		0.59	0.93		1.20	0.68				0.39	1.28	0.28
Uniform Delay, d1		18.2	25.3		27.0	0.0				26.0	36.6	24.8
Progression Factor		1.04	0.97		0.83	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.4	7.2		94.6	1.4				0.1	137.4	0.1
Delay (s)		19.5	31.6		116.9	1.4				26.2	174.0	24.9
Level of Service		B	C		F	A				C	F	C
Approach Delay (s)		24.4			81.4			0.0			122.4	
Approach LOS		C			F			A			F	

Intersection Summary			
HCM Average Control Delay	72.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



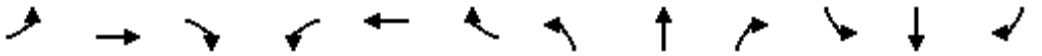
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	285	1082	0	0	2540	526	0	0	1183	0	0	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.9			3.0			2.0
Lane Util. Factor	1.00	0.86			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			4791	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			4791	1362			1611			2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	300	1139	0	0	2674	554	0	0	1245	0	0	493
RTOR Reduction (vph)	0	0	0	0	3	63	0	0	0	0	0	7
Lane Group Flow (vph)	300	1139	0	0	2726	436	0	0	1245	0	0	486
Turn Type	Prot					Perm			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						6			Free			
Actuated Green, G (s)	11.7	60.0			39.4	39.4			60.0			11.7
Effective Green, g (s)	13.7	60.0			41.4	41.4			60.0			13.7
Actuated g/C Ratio	0.23	1.00			0.69	0.69			1.00			0.23
Clearance Time (s)	4.0	4.9			4.9	4.9						4.0
Vehicle Extension (s)	2.0	3.9			3.8	3.8						2.0
Lane Grp Cap (vph)	404	6408			3306	940			1611			636
v/s Ratio Prot	0.17	0.18			0.57							0.17
v/s Ratio Perm						0.32			c0.77			
v/c Ratio	0.74	0.18			0.82	0.46			0.77			0.76
Uniform Delay, d1	21.5	0.0			6.7	4.2			0.0			21.6
Progression Factor	1.56	1.00			1.25	1.48			1.00			1.00
Incremental Delay, d2	5.3	0.0			0.8	0.5			3.7			4.9
Delay (s)	38.9	0.0			9.1	6.8			3.7			26.6
Level of Service	D	A			A	A			A			C
Approach Delay (s)		8.1			8.8			3.7			26.6	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	341	1750	430	413	1763	209	316	941	255	226	927	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	3.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	4.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1538
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	359	1842	453	435	1856	220	333	991	268	238	976	67
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	54
Lane Group Flow (vph)	359	1842	453	435	1856	220	333	991	268	238	976	13
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			4
Actuated Green, G (s)	14.6	46.0	120.0	17.0	50.4	120.0	12.9	25.3	120.0	10.0	22.4	22.4
Effective Green, g (s)	15.6	49.0	120.0	18.0	53.4	120.0	13.9	28.3	120.0	11.0	25.4	23.4
Actuated g/C Ratio	0.13	0.41	1.00	0.15	0.44	1.00	0.12	0.24	1.00	0.09	0.21	0.19
Clearance Time (s)	4.0	6.0		6.0	6.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.1		2.0	3.3		2.0	4.2		2.0	4.5	4.5
Lane Grp Cap (vph)	431	2076	1560	498	2263	1560	384	1199	1560	304	1076	300
v/s Ratio Prot	0.11	c0.36		0.13	c0.36		c0.10	c0.19		0.07	0.19	
v/s Ratio Perm			c0.29			0.14			0.17			0.01
v/c Ratio	0.83	0.89	0.29	0.87	0.82	0.14	0.87	0.83	0.17	0.78	0.91	0.04
Uniform Delay, d1	50.9	32.9	0.0	49.9	29.1	0.0	52.1	43.5	0.0	53.3	46.1	39.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.4	6.1	0.5	15.1	2.5	0.2	17.7	5.1	0.2	11.5	11.3	0.1
Delay (s)	63.3	39.0	0.5	65.0	31.6	0.2	69.8	48.6	0.2	64.8	57.5	39.3
Level of Service	E	D	A	E	C	A	E	D	A	E	E	D
Approach Delay (s)		35.7			34.7			44.9			57.9	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM Average Control Delay	40.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

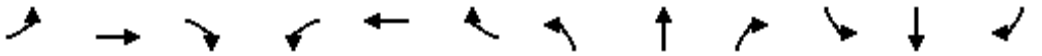


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	1600	133	276	1516	4	21	2	442	7	5	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (prot)	1762	3603		1711	3538			1781	1583		1810	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (perm)	1762	3603		1711	3538			1781	1583		1810	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	1684	140	291	1596	4	22	2	465	7	5	8
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	49	0	0	8
Lane Group Flow (vph)	54	1819	0	291	1600	0	0	24	416	0	12	0
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	6.5	66.1		27.3	88.6			5.6	32.9		1.6	1.6
Effective Green, g (s)	7.5	68.6		28.3	91.1			7.1	35.9		3.1	3.1
Actuated g/C Ratio	0.06	0.57		0.24	0.76			0.06	0.30		0.03	0.03
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	110	2060		404	2686			105	507		47	38
v/s Ratio Prot	0.03	c0.50		0.17	0.45			0.01	c0.20		c0.01	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.49	0.88		0.72	0.60			0.23	0.82		0.26	0.01
Uniform Delay, d1	54.4	22.2		42.2	6.4			53.8	39.1		57.3	56.9
Progression Factor	1.00	1.00		1.17	0.71			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	5.0		4.3	0.8			0.4	9.8		1.0	0.0
Delay (s)	55.7	27.2		53.6	5.3			54.2	48.8		58.4	57.0
Level of Service	E	C		D	A			D	D		E	E
Approach Delay (s)		28.1			12.7			49.1			57.8	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

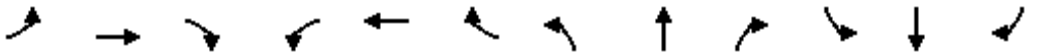
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1574	418	82	1654	132	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3428		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3428		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1657	440	86	1741	139	21
RTOR Reduction (vph)	20	0	0	0	0	18
Lane Group Flow (vph)	2077	0	86	1741	139	3
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	80.9		8.0	92.9	12.8	12.8
Effective Green, g (s)	82.9		10.0	94.9	14.8	14.8
Actuated g/C Ratio	0.69		0.08	0.79	0.12	0.12
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2368		148	2799	218	195
v/s Ratio Prot	c0.61		0.05	c0.49	c0.08	
v/s Ratio Perm						0.00
v/c Ratio	0.88		0.58	0.62	0.64	0.01
Uniform Delay, d1	14.6		53.0	5.2	50.0	46.2
Progression Factor	0.43		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3		3.7	1.1	5.3	0.0
Delay (s)	8.5		56.7	6.2	55.3	46.2
Level of Service	A		E	A	E	D
Approach Delay (s)	8.5			8.6	54.1	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	379	730	527	538	778	60	710	1205	160	210	1496	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3496		3433	3539	1549	3433	5085	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3496		3433	3539	1549	3433	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	399	768	555	566	819	63	747	1268	168	221	1575	217
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	55	0	0	81
Lane Group Flow (vph)	399	768	555	566	878	0	747	1268	113	221	1575	136
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	17.0	30.4	150.0	23.0	36.8		31.0	66.2	66.2	11.0	46.6	46.6
Effective Green, g (s)	18.0	31.9	150.0	24.0	38.3		32.0	67.7	67.2	12.0	48.1	47.6
Actuated g/C Ratio	0.12	0.21	1.00	0.16	0.26		0.21	0.45	0.45	0.08	0.32	0.32
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	412	753	1561	549	893		732	1597	694	275	1631	491
v/s Ratio Prot	0.12	c0.22		0.16	c0.25		c0.22	0.36		0.06	c0.31	
v/s Ratio Perm			0.36						0.07			0.09
v/c Ratio	0.97	1.02	0.36	1.03	0.98		1.02	0.79	0.16	0.80	0.97	0.28
Uniform Delay, d1	65.7	59.0	0.0	63.0	55.5		59.0	35.2	24.7	67.8	50.1	38.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.62	0.52	1.00	1.00	1.00
Incremental Delay, d2	35.5	37.9	0.6	46.6	26.0		33.9	3.1	0.4	14.7	14.9	0.4
Delay (s)	101.2	97.0	0.6	109.6	81.5		90.9	25.1	13.3	82.5	65.0	38.7
Level of Service	F	F	A	F	F		F	C	B	F	E	D
Approach Delay (s)		66.9			92.5			46.7			64.1	
Approach LOS		E			F			D			E	

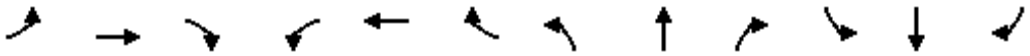
Intersection Summary			
HCM Average Control Delay	65.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	1098	11	138	1194	10	10	11	39	14	257	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		1.00	1.00
Satd. Flow (prot)	1770	3533		1770	3534			1819	1551		1858	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00		1.00	1.00
Satd. Flow (perm)	1770	3533		1770	3534			1819	1551		1858	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1156	12	145	1257	11	11	12	41	15	271	244
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	38	0	0	200
Lane Group Flow (vph)	57	1167	0	145	1268	0	0	23	3	0	286	44
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	5.3	41.1		10.8	46.6			5.5	5.5		15.3	15.3
Effective Green, g (s)	6.3	43.1		11.8	48.6			6.5	6.5		16.3	16.3
Actuated g/C Ratio	0.07	0.48		0.13	0.54			0.07	0.07		0.18	0.18
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	124	1692		232	1908			131	112		337	287
v/s Ratio Prot	0.03	0.33		c0.08	c0.36			c0.01			c0.15	
v/s Ratio Perm									0.00			0.03
v/c Ratio	0.46	0.69		0.62	0.66			0.18	0.03		0.85	0.15
Uniform Delay, d1	40.2	18.3		37.0	14.8			39.2	38.8		35.7	31.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	2.3		3.7	1.1			0.2	0.0		17.1	0.1
Delay (s)	41.2	20.6		40.8	16.0			39.5	38.8		52.7	31.1
Level of Service	D	C		D	B			D	D		D	C
Approach Delay (s)		21.5			18.5			39.1			42.8	
Approach LOS		C			B			D			D	

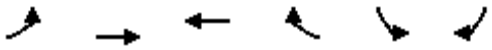
Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



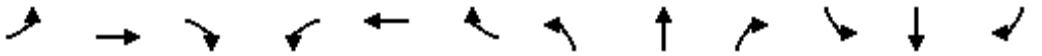
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	1093	0	15	1385	13	12	0	5	31	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.8		2.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3534			1730			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.75	1.00
Satd. Flow (perm)	1770	3539		1770	3534			1460			1389	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	1151	0	16	1458	14	13	0	5	33	0	26
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	0	24
Lane Group Flow (vph)	29	1151	0	16	1472	0	0	13	0	0	33	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	2.1	69.7		0.8	68.4			7.2			7.2	7.2
Effective Green, g (s)	3.1	72.2		1.8	70.9			8.2			8.2	8.2
Actuated g/C Ratio	0.03	0.80		0.02	0.79			0.09			0.09	0.09
Clearance Time (s)	3.0	5.3		3.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	61	2839		35	2784			133			127	144
v/s Ratio Prot	c0.02	0.33		0.01	c0.42							
v/s Ratio Perm								0.01			c0.02	0.00
v/c Ratio	0.48	0.41		0.46	0.53			0.10			0.26	0.02
Uniform Delay, d1	42.7	2.6		43.6	3.5			37.5			38.1	37.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	2.1	0.4		3.4	0.7			0.2			0.8	0.0
Delay (s)	44.8	3.0		47.0	4.2			37.8			38.9	37.3
Level of Service	D	A		D	A			D			D	D
Approach Delay (s)		4.1			4.7			37.8			38.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.8
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	597	404	739	214	788	625
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	0.98	1.00		0.95	1.00
Satd. Flow (prot)	1610	3324	3420		3433	1583
Flt Permitted	0.95	0.98	1.00		0.95	1.00
Satd. Flow (perm)	1610	3324	3420		3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	628	425	778	225	829	658
RTOR Reduction (vph)	0	0	29	0	0	15
Lane Group Flow (vph)	345	708	974	0	829	643
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	27.0	27.0	25.9		23.8	50.8
Effective Green, g (s)	29.5	29.5	28.4		24.8	55.8
Actuated g/C Ratio	0.33	0.33	0.32		0.28	0.62
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	528	1090	1079		946	1031
v/s Ratio Prot	c0.21	0.21	c0.28		c0.24	0.20
v/s Ratio Perm						0.20
v/c Ratio	0.65	0.65	0.90		0.88	0.62
Uniform Delay, d1	25.9	25.8	29.5		31.1	10.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.2	3.0	10.2		8.9	0.9
Delay (s)	32.1	28.8	39.7		40.0	11.4
Level of Service	C	C	D		D	B
Approach Delay (s)		29.9	39.7		27.4	
Approach LOS		C	D		C	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.3
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



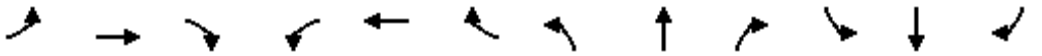
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	795	179	40	631	8	53	3	2	11	8	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.97		1.00	1.00			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.97	1.00
Satd. Flow (prot)	1770	3442		1770	3533			1560			1808	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78			0.88	1.00
Satd. Flow (perm)	1770	3442		1770	3533			1272			1630	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	837	188	42	664	8	56	3	2	12	8	352
RTOR Reduction (vph)	0	27	0	0	1	0	0	2	0	0	0	247
Lane Group Flow (vph)	26	998	0	42	671	0	0	59	0	0	20	105
Parking (#/hr)								4				
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	0.8	19.9		1.9	21.0			10.1			10.1	10.1
Effective Green, g (s)	1.8	21.9		2.9	23.0			11.1			11.1	11.1
Actuated g/C Ratio	0.04	0.48		0.06	0.51			0.25			0.25	0.25
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3		2.0	4.3			2.0			2.0	2.0
Lane Grp Cap (vph)	70	1668		114	1798			312			400	389
v/s Ratio Prot	0.01	c0.29		c0.02	0.19							
v/s Ratio Perm								0.05			0.01	c0.07
v/c Ratio	0.37	0.60		0.37	0.37			0.19			0.05	0.27
Uniform Delay, d1	21.1	8.5		20.3	6.7			13.5			13.0	13.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.2	0.7		0.7	0.2			0.1			0.0	0.1
Delay (s)	22.4	9.2		21.0	6.9			13.6			13.0	13.9
Level of Service	C	A		C	A			B			B	B
Approach Delay (s)		9.5			7.8			13.6			13.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	9.3
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

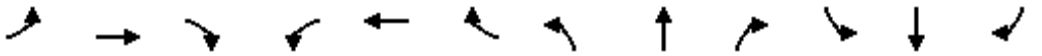
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	470	374	274	309	259	558
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5		2.8	2.5	3.0	2.8
Lane Util. Factor	0.97		1.00	1.00	1.00	1.00
Frt	0.93		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3282		1863	1583	1770	1863
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	3282		1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	495	394	288	325	273	587
RTOR Reduction (vph)	217	0	0	23	0	0
Lane Group Flow (vph)	672	0	288	302	273	587
Turn Type				pm+ov	Prot	
Protected Phases	8		6	8	5	2
Permitted Phases				6		
Actuated Green, G (s)	15.7		15.3	31.0	8.3	27.6
Effective Green, g (s)	17.2		17.8	34.0	9.3	30.1
Actuated g/C Ratio	0.33		0.34	0.65	0.18	0.57
Clearance Time (s)	4.0		5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0		4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	1073		630	1023	313	1066
v/s Ratio Prot	c0.20		0.15	0.10	c0.15	c0.32
v/s Ratio Perm				0.09		
v/c Ratio	0.63		0.46	0.30	0.87	0.55
Uniform Delay, d1	15.0		13.6	4.1	21.1	7.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		0.8	0.1	21.8	0.8
Delay (s)	15.8		14.5	4.1	42.9	7.9
Level of Service	B		B	A	D	A
Approach Delay (s)	15.8		9.0			19.0
Approach LOS	B		A			B

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	5.5
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



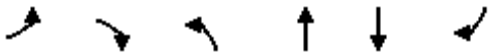
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	13	55	160	28	0	143	0	186	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0		5.0		5.0			
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00		1.00			
Frt		1.00	0.85	1.00	1.00		1.00		0.85			
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (prot)		1863	1583	1770	1863		1770		1583			
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (perm)		1863	1583	1770	1863		1770		1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	14	58	168	29	0	151	0	196	0	0	0
RTOR Reduction (vph)	0	0	51	0	0	0	0	0	112	0	0	0
Lane Group Flow (vph)	0	14	7	168	29	0	151	0	84	0	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		6.5	6.5	10.4	21.9		9.6		23.9			
Effective Green, g (s)		6.5	6.5	10.4	21.9		9.6		23.9			
Actuated g/C Ratio		0.12	0.12	0.19	0.39		0.17		0.43			
Clearance Time (s)		5.0	5.0	5.0	5.0		5.0		5.0			
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0			
Lane Grp Cap (vph)		217	184	330	731		305		678			
v/s Ratio Prot		c0.01		c0.09	0.02		c0.09					
v/s Ratio Perm			0.00						c0.05			
v/c Ratio		0.06	0.04	0.51	0.04		0.50		0.12			
Uniform Delay, d1		21.9	21.9	20.4	10.5		20.9		9.6			
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00			
Incremental Delay, d2		0.1	0.1	1.2	0.0		1.3		0.1			
Delay (s)		22.1	22.0	21.6	10.5		22.2		9.7			
Level of Service		C	C	C	B		C		A			
Approach Delay (s)		22.0			20.0			15.1			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	2	28	13	1	6	80	555	32	16	215	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	2	29	14	1	6	84	584	34	17	226	12
RTOR Reduction (vph)	0	0	26	0	0	5	0	0	16	0	0	6
Lane Group Flow (vph)	4	2	3	14	1	1	84	584	18	17	226	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	4.3	4.3	0.5	4.4	4.4	2.7	26.2	26.2	0.5	24.0	24.0
Effective Green, g (s)	1.4	6.3	5.3	1.5	6.4	5.4	3.7	28.2	27.2	1.5	26.0	25.0
Actuated g/C Ratio	0.03	0.12	0.10	0.03	0.12	0.10	0.07	0.55	0.53	0.03	0.50	0.49
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	48	228	163	52	232	166	127	2784	836	52	2567	768
v/s Ratio Prot	0.00	0.00		c0.01	0.00		c0.05	c0.11		0.01	0.04	
v/s Ratio Perm			c0.00			0.00			0.01			0.00
v/c Ratio	0.08	0.01	0.02	0.27	0.00	0.00	0.66	0.21	0.02	0.33	0.09	0.01
Uniform Delay, d1	24.4	19.9	20.8	24.5	19.8	20.6	23.3	6.0	5.8	24.5	6.6	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	0.0	2.8	0.0	0.0	12.2	0.0	0.0	3.7	0.0	0.0
Delay (s)	25.2	19.9	20.8	27.2	19.8	20.7	35.5	6.0	5.8	28.2	6.6	6.8
Level of Service	C	B	C	C	B	C	D	A	A	C	A	A
Approach Delay (s)		21.3			25.0			9.5			8.1	
Approach LOS		C			C			A			A	

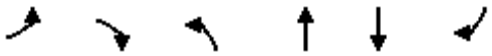
Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	70	54	121	1040	984	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1563	1770	5085	5085	1549
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1563	1770	5085	5085	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	57	127	1095	1036	167
RTOR Reduction (vph)	0	49	0	0	0	95
Lane Group Flow (vph)	74	8	127	1095	1036	72
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	5.3	5.3	4.6	25.0	16.4	16.4
Effective Green, g (s)	5.3	5.3	4.6	25.0	16.4	16.4
Actuated g/C Ratio	0.14	0.14	0.12	0.65	0.43	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	245	216	213	3319	2177	663
v/s Ratio Prot	c0.04		c0.07	0.22	c0.20	
v/s Ratio Perm		0.01				0.05
v/c Ratio	0.30	0.04	0.60	0.33	0.48	0.11
Uniform Delay, d1	14.8	14.3	16.0	2.9	7.9	6.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	4.4	0.1	0.2	0.1
Delay (s)	15.5	14.4	20.4	3.0	8.0	6.6
Level of Service	B	B	C	A	A	A
Approach Delay (s)	15.0			4.8	7.8	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

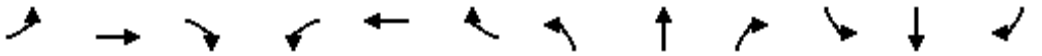
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	16	23	55	1145	996	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1563	1770	5085	5085	1549
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1563	1770	5085	5085	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	24	58	1205	1048	44
RTOR Reduction (vph)	0	22	0	0	0	21
Lane Group Flow (vph)	17	2	58	1205	1048	23
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	2.9	2.9	1.0	21.8	16.8	16.8
Effective Green, g (s)	2.9	2.9	1.0	21.8	16.8	16.8
Actuated g/C Ratio	0.09	0.09	0.03	0.67	0.51	0.51
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	157	139	54	3390	2612	796
v/s Ratio Prot	c0.01		c0.03	c0.24	0.21	
v/s Ratio Perm		0.00				0.01
v/c Ratio	0.11	0.02	1.07	0.36	0.40	0.03
Uniform Delay, d1	13.7	13.6	15.9	2.4	4.9	3.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	144.7	0.1	0.1	0.0
Delay (s)	14.0	13.6	160.5	2.4	5.0	3.9
Level of Service	B	B	F	A	A	A
Approach Delay (s)	13.8			9.7	4.9	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	32.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



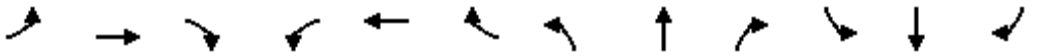
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	0	44	13	0	3	107	1161	32	7	1219	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.91			0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1656			1742		1770	5085	1546	1770	5085	1546
Flt Permitted		0.98			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1656			1742		1770	5085	1546	1770	5085	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	0	46	14	0	3	113	1222	34	7	1283	80
RTOR Reduction (vph)	0	41	0	0	3	0	0	0	8	0	0	21
Lane Group Flow (vph)	0	30	0	0	14	0	113	1222	26	7	1283	59
Confl. Peds. (#/hr)			2			2	2		2			2
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)		7.0			3.8		7.1	43.1	43.1	0.4	36.4	36.4
Effective Green, g (s)		7.0			3.8		7.1	43.1	43.1	0.4	36.4	36.4
Actuated g/C Ratio		0.10			0.05		0.10	0.61	0.61	0.01	0.52	0.52
Clearance Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		165			94		179	3118	948	10	2633	800
v/s Ratio Prot		c0.02			c0.01		c0.06	0.24		0.00	c0.25	
v/s Ratio Perm									0.02			0.04
v/c Ratio		0.18			0.15		0.63	0.39	0.03	0.70	0.49	0.07
Uniform Delay, d1		29.0			31.7		30.3	6.9	5.4	34.9	10.9	8.5
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5			0.7		7.1	0.1	0.0	117.6	0.1	0.0
Delay (s)		29.5			32.5		37.4	7.0	5.4	152.5	11.1	8.5
Level of Service		C			C		D	A	A	F	B	A
Approach Delay (s)		29.5			32.5			9.5			11.6	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

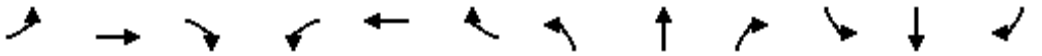
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	822	131	133	642	141	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	865	138	140	676	148	76
RTOR Reduction (vph)	0	70	0	0	0	61
Lane Group Flow (vph)	865	68	140	676	148	15
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	20.6	20.6	4.5	30.8	8.5	8.5
Effective Green, g (s)	24.0	24.0	5.5	34.2	9.5	9.5
Actuated g/C Ratio	0.49	0.49	0.11	0.70	0.19	0.19
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1733	775	199	2470	343	307
v/s Ratio Prot	c0.24		c0.08	0.19	c0.08	
v/s Ratio Perm		0.04				0.01
v/c Ratio	0.50	0.09	0.70	0.27	0.43	0.05
Uniform Delay, d1	8.4	6.7	21.0	2.8	17.4	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	8.9	0.1	0.3	0.0
Delay (s)	8.8	6.7	29.8	2.9	17.7	16.1
Level of Service	A	A	C	A	B	B
Approach Delay (s)	8.5			7.5	17.2	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	20	27	21	13	27	54	865	49	47	835	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	21	28	22	14	28	57	911	52	49	879	142
RTOR Reduction (vph)	0	0	23	0	0	24	0	0	27	0	0	75
Lane Group Flow (vph)	51	21	5	22	14	4	57	911	25	49	879	67
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.4	9.5	9.5	0.5	7.6	7.6	2.9	27.8	27.8	2.4	27.3	27.3
Effective Green, g (s)	3.4	11.5	10.5	1.5	9.6	8.6	3.9	29.8	28.8	3.4	29.3	28.3
Actuated g/C Ratio	0.06	0.19	0.17	0.02	0.16	0.14	0.06	0.50	0.48	0.06	0.49	0.47
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	100	356	276	44	297	226	115	2517	757	100	2475	744
v/s Ratio Prot	c0.03	c0.01		0.01	0.01		c0.03	c0.18		0.03	0.17	
v/s Ratio Perm			0.00			0.00			0.02			0.04
v/c Ratio	0.51	0.06	0.02	0.50	0.05	0.02	0.50	0.36	0.03	0.49	0.36	0.09
Uniform Delay, d1	27.6	19.9	20.6	29.0	21.4	22.2	27.2	9.4	8.3	27.6	9.6	8.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	0.1	0.0	8.7	0.1	0.0	3.3	0.1	0.0	3.7	0.1	0.1
Delay (s)	31.9	20.0	20.6	37.6	21.5	22.2	30.5	9.4	8.3	31.3	9.7	8.9
Level of Service	C	B	C	D	C	C	C	A	A	C	A	A
Approach Delay (s)		26.3			27.4			10.6			10.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

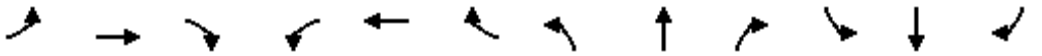


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	60	43	157	150	0	94	911	259	1	707	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	63	45	165	158	0	99	959	273	1	744	183
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	149	0	0	112
Lane Group Flow (vph)	60	63	7	165	158	0	99	959	124	1	744	71
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.6	9.9	9.9	8.3	14.6		5.1	30.3	30.3	0.5	25.7	25.7
Effective Green, g (s)	4.6	10.9	10.9	9.3	15.6		6.1	32.3	31.3	1.5	27.7	26.7
Actuated g/C Ratio	0.07	0.16	0.16	0.13	0.23		0.09	0.47	0.45	0.02	0.40	0.39
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	118	294	250	239	421		156	2380	718	38	2041	613
v/s Ratio Prot	0.03	0.03		c0.09	c0.08		c0.06	c0.19		0.00	0.15	
v/s Ratio Perm			0.00						0.08			0.04
v/c Ratio	0.51	0.21	0.03	0.69	0.38		0.63	0.40	0.17	0.03	0.36	0.12
Uniform Delay, d1	31.1	25.3	24.6	28.5	22.6		30.4	12.0	11.2	33.0	14.5	13.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.4	0.0	8.3	0.6		8.2	0.1	0.1	0.3	0.1	0.1
Delay (s)	34.5	25.7	24.6	36.8	23.1		38.5	12.1	11.3	33.3	14.6	13.7
Level of Service	C	C	C	D	C		D	B	B	C	B	B
Approach Delay (s)		28.6			30.1			13.9			14.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

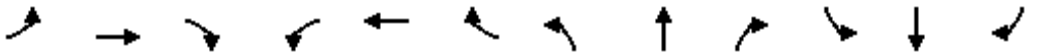
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	39	11	1248	84	0	907
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0		5.0
Lane Util. Factor	1.00	1.00	0.91	1.00		0.91
Frt	1.00	0.85	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	5085	1583		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	5085	1583		5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	12	1314	88	0	955
RTOR Reduction (vph)	0	11	0	28	0	0
Lane Group Flow (vph)	41	1	1314	60	0	955
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.5	6.5	36.2	36.2		36.2
Effective Green, g (s)	6.5	6.5	36.2	36.2		36.2
Actuated g/C Ratio	0.12	0.12	0.69	0.69		0.69
Clearance Time (s)	5.0	5.0	5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	218	195	3493	1087		3493
v/s Ratio Prot	c0.02		c0.26			0.19
v/s Ratio Perm		0.00		0.04		
v/c Ratio	0.19	0.01	0.38	0.06		0.27
Uniform Delay, d1	20.7	20.3	3.5	2.7		3.2
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	0.0	0.1	0.0		0.0
Delay (s)	21.2	20.3	3.6	2.7		3.2
Level of Service	C	C	A	A		A
Approach Delay (s)	21.0		3.5			3.2
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	3.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	209	30	17	54	14	10	72	1377	198	9	1268	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		5073	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.77	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		3902	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	220	32	18	57	15	11	76	1449	208	9	1335	118
RTOR Reduction (vph)	0	0	15	0	0	10	0	0	79	0	0	47
Lane Group Flow (vph)	220	32	3	57	15	1	0	1525	129	9	1335	71
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Prot		Perm
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases			4			8	2		2			6
Actuated Green, G (s)	14.6	17.3	17.3	4.4	7.1	7.1		49.8	49.8	0.6	55.4	55.4
Effective Green, g (s)	14.6	17.3	17.3	4.4	7.1	7.1		49.8	49.8	0.6	55.4	55.4
Actuated g/C Ratio	0.16	0.19	0.19	0.05	0.08	0.08		0.54	0.54	0.01	0.60	0.60
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	281	350	297	85	144	122		2110	856	12	3059	952
v/s Ratio Prot	c0.12	c0.02		0.03	0.01					0.01	c0.26	
v/s Ratio Perm			0.00			0.00		c0.39	0.08			0.04
v/c Ratio	0.78	0.09	0.01	0.67	0.10	0.01		0.72	0.15	0.75	0.44	0.07
Uniform Delay, d1	37.2	30.9	30.4	43.1	39.5	39.2		15.9	10.6	45.7	9.9	7.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.3	0.1	0.0	18.8	0.3	0.0		1.3	0.1	128.3	0.1	0.0
Delay (s)	50.5	31.0	30.5	62.0	39.9	39.3		17.2	10.7	173.9	10.0	7.7
Level of Service	D	C	C	E	D	D		B	B	F	B	A
Approach Delay (s)		46.8			55.0			16.4			10.8	
Approach LOS		D			D			B			B	

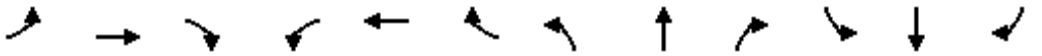
Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	92.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	50	60	191	116	363	71	1031	58	268	1348	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1561	1770	1863	1561	1770	3539	1545	1770	3539	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1561	1770	1863	1561	1770	3539	1545	1770	3539	1545
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	53	63	201	122	382	75	1085	61	282	1419	45
RTOR Reduction (vph)	0	0	54	0	0	268	0	0	38	0	0	21
Lane Group Flow (vph)	17	53	9	201	122	114	75	1085	23	282	1419	24
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	11.3	11.3	9.1	19.6	19.6	7.0	30.4	30.4	15.2	38.6	38.6
Effective Green, g (s)	0.8	11.3	11.3	9.1	19.6	19.6	7.0	30.4	30.4	15.2	38.6	38.6
Actuated g/C Ratio	0.01	0.14	0.14	0.11	0.24	0.24	0.09	0.37	0.37	0.19	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	17	257	215	196	445	373	151	1312	573	328	1666	727
v/s Ratio Prot	0.01	0.03		c0.11	0.07		0.04	0.31		c0.16	c0.40	
v/s Ratio Perm			0.01			c0.07			0.01			0.02
v/c Ratio	1.00	0.21	0.04	1.03	0.27	0.31	0.50	0.83	0.04	0.86	0.85	0.03
Uniform Delay, d1	40.6	31.4	30.6	36.5	25.4	25.6	35.8	23.4	16.5	32.4	19.2	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	218.3	0.4	0.1	71.1	0.3	0.5	2.6	4.4	0.0	19.5	4.4	0.0
Delay (s)	258.9	31.8	30.7	107.5	25.7	26.1	38.4	27.8	16.5	51.9	23.6	11.7
Level of Service	F	C	C	F	C	C	D	C	B	D	C	B
Approach Delay (s)		60.3			49.2			27.9			27.9	
Approach LOS		E			D			C			C	

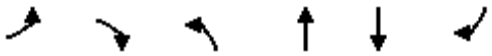
Intersection Summary			
HCM Average Control Delay	33.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



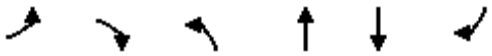
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	15	48	117	9	0	131	1016	106	0	1335	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	4.0	4.0		3.0	5.0	6.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00		0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1593	1676	1425	1593	1676		1593	3185	1425		3185	1425
Flt Permitted	0.95	1.00	1.00	0.75	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1593	1676	1425	1252	1676		1593	3185	1425		3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	67	16	51	123	9	0	138	1069	112	0	1405	96
RTOR Reduction (vph)	0	0	37	0	0	0	0	0	39	0	0	33
Lane Group Flow (vph)	67	16	14	123	9	0	138	1069	73	0	1405	63
Turn Type	Prot		Perm	Perm		Perm	Prot		Perm	Perm		Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Actuated Green, G (s)	7.0	28.4	28.4	17.4	17.4		10.1	70.5	70.5		56.4	56.4
Effective Green, g (s)	8.0	28.4	29.4	17.4	17.4		11.1	71.5	70.5		57.4	57.4
Actuated g/C Ratio	0.07	0.26	0.27	0.16	0.16		0.10	0.66	0.65		0.53	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.7	4.7		4.7	4.7
Lane Grp Cap (vph)	117	437	385	200	268		162	2091	923		1679	751
v/s Ratio Prot	c0.04	0.01			0.01		c0.09	0.34			c0.44	
v/s Ratio Perm			0.01	c0.10					0.05			0.04
v/c Ratio	0.57	0.04	0.04	0.61	0.03		0.85	0.51	0.08		0.84	0.08
Uniform Delay, d1	48.8	30.0	29.3	42.6	38.6		48.1	9.7	7.1		21.8	12.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.2	0.0	0.0	3.9	0.0		31.6	0.4	0.1		4.2	0.1
Delay (s)	53.0	30.1	29.3	46.5	38.7		79.7	10.0	7.2		26.0	12.8
Level of Service	D	C	C	D	D		E	B	A		C	B
Approach Delay (s)		41.2			46.0			17.1			25.1	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



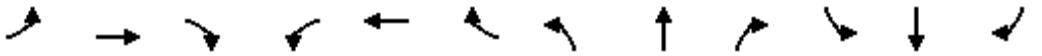
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	32	105	345	1138	1303	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	111	363	1198	1372	57
RTOR Reduction (vph)	0	101	0	0	0	26
Lane Group Flow (vph)	34	10	363	1198	1372	31
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	7.2	7.2	19.3	59.8	35.5	35.5
Effective Green, g (s)	7.2	7.2	19.3	59.8	35.5	35.5
Actuated g/C Ratio	0.09	0.09	0.25	0.78	0.46	0.46
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	166	148	444	2748	1632	730
v/s Ratio Prot	c0.02		c0.21	0.34	c0.39	
v/s Ratio Perm		0.01				0.02
v/c Ratio	0.20	0.07	0.82	0.44	0.84	0.04
Uniform Delay, d1	32.3	31.8	27.2	2.9	18.3	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	11.1	0.1	4.1	0.0
Delay (s)	32.9	32.0	38.3	3.0	22.4	11.4
Level of Service	C	C	D	A	C	B
Approach Delay (s)	32.2			11.2	21.9	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	77.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	118	117	208	1259	1258	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	124	123	219	1325	1324	191
RTOR Reduction (vph)	0	100	0	0	0	95
Lane Group Flow (vph)	124	23	219	1325	1324	96
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	11.3	11.3	10.9	44.7	29.8	29.8
Effective Green, g (s)	12.3	12.3	11.9	48.1	33.2	33.2
Actuated g/C Ratio	0.19	0.19	0.18	0.73	0.50	0.50
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	330	295	319	2579	1780	796
v/s Ratio Prot	c0.07		c0.12	0.37	c0.37	
v/s Ratio Perm		0.01				0.06
v/c Ratio	0.38	0.08	0.69	0.51	0.74	0.12
Uniform Delay, d1	23.5	22.2	25.3	3.9	13.0	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	4.8	0.3	2.0	0.1
Delay (s)	23.8	22.2	30.1	4.2	15.0	8.8
Level of Service	C	C	C	A	B	A
Approach Delay (s)	23.0			7.9	14.3	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

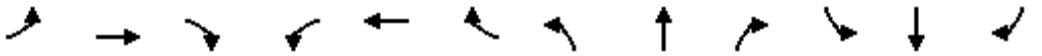


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	35	12	64	134	121	26	1239	38	34	1022	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9	3.7	3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	124	37	13	67	141	127	27	1304	40	36	1076	311
RTOR Reduction (vph)	0	0	11	0	0	111	0	0	20	0	0	151
Lane Group Flow (vph)	124	37	2	67	141	16	27	1304	20	36	1076	160
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	9.6	9.6	9.6	8.4	8.4	8.4	2.8	35.2	35.2	4.2	36.6	36.6
Effective Green, g (s)	11.2	11.2	10.6	10.0	10.0	10.0	3.8	38.6	38.6	5.2	40.0	40.0
Actuated g/C Ratio	0.14	0.14	0.14	0.13	0.13	0.13	0.05	0.50	0.50	0.07	0.52	0.52
Clearance Time (s)	4.9	4.9	4.9	5.3	5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1	2.0	2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	255	269	216	228	240	204	87	1760	787	119	1824	816
v/s Ratio Prot	c0.07	0.02		0.04	c0.08		0.02	c0.37		c0.02	0.30	
v/s Ratio Perm			0.00			0.01			0.01			0.10
v/c Ratio	0.49	0.14	0.01	0.29	0.59	0.08	0.31	0.74	0.03	0.30	0.59	0.20
Uniform Delay, d1	30.6	29.0	29.0	30.6	31.9	29.8	35.6	15.5	9.9	34.5	13.1	10.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.2	0.0	0.3	2.4	0.1	0.7	2.0	0.0	0.5	0.7	0.2
Delay (s)	32.1	29.2	29.0	30.9	34.2	29.8	36.4	17.5	10.0	35.0	13.8	10.4
Level of Service	C	C	C	C	C	C	D	B	A	C	B	B
Approach Delay (s)		31.2			31.9			17.7			13.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	12.6
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	32	25	1652	62	36	1249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1705		5085	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1705		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	26	1739	65	38	1315
RTOR Reduction (vph)	24	0	0	24	0	0
Lane Group Flow (vph)	36	0	1739	41	38	1315
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Actuated Green, G (s)	5.0		39.4	39.4	2.8	47.2
Effective Green, g (s)	5.0		39.4	39.4	2.8	47.2
Actuated g/C Ratio	0.08		0.63	0.63	0.05	0.76
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	137		3221	1003	80	3859
v/s Ratio Prot	c0.02		c0.34		0.02	c0.26
v/s Ratio Perm				0.03		
v/c Ratio	0.26		0.54	0.04	0.47	0.34
Uniform Delay, d1	26.9		6.4	4.3	29.0	2.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0		0.2	0.0	4.4	0.1
Delay (s)	27.9		6.5	4.3	33.4	2.5
Level of Service	C		A	A	C	A
Approach Delay (s)	27.9		6.4			3.4
Approach LOS	C		A			A

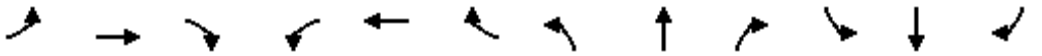
Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	139	4	244	18	2	15	27	1563	43	38	1125	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1567		1770	1596		1770	5085	1548	1770	5085	1548
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1567		1770	1596		1770	5085	1548	1770	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	146	4	257	19	2	16	28	1645	45	40	1184	112
RTOR Reduction (vph)	0	208	0	0	15	0	0	0	24	0	0	58
Lane Group Flow (vph)	146	53	0	19	3	0	28	1645	21	40	1184	54
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	6.3	9.5		0.5	3.7		0.5	23.6	23.6	1.3	24.4	24.4
Effective Green, g (s)	6.3	9.5		0.5	3.7		0.5	23.6	23.6	1.3	24.4	24.4
Actuated g/C Ratio	0.12	0.19		0.01	0.07		0.01	0.46	0.46	0.03	0.48	0.48
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	219	292		17	116		17	2358	718	45	2438	742
v/s Ratio Prot	c0.08	c0.03		0.01	0.00		0.02	c0.32		c0.02	0.23	
v/s Ratio Perm									0.01			0.03
v/c Ratio	0.67	0.18		1.12	0.03		1.65	0.70	0.03	0.89	0.49	0.07
Uniform Delay, d1	21.3	17.4		25.2	21.9		25.2	10.8	7.4	24.7	9.0	7.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.5	0.3		258.7	0.1		461.3	1.7	0.1	91.4	0.7	0.2
Delay (s)	28.8	17.7		283.9	22.0		486.5	12.6	7.5	116.1	9.7	7.3
Level of Service	C	B		F	C		F	B	A	F	A	A
Approach Delay (s)		21.7			156.5			20.2			12.7	
Approach LOS		C			F			C			B	

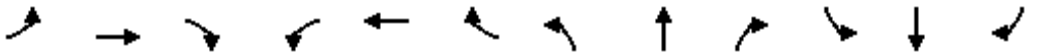
Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



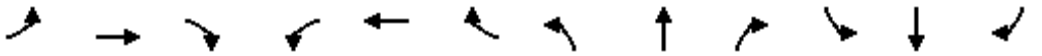
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	11	81	67	9	0	440	0	168	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0		5.0			
Lane Util. Factor		1.00	1.00		1.00		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (prot)		1863	1583		1784		1770		1583			
Flt Permitted		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (perm)		1863	1583		1784		1770		1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	12	85	71	9	0	463	0	177	0	0	0
RTOR Reduction (vph)	0	0	77	0	0	0	0	0	74	0	0	0
Lane Group Flow (vph)	0	12	8	0	80	0	463	0	103	0	0	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		7.1	7.1		8.6		29.8		42.7			
Effective Green, g (s)		7.1	7.1		8.6		29.8		42.7			
Actuated g/C Ratio		0.10	0.10		0.12		0.41		0.58			
Clearance Time (s)		5.0	5.0		5.0		5.0		5.0			
Vehicle Extension (s)		3.0	3.0		3.0		3.0		3.0			
Lane Grp Cap (vph)		180	153		209		719		921			
v/s Ratio Prot		c0.01			c0.04		c0.26					
v/s Ratio Perm			0.01						c0.07			
v/c Ratio		0.07	0.05		0.38		0.64		0.11			
Uniform Delay, d1		30.1	30.1		29.9		17.5		6.9			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.2	0.1		1.2		2.0		0.1			
Delay (s)		30.3	30.2		31.1		19.5		6.9			
Level of Service		C	C		C		B		A			
Approach Delay (s)		30.3			31.1			16.0			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	73.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



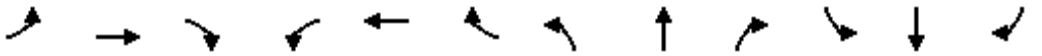
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	16	164	15	304	310	111	291	51	2	133	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1836	1583		1858	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.90	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1674	1583		1842	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	17	173	16	320	326	117	306	54	2	140	14
RTOR Reduction (vph)	0	0	113	0	0	214	0	0	35	0	0	11
Lane Group Flow (vph)	0	24	60	0	336	112	117	306	19	2	140	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		17.6	17.6		17.6	17.6	6.8	17.6	17.6	0.9	11.7	11.7
Effective Green, g (s)		17.6	17.6		17.6	17.6	6.8	17.6	17.6	0.9	11.7	11.7
Actuated g/C Ratio		0.34	0.34		0.34	0.34	0.13	0.34	0.34	0.02	0.23	0.23
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		577	545		634	545	236	1219	545	31	810	362
v/s Ratio Prot							c0.07	c0.09		0.00	0.04	
v/s Ratio Perm		0.01	0.04		c0.18	0.07			0.01			0.00
v/c Ratio		0.04	0.11		0.53	0.21	0.50	0.25	0.03	0.06	0.17	0.01
Uniform Delay, d1		11.1	11.4		13.4	11.8	20.6	12.0	11.1	24.7	15.8	15.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.0	0.1		0.8	0.2	1.6	0.1	0.0	0.9	0.1	0.0
Delay (s)		11.2	11.5		14.2	12.0	22.2	12.1	11.1	25.6	15.9	15.2
Level of Service		B	B		B	B	C	B	B	C	B	B
Approach Delay (s)		11.5			13.1			14.5			16.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	2	80	0	95	21	318	677	0	30	974	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1590			1863	1583	1770	3539		1770	3539	1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1590			1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	2	84	0	100	22	335	713	0	32	1025	115
RTOR Reduction (vph)	0	67	0	0	0	19	0	0	0	0	0	53
Lane Group Flow (vph)	44	19	0	0	100	3	335	713	0	32	1025	62
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	2.0	14.8			8.8	8.8	18.1	45.8		1.7	29.4	29.4
Effective Green, g (s)	2.0	14.8			8.8	8.8	18.1	45.8		1.7	29.4	29.4
Actuated g/C Ratio	0.03	0.20			0.12	0.12	0.24	0.62		0.02	0.40	0.40
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	48	317			221	187	431	2182		40	1400	626
v/s Ratio Prot	c0.02	0.01			c0.05		c0.19	0.20		0.02	c0.29	
v/s Ratio Perm						0.00						0.04
v/c Ratio	0.92	0.06			0.45	0.01	0.78	0.33		0.80	0.73	0.10
Uniform Delay, d1	36.1	24.1			30.5	28.9	26.2	6.8		36.1	19.1	14.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	97.8	0.1			1.5	0.0	8.6	0.1		69.2	2.0	0.1
Delay (s)	133.9	24.2			32.0	28.9	34.8	6.9		105.3	21.1	14.2
Level of Service	F	C			C	C	C	A		F	C	B
Approach Delay (s)		61.3			31.4			15.8			22.7	
Approach LOS		E			C			B			C	

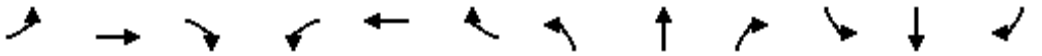
Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	1	11	263	5	251	23	458	64	33	754	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1778	1563	1770	1863	1563	1770	3539	1547	1770	3539	1547
Flt Permitted		0.83	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1552	1563	1770	1863	1563	1770	3539	1547	1770	3539	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	1	12	277	5	264	24	482	67	35	794	64
RTOR Reduction (vph)	0	0	11	0	0	188	0	0	46	0	0	43
Lane Group Flow (vph)	0	24	1	277	5	76	24	482	21	35	794	21
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Perm		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Actuated Green, G (s)		4.7	4.7	16.4	16.4	16.4	1.0	18.1	18.1	1.5	18.6	18.6
Effective Green, g (s)		4.7	4.7	16.4	16.4	16.4	1.0	18.1	18.1	1.5	18.6	18.6
Actuated g/C Ratio		0.08	0.08	0.29	0.29	0.29	0.02	0.32	0.32	0.03	0.33	0.33
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		129	130	512	539	452	31	1130	494	47	1161	507
v/s Ratio Prot				c0.16	0.00		0.01	0.14		c0.02	c0.22	
v/s Ratio Perm		c0.02	0.00			0.05			0.01			0.01
v/c Ratio		0.19	0.01	0.54	0.01	0.17	0.77	0.43	0.04	0.74	0.68	0.04
Uniform Delay, d1		24.2	23.9	17.0	14.4	15.1	27.7	15.2	13.3	27.4	16.5	13.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7	0.0	1.2	0.0	0.2	73.6	0.3	0.0	47.2	1.7	0.0
Delay (s)		24.9	23.9	18.1	14.4	15.2	101.4	15.5	13.4	74.6	18.2	13.0
Level of Service		C	C	B	B	B	F	B	B	E	B	B
Approach Delay (s)		24.6			16.7			18.8			20.0	
Approach LOS		C			B			B			C	

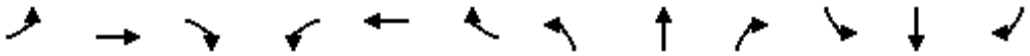
Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



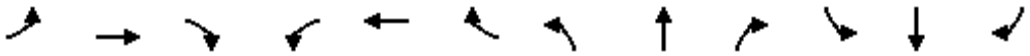
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	0	35	9	3	22	27	625	15	37	1133	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4		3.0	3.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1795	1583	1770	3527		1770	3497	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1795	1583	1770	3527		1770	3497	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	0	37	9	3	23	28	658	16	39	1193	103
RTOR Reduction (vph)	0	0	31	0	0	22	0	1	0	0	4	0
Lane Group Flow (vph)	0	68	6	0	12	1	28	673	0	39	1292	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		10.7	10.7		2.9	2.9	2.3	41.2		4.2	43.1	
Effective Green, g (s)		11.7	11.7		3.9	3.9	3.3	43.5		5.2	45.4	
Actuated g/C Ratio		0.15	0.15		0.05	0.05	0.04	0.57		0.07	0.59	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		270	241		91	80	76	2000		120	2070	
v/s Ratio Prot		c0.04			c0.01		0.02	0.19		c0.02	c0.37	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.25	0.02		0.13	0.01	0.37	0.34		0.33	0.62	
Uniform Delay, d1		28.6	27.6		34.8	34.6	35.7	8.9		34.1	10.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.2	0.0	1.1	0.1		0.6	0.7	
Delay (s)		28.8	27.7		35.0	34.6	36.8	9.0		34.7	10.8	
Level of Service		C	C		D	C	D	A		C	B	
Approach Delay (s)		28.4			34.7			10.1			11.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



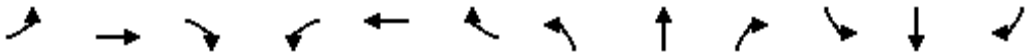
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	16	33	23	4	18	28	654	25	15	1091	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.95		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1792	1583		1717		1770	3520		1770	3507	
Flt Permitted		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1792	1583		1717		1770	3520		1770	3507	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	17	35	24	4	19	29	688	26	16	1148	74
RTOR Reduction (vph)	0	0	31	0	18	0	0	2	0	0	4	0
Lane Group Flow (vph)	0	82	4	0	29	0	29	712	0	16	1218	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		8.6	8.6		4.6		1.6	37.9		0.9	37.2	
Effective Green, g (s)		8.6	8.6		4.6		1.6	37.9		0.9	37.2	
Actuated g/C Ratio		0.12	0.12		0.07		0.02	0.54		0.01	0.53	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		221	195		113		41	1914		23	1872	
v/s Ratio Prot		c0.05			c0.02		c0.02	0.20		0.01	c0.35	
v/s Ratio Perm			0.00									
v/c Ratio		0.37	0.02		0.26		0.71	0.37		0.70	0.65	
Uniform Delay, d1		28.1	26.9		30.9		33.8	9.1		34.3	11.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		0.4		36.5	0.1		54.1	0.9	
Delay (s)		28.4	26.9		31.4		70.4	9.2		88.4	12.5	
Level of Service		C	C		C		E	A		F	B	
Approach Delay (s)		28.0			31.4			11.6			13.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	17.7
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	5	111	13	11	7	309	737	22	13	1093	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1788	1583		1814	1583	1770	3524		1770	3519	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1788	1583		1814	1583	1770	3524		1770	3519	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	5	117	14	12	7	325	776	23	14	1151	46
RTOR Reduction (vph)	0	0	105	0	0	6	0	2	0	0	3	0
Lane Group Flow (vph)	0	31	12	0	26	1	325	797	0	14	1194	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		6.6	6.6		5.0	5.0	15.1	44.2		0.9	30.0	
Effective Green, g (s)		7.6	7.6		6.0	6.0	16.1	46.9		1.9	32.7	
Actuated g/C Ratio		0.10	0.10		0.08	0.08	0.22	0.63		0.03	0.44	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		183	162		146	128	383	2221		45	1547	
v/s Ratio Prot		c0.02			c0.01		c0.18	0.23		0.01	c0.34	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.17	0.07		0.18	0.00	0.85	0.36		0.31	0.77	
Uniform Delay, d1		30.5	30.2		31.9	31.5	28.0	6.6		35.6	17.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.2		0.6	0.0	15.3	0.1		1.4	2.6	
Delay (s)		31.0	30.4		32.5	31.5	43.3	6.7		37.0	20.3	
Level of Service		C	C		C	C	D	A		D	C	
Approach Delay (s)		30.5			32.3			17.3			20.4	
Approach LOS		C			C			B			C	

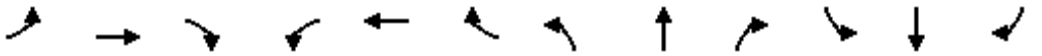
Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	13	28	83	16	467	47	1099	17	131	1484	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1800	1527	1681	1711	1583	1770	3528		1770	3495	
Flt Permitted		0.97	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1800	1527	1681	1711	1583	1770	3528		1770	3495	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	14	29	87	17	492	49	1157	18	138	1562	97
RTOR Reduction (vph)	0	0	26	0	0	328	0	0	0	0	3	0
Lane Group Flow (vph)	0	47	3	51	53	164	49	1175	0	138	1656	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		9.5	9.5	14.1	14.1	14.1	4.5	50.8		10.4	56.7	
Effective Green, g (s)		10.5	10.5	15.1	15.1	15.1	6.5	52.8		12.4	58.7	
Actuated g/C Ratio		0.10	0.10	0.15	0.15	0.15	0.06	0.51		0.12	0.57	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		182	154	245	249	230	111	1795		211	1976	
v/s Ratio Prot		c0.03		0.03	0.03		0.03	0.33		c0.08	c0.47	
v/s Ratio Perm			0.00			c0.10						
v/c Ratio		0.26	0.02	0.21	0.21	0.71	0.44	0.65		0.65	0.84	
Uniform Delay, d1		43.1	42.0	39.1	39.1	42.3	46.9	18.8		43.7	18.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.0	0.3	0.3	9.3	1.0	0.9		5.5	3.4	
Delay (s)		43.6	42.0	39.4	39.4	51.6	47.9	19.7		49.1	22.0	
Level of Service		D	D	D	D	D	D	B		D	C	
Approach Delay (s)		43.0			49.5			20.8			24.1	
Approach LOS		D			D			C			C	

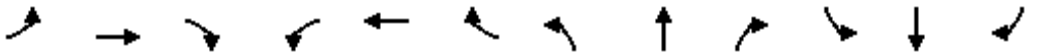
Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	103.8	Sum of lost time (s)	9.3
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



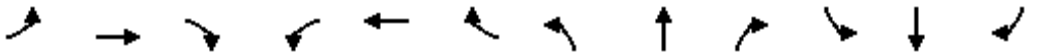
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	0	42	13	0	23	50	1072	33	37	1488	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	0	44	14	0	24	53	1128	35	39	1566	5
RTOR Reduction (vph)	0	0	39	0	0	23	0	2	0	0	0	1
Lane Group Flow (vph)	36	0	5	14	0	1	53	1161	0	39	1566	4
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	10.9		10.9	4.7		4.7	4.6	54.7		4.1	54.2	54.2
Effective Green, g (s)	10.9		10.9	5.7		5.7	4.6	55.7		5.1	55.2	54.2
Actuated g/C Ratio	0.12		0.12	0.06		0.06	0.05	0.60		0.06	0.60	0.59
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	209		187	110		98	88	2131		98	2121	932
v/s Ratio Prot	c0.02			c0.01			c0.03	0.33		0.02	c0.44	
v/s Ratio Perm			0.00			0.00						0.00
v/c Ratio	0.17		0.03	0.13		0.02	0.60	0.55		0.40	0.74	0.00
Uniform Delay, d1	36.5		35.9	40.8		40.6	42.9	10.7		42.0	13.3	7.8
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1		0.0	0.2		0.0	7.7	0.4		1.0	1.6	0.0
Delay (s)	36.7		35.9	41.0		40.6	50.6	11.2		43.0	14.8	7.8
Level of Service	D		D	D		D	D	B		D	B	A
Approach Delay (s)		36.3			40.8			12.9			15.5	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	92.1	Sum of lost time (s)	15.7
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



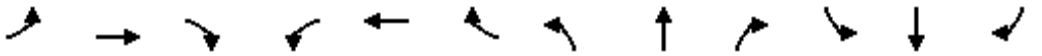
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	525	6	321	188	6	92	104	1135	59	35	1114	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	553	6	338	198	6	97	109	1195	62	37	1173	176
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	105
Lane Group Flow (vph)	282	277	338	198	6	97	109	1195	62	37	1173	71
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	16.1	16.1	76.4	9.9	9.9	76.4	5.0	28.4	76.4	4.0	27.4	27.4
Effective Green, g (s)	17.1	17.1	76.4	10.9	10.9	76.4	6.0	31.8	76.4	5.0	30.8	30.8
Actuated g/C Ratio	0.22	0.22	1.00	0.14	0.14	1.00	0.08	0.42	1.00	0.07	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	376	378	1583	253	266	1583	139	2117	1583	116	2050	638
v/s Ratio Prot	c0.17	0.16		c0.11	0.00		c0.06	c0.23		0.02	0.23	
v/s Ratio Perm			c0.21			0.06			0.04			0.04
v/c Ratio	0.75	0.73	0.21	0.78	0.02	0.06	0.78	0.56	0.04	0.32	0.57	0.11
Uniform Delay, d1	27.7	27.5	0.0	31.6	28.2	0.0	34.6	17.0	0.0	34.1	17.7	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	6.8	0.3	14.5	0.0	0.1	22.9	0.5	0.0	1.6	0.6	0.1
Delay (s)	35.4	34.3	0.3	46.1	28.2	0.1	57.4	17.5	0.0	35.7	18.2	14.4
Level of Service	D	C	A	D	C	A	E	B	A	D	B	B
Approach Delay (s)		21.9			30.9			19.9			18.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	76.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



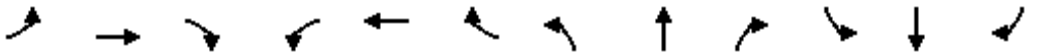
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	3	1	139	3	188	5	920	37	67	1966	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0		3.0	-0.4	3.0	4.0	0.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1688	1583	1770	1588		1770	3539	1583	1770	5085	
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.24	1.00	
Satd. Flow (perm)	1681	1688	1583	1770	1588		1770	3539	1583	443	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	3	1	146	3	198	5	968	39	71	2069	1
RTOR Reduction (vph)	0	0	1	0	71	0	0	0	18	0	0	0
Lane Group Flow (vph)	88	88	0	146	130	0	5	968	21	71	2070	0
Turn Type	Split		Perm	Split			Prot		Perm	Perm		
Protected Phases	4	4		8	8		5	2			6	
Permitted Phases			4						2	6		
Actuated Green, G (s)	7.8	7.8	7.8	10.6	10.6		1.0	37.0	37.0	31.0	31.0	
Effective Green, g (s)	8.8	7.8	8.8	10.6	10.6		2.0	40.4	37.0	31.0	34.4	
Actuated g/C Ratio	0.13	0.12	0.13	0.16	0.16		0.03	0.60	0.55	0.46	0.51	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0		4.0	3.0	3.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	219	195	207	278	250		53	2121	869	204	2595	
v/s Ratio Prot	c0.05	0.05		c0.08	0.08		0.00	c0.27			c0.41	
v/s Ratio Perm			0.00						0.01	0.16		
v/c Ratio	0.40	0.45	0.00	0.53	0.52		0.09	0.46	0.02	0.35	0.80	
Uniform Delay, d1	26.9	27.8	25.5	26.1	26.1		31.8	7.4	6.9	11.7	13.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	1.7	0.0	1.8	2.0		0.8	0.2	0.0	1.0	1.8	
Delay (s)	28.1	29.5	25.5	27.9	28.0		32.6	7.6	7.0	12.7	15.4	
Level of Service	C	C	C	C	C		C	A	A	B	B	
Approach Delay (s)		28.8			28.0			7.7			15.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	8.2
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



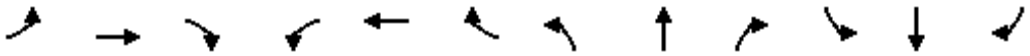
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	9	466	0	4	103	41	788	0	294	1757	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	0.95		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.86	0.85		0.87		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1514	1504		1620		1770	3539		1770	3539	1583
Flt Permitted	0.68	1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1276	1514	1504		1620		1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	9	491	0	4	108	43	829	0	309	1849	73
RTOR Reduction (vph)	0	74	74	0	88	0	0	0	0	0	0	21
Lane Group Flow (vph)	53	176	176	0	24	0	43	829	0	309	1849	52
Turn Type	Perm		Perm				Prot			Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4									6
Actuated Green, G (s)	15.7	15.7	15.7		15.7		2.1	34.6		19.9	52.4	52.4
Effective Green, g (s)	15.7	15.7	15.7		15.7		2.1	34.6		19.9	52.4	52.4
Actuated g/C Ratio	0.18	0.18	0.18		0.18		0.02	0.41		0.23	0.62	0.62
Clearance Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	235	279	277		299		44	1437		413	2177	974
v/s Ratio Prot		0.12			0.01		0.02	0.23		c0.17	c0.52	
v/s Ratio Perm	0.04		c0.12									0.03
v/c Ratio	0.23	0.63	0.63		0.08		0.98	0.58		0.75	0.85	0.05
Uniform Delay, d1	29.6	32.1	32.1		28.8		41.5	19.6		30.3	13.2	6.5
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	4.4	4.7		0.1		125.9	0.6		7.3	3.3	0.0
Delay (s)	30.1	36.5	36.8		28.9		167.4	20.2		37.6	16.5	6.6
Level of Service	C	D	D		C		F	C		D	B	A
Approach Delay (s)		36.0			28.9			27.4			19.1	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	85.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	9	60	126	3	18	17	796	333	14	1966	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	2.6		2.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1583	1681	1689	1583	1770	4860		1770	5071	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1793	1583	1681	1689	1583	1770	4860		1770	5071	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	9	63	133	3	19	18	838	351	15	2069	39
RTOR Reduction (vph)	0	0	56	0	0	17	0	64	0	0	2	0
Lane Group Flow (vph)	0	41	7	68	68	2	18	1125	0	15	2106	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4						
Actuated Green, G (s)		7.5	7.5	8.4	8.4	8.4	0.9	40.1		0.8	39.0	
Effective Green, g (s)		8.5	8.5	9.4	9.4	9.4	1.9	43.5		1.8	42.4	
Actuated g/C Ratio		0.12	0.12	0.13	0.13	0.13	0.03	0.59		0.02	0.57	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	6.0		3.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2	0.2	2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)		207	182	214	215	202	46	2865		43	2913	
v/s Ratio Prot		c0.02		c0.04	0.04		c0.01	0.23		0.01	c0.42	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.20	0.04	0.32	0.32	0.01	0.39	0.39		0.35	0.72	
Uniform Delay, d1		29.6	29.0	29.3	29.3	28.1	35.4	8.1		35.4	11.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0	0.3	0.3	0.0	2.0	0.1		1.8	1.0	
Delay (s)		29.7	29.1	29.6	29.6	28.2	37.4	8.2		37.2	12.4	
Level of Service		C	C	C	C	C	D	A		D	B	
Approach Delay (s)		29.3			29.4			8.6			12.6	
Approach LOS		C			C			A			B	

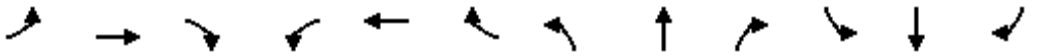
Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	11.6
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	23	193	71	12	35	315	1366	12	9	2190	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.96		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	1526		1787	1583	1770	5076		1770	5043	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1785	1526		1787	1583	1770	5076		1770	5043	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	157	24	203	75	13	37	332	1438	13	9	2305	96
RTOR Reduction (vph)	0	0	176	0	0	35	0	1	0	0	3	0
Lane Group Flow (vph)	0	181	27	0	88	2	332	1450	0	9	2398	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		13.7	13.7		5.0	5.0	24.0	81.4		0.6	59.0	
Effective Green, g (s)		16.0	16.0		7.3	7.3	25.0	84.4		1.6	62.0	
Actuated g/C Ratio		0.13	0.13		0.06	0.06	0.21	0.70		0.01	0.52	
Clearance Time (s)		5.3	5.3		4.0	4.0	3.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		238	203		109	96	369	3570		24	2606	
v/s Ratio Prot		c0.10			c0.05		c0.19	0.29		0.01	c0.48	
v/s Ratio Perm			0.02			0.00						
v/c Ratio		0.76	0.13		0.81	0.02	0.90	0.41		0.38	0.92	
Uniform Delay, d1		50.2	45.9		55.7	53.0	46.3	7.4		58.7	26.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		12.1	0.1		32.3	0.0	23.2	0.2		3.6	6.7	
Delay (s)		62.2	46.0		87.9	53.0	69.5	7.6		62.3	33.4	
Level of Service		E	D		F	D	E	A		E	C	
Approach Delay (s)		53.7			77.6			19.1			33.5	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

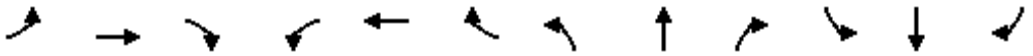
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	383	138	404	1078	178	186	1529	189	256	1649	434
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1532	1770	5085	1534	3433	5085	1560	3433	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1532	1770	5085	1534	3433	5085	1560	3433	5085	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	152	403	145	425	1135	187	196	1609	199	269	1736	457
RTOR Reduction (vph)	0	0	121	0	0	105	0	0	0	0	0	0
Lane Group Flow (vph)	152	403	24	425	1135	82	196	1609	199	269	1736	457
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	8.7	16.8	16.8	30.8	38.9	38.9	8.4	41.9	120.0	11.1	44.3	120.0
Effective Green, g (s)	9.7	19.8	19.8	31.8	41.9	41.9	9.4	44.9	120.0	12.1	47.3	120.0
Actuated g/C Ratio	0.08	0.17	0.17	0.27	0.35	0.35	0.08	0.37	1.00	0.10	0.39	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	278	584	253	469	1776	536	269	1903	1560	346	2004	1560
v/s Ratio Prot	0.04	0.11		c0.24	c0.22		0.06	0.32		c0.08	c0.34	
v/s Ratio Perm			0.02			0.05			0.13			c0.29
v/c Ratio	0.55	0.69	0.09	0.91	0.64	0.15	0.73	0.85	0.13	0.78	0.87	0.29
Uniform Delay, d1	53.0	47.2	42.5	42.7	32.7	26.8	54.1	34.4	0.0	52.6	33.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	3.7	0.2	20.5	0.8	0.2	8.1	4.8	0.2	9.6	5.3	0.5
Delay (s)	54.2	50.9	42.7	63.1	33.5	27.0	62.1	39.2	0.2	62.3	38.8	0.5
Level of Service	D	D	D	E	C	C	E	D	A	E	D	A
Approach Delay (s)		49.9			40.0			37.6			34.2	
Approach LOS		D			D			D			C	

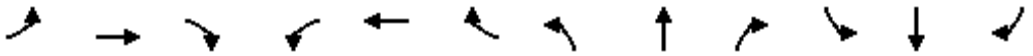
Intersection Summary			
HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1	25	28	1	19	30	1909	41	34	2148	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0	4.7	2.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.91	
Frt		0.93			0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1698			1712		1770	3539	1583	1770	5081	
Flt Permitted		0.88			0.88		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1533			1544		1770	3539	1583	1770	5081	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	1	26	29	1	20	32	2009	43	36	2261	14
RTOR Reduction (vph)	0	23	0	0	18	0	0	0	8	0	1	0
Lane Group Flow (vph)	0	30	0	0	32	0	32	2009	35	36	2274	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		6.5			6.5		1.5	48.5	48.5	1.5	47.5	
Effective Green, g (s)		7.5			7.5		2.5	51.2	49.5	2.5	50.2	
Actuated g/C Ratio		0.11			0.11		0.04	0.74	0.72	0.04	0.73	
Clearance Time (s)		4.0			4.0		4.0	5.7	5.7	3.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8	3.8	2.0	3.8	
Lane Grp Cap (vph)		166			167		64	2618	1132	64	3686	
v/s Ratio Prot							0.02	c0.57		c0.02	0.45	
v/s Ratio Perm		0.02			c0.02				0.02			
v/c Ratio		0.18			0.19		0.50	0.77	0.03	0.56	0.62	
Uniform Delay, d1		28.1			28.1		32.7	5.4	2.9	32.8	4.7	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5			0.6		2.2	1.5	0.0	6.6	0.3	
Delay (s)		28.6			28.7		35.0	6.9	2.9	39.4	5.1	
Level of Service		C			C		C	A	A	D	A	
Approach Delay (s)		28.6			28.7			7.2			5.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	5.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



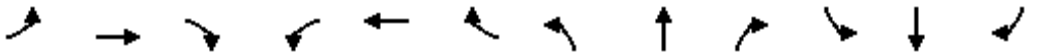
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	72	154	137	346	105	387	2218	85	95	2073	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5069	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5069	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	91	76	162	144	364	111	407	2335	89	100	2182	42
RTOR Reduction (vph)	0	0	138	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	91	76	24	144	364	111	407	2335	89	100	2223	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	8.4	14.9	14.9	7.7	14.2	120.0	16.8	71.8	120.0	5.9	60.9	
Effective Green, g (s)	9.4	17.9	17.9	8.7	17.2	120.0	17.8	74.8	120.0	6.9	63.9	
Actuated g/C Ratio	0.08	0.15	0.15	0.07	0.14	1.00	0.15	0.62	1.00	0.06	0.53	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	139	528	230	249	507	1562	509	3170	1562	197	2699	
v/s Ratio Prot	c0.05	0.02		0.04	c0.10		c0.12	0.46		0.03	c0.44	
v/s Ratio Perm			0.02			c0.07			0.06			
v/c Ratio	0.65	0.14	0.11	0.58	0.72	0.07	0.80	0.74	0.06	0.51	0.82	
Uniform Delay, d1	53.7	44.4	44.1	53.9	49.1	0.0	49.4	15.7	0.0	54.9	23.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.2	0.2	0.3	2.0	5.1	0.1	8.0	1.6	0.1	0.8	2.2	
Delay (s)	61.9	44.6	44.4	55.9	54.2	0.1	57.4	17.3	0.1	55.7	25.6	
Level of Service	E	D	D	E	D	A	E	B	A	E	C	
Approach Delay (s)		49.3			44.9			22.5			26.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	37	268	2456	205	279	2026
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	2.0	2.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	39	282	2585	216	294	2133
RTOR Reduction (vph)	0	0	0	29	0	0
Lane Group Flow (vph)	39	282	2585	187	294	2133
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	7.4	93.9	54.3	54.3	17.2	76.5
Effective Green, g (s)	8.4	93.9	56.3	56.3	18.2	78.5
Actuated g/C Ratio	0.09	1.00	0.60	0.60	0.19	0.84
Clearance Time (s)	6.0		6.0	6.0	3.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	158	1583	3049	949	343	4251
v/s Ratio Prot	0.02		c0.51		c0.17	0.42
v/s Ratio Perm		c0.18		0.12		
v/c Ratio	0.25	0.18	0.85	0.20	0.86	0.50
Uniform Delay, d1	39.8	0.0	15.3	8.5	36.6	2.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.2	2.4	0.1	18.0	0.1
Delay (s)	40.6	0.2	17.7	8.7	54.6	2.3
Level of Service	D	A	B	A	D	A
Approach Delay (s)	5.2		17.0			8.6
Approach LOS	A		B			A

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

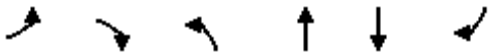


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	20	35	460	84	743	127	1268	261	359	1308	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.88	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1557	1504	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1557	1504	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	21	37	484	88	782	134	1335	275	378	1377	8
RTOR Reduction (vph)	0	0	35	0	155	342	0	0	157	0	0	3
Lane Group Flow (vph)	5	21	2	484	285	88	134	1335	118	378	1377	5
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	4.0	4.0	16.1	16.1	16.1	7.0	33.2	33.2	9.0	35.2	35.2
Effective Green, g (s)	4.0	4.0	4.0	16.1	16.1	16.1	7.0	33.2	33.2	9.0	35.2	35.2
Actuated g/C Ratio	0.05	0.05	0.05	0.21	0.21	0.21	0.09	0.42	0.42	0.11	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	175	95	81	706	320	309	158	1501	671	395	1591	712
v/s Ratio Prot	0.00	c0.01		0.14	c0.18		0.08	0.38		c0.11	c0.39	
v/s Ratio Perm			0.00			0.06			0.07			0.00
v/c Ratio	0.03	0.22	0.02	0.69	0.89	0.29	0.85	0.89	0.18	0.96	0.87	0.01
Uniform Delay, d1	35.3	35.7	35.3	28.8	30.2	26.2	35.1	20.9	14.0	34.5	19.4	11.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.2	0.1	2.8	25.1	0.5	32.2	8.3	0.6	33.9	6.6	0.0
Delay (s)	35.4	36.8	35.4	31.5	55.3	26.8	67.3	29.1	14.6	68.4	26.0	11.9
Level of Service	D	D	D	C	E	C	E	C	B	E	C	B
Approach Delay (s)		35.9			37.7			29.8			35.0	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

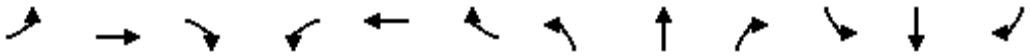
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	115	37	570	138	66	1192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	39	600	145	69	1255
RTOR Reduction (vph)	0	31	0	63	0	0
Lane Group Flow (vph)	121	8	600	82	69	1255
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.3	9.3	26.7	26.7	3.8	33.5
Effective Green, g (s)	10.8	10.8	29.7	29.7	4.8	36.5
Actuated g/C Ratio	0.20	0.20	0.56	0.56	0.09	0.69
Clearance Time (s)	4.0	4.0	6.0	6.0	3.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	362	324	1991	890	161	2446
v/s Ratio Prot	c0.07		0.17		0.04	c0.35
v/s Ratio Perm		0.01		0.05		
v/c Ratio	0.33	0.02	0.30	0.09	0.43	0.51
Uniform Delay, d1	17.9	16.8	6.1	5.3	22.7	3.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.2	0.1	0.7	0.3
Delay (s)	18.5	16.8	6.3	5.4	23.4	4.2
Level of Service	B	B	A	A	C	A
Approach Delay (s)	18.1		6.1			5.2
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	5.5
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	25	442	202	743	1504	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	3.0	3.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	465	213	782	1583	17
RTOR Reduction (vph)	0	196	0	0	0	7
Lane Group Flow (vph)	26	269	213	782	1583	10
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	16.3	16.3	12.0	61.3	44.3	44.3
Effective Green, g (s)	16.3	16.3	12.0	63.3	46.3	44.3
Actuated g/C Ratio	0.19	0.19	0.14	0.72	0.53	0.51
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	329	295	242	2557	1870	801
v/s Ratio Prot	0.01		c0.12	0.22	c0.45	
v/s Ratio Perm		c0.17				0.01
v/c Ratio	0.08	0.91	0.88	0.31	0.85	0.01
Uniform Delay, d1	29.4	34.9	37.1	4.3	17.6	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	30.4	28.8	0.1	3.7	0.0
Delay (s)	29.6	65.4	65.9	4.4	21.4	10.8
Level of Service	C	E	E	A	C	B
Approach Delay (s)	63.5			17.6	21.3	
Approach LOS	E			B	C	

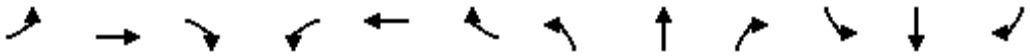
Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	87.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1	8	254	7	294	8	930	69	226	1636	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.92			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1689			1776	1556	1770	3496		1770	3527	
Flt Permitted		0.91			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1561			1344	1556	1770	3496		1770	3527	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1	8	267	7	309	8	979	73	238	1722	35
RTOR Reduction (vph)	0	6	0	0	0	211	0	7	0	0	2	0
Lane Group Flow (vph)	0	8	0	0	274	98	8	1045	0	238	1755	0
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						
Actuated Green, G (s)		16.5			16.5	16.5	1.2	29.7		11.9	40.4	
Effective Green, g (s)		17.5			17.5	17.5	2.2	32.7		12.9	43.4	
Actuated g/C Ratio		0.24			0.24	0.24	0.03	0.46		0.18	0.60	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		380			328	379	54	1592		318	2132	
v/s Ratio Prot							0.00	0.30		c0.13	c0.50	
v/s Ratio Perm		0.01			c0.20	0.06						
v/c Ratio		0.02			0.84	0.26	0.15	0.66		0.75	0.82	
Uniform Delay, d1		20.6			25.8	21.9	33.9	15.2		27.9	11.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			15.9	0.1	0.5	1.2		8.2	3.0	
Delay (s)		20.6			41.7	22.0	34.4	16.4		36.1	14.2	
Level of Service		C			D	C	C	B		D	B	
Approach Delay (s)		20.6			31.3			16.5			16.8	
Approach LOS		C			C			B			B	

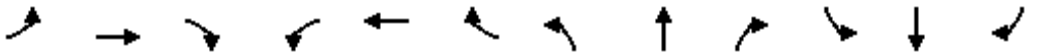
Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	71.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	0	31	63	4	19	42	960	8	20	1754	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	1531		1779	1474	1770	3539	1544	1770	3527	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1770	1531		1779	1474	1770	3539	1544	1770	3527	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	0	33	66	4	20	44	1011	8	21	1846	38
RTOR Reduction (vph)	0	0	30	0	0	19	0	0	2	0	1	0
Lane Group Flow (vph)	0	57	3	0	70	1	44	1011	6	21	1883	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		7.6	7.6		3.2	3.2	3.6	59.5	59.5	2.0	57.9	
Effective Green, g (s)		8.6	8.6		4.2	4.2	4.6	62.5	60.5	3.0	60.9	
Actuated g/C Ratio		0.10	0.10		0.05	0.05	0.05	0.69	0.67	0.03	0.68	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		169	146		83	69	90	2458	1038	59	2387	
v/s Ratio Prot		c0.03			c0.04		c0.02	0.29		0.01	c0.53	
v/s Ratio Perm			0.00			0.00			0.00			
v/c Ratio		0.34	0.02		0.84	0.01	0.49	0.41	0.01	0.36	0.79	
Uniform Delay, d1		38.0	36.9		42.6	40.9	41.6	5.9	4.9	42.6	10.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4	0.0		49.0	0.0	1.5	0.3	0.0	1.3	2.7	
Delay (s)		38.5	36.9		91.6	41.0	43.1	6.1	4.9	43.9	12.8	
Level of Service		D	D		F	D	D	A	A	D	B	
Approach Delay (s)		37.9			80.3			7.7			13.2	
Approach LOS		D			F			A			B	

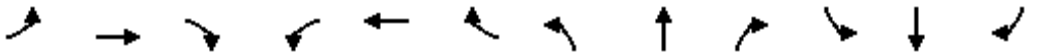
Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	257	0	445	12	4	2	875	718	0	4	1016	809
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1770		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1770		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	271	0	468	13	4	2	921	756	0	4	1069	852
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	360
Lane Group Flow (vph)	135	136	468	13	4	0	921	756	0	4	1069	492
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	11.2	11.2	90.0	4.2	4.2		26.7	55.5		1.4	32.2	32.2
Effective Green, g (s)	13.2	13.2	90.0	6.2	6.2		28.7	57.5		3.4	34.2	34.2
Actuated g/C Ratio	0.15	0.15	1.00	0.07	0.07		0.32	0.64		0.04	0.38	0.38
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	247	247	1478	122	122		1095	2261		67	1345	562
v/s Ratio Prot	0.08	c0.08		0.01	0.00		c0.27	0.21		0.00	0.30	
v/s Ratio Perm			c0.32									c0.33
v/c Ratio	0.55	0.55	0.32	0.11	0.03		0.84	0.33		0.06	0.79	0.88
Uniform Delay, d1	35.6	35.6	0.0	39.3	39.1		28.5	7.5		41.8	24.8	25.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.5	2.6	0.6	0.4	0.1		6.0	0.4		0.4	3.3	14.3
Delay (s)	38.1	38.3	0.6	39.7	39.2		34.5	7.9		42.1	28.1	40.2
Level of Service	D	D	A	D	D		C	A		D	C	D
Approach Delay (s)		14.4			39.5			22.5			33.5	
Approach LOS		B			D			C			C	

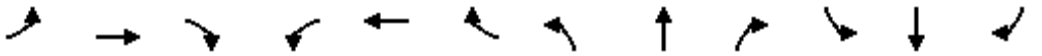
Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1	30	0	3	30	39	1207	0	34	931	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1592			1863	1583	1770	3539		1770	3489	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1592			1863	1583	1770	3539		1770	3489	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	1	32	0	3	32	41	1271	0	36	980	102
RTOR Reduction (vph)	0	28	0	0	0	30	0	0	0	0	6	0
Lane Group Flow (vph)	63	5	0	0	3	2	41	1271	0	36	1076	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	7.9	7.9			4.2	4.2	2.3	38.1		1.3	37.1	
Effective Green, g (s)	7.9	7.9			4.2	4.2	2.3	38.1		1.3	37.1	
Actuated g/C Ratio	0.11	0.11			0.06	0.06	0.03	0.53		0.02	0.52	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	196	176			109	93	57	1886		32	1810	
v/s Ratio Prot	c0.04	0.00			c0.00		c0.02	c0.36		0.02	0.31	
v/s Ratio Perm						0.00						
v/c Ratio	0.32	0.03			0.03	0.02	0.72	0.67		1.12	0.59	
Uniform Delay, d1	29.3	28.4			31.7	31.7	34.3	12.2		35.1	12.0	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.1			0.1	0.1	35.1	1.0		199.2	0.5	
Delay (s)	30.3	28.4			31.8	31.8	69.4	13.1		234.3	12.5	
Level of Service	C	C			C	C	E	B		F	B	
Approach Delay (s)		29.6			31.8			14.9			19.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	71.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

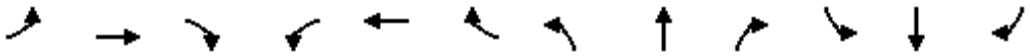


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	2	105	22	1	26	84	820	25	72	1015	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1770	1593		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1770	1593		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	187	2	111	23	1	27	88	863	26	76	1068	115
RTOR Reduction (vph)	0	0	94	0	25	0	0	0	14	0	0	63
Lane Group Flow (vph)	95	94	17	23	3	0	88	863	12	76	1068	52
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.4	11.4	11.4	4.6	4.6		6.9	33.6	33.6	6.4	33.1	33.1
Effective Green, g (s)	11.4	11.4	11.4	4.6	4.6		6.9	33.6	33.6	6.4	33.1	33.1
Actuated g/C Ratio	0.16	0.16	0.16	0.06	0.06		0.09	0.46	0.46	0.09	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	261	262	246	111	100		167	1622	726	155	1598	715
v/s Ratio Prot	c0.06	0.06		c0.01	0.00		c0.05	0.24		0.04	c0.30	
v/s Ratio Perm			0.01						0.01			0.03
v/c Ratio	0.36	0.36	0.07	0.21	0.03		0.53	0.53	0.02	0.49	0.67	0.07
Uniform Delay, d1	27.7	27.7	26.4	32.6	32.2		31.6	14.2	10.8	31.9	15.8	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.0	0.3	0.0		1.4	0.4	0.0	0.9	1.2	0.1
Delay (s)	28.0	28.0	26.5	33.0	32.3		33.0	14.6	10.8	32.8	17.0	11.5
Level of Service	C	C	C	C	C		C	B	B	C	B	B
Approach Delay (s)		27.4			32.6			16.2			17.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	17.3
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

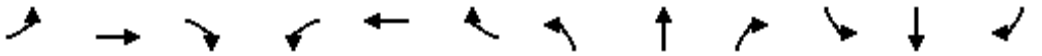
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	6	8	1	4	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	6	8	1	4	8
RTOR Reduction (vph)	0	5	0	1	0	0
Lane Group Flow (vph)	1	1	8	0	4	8
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	1.8	1.8	1.8	1.8	0.5	7.3
Effective Green, g (s)	1.8	1.8	1.8	1.8	0.5	7.3
Actuated g/C Ratio	0.09	0.09	0.09	0.09	0.03	0.38
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	167	149	176	149	46	712
v/s Ratio Prot	c0.00		c0.00		c0.00	0.00
v/s Ratio Perm		0.00		0.00		
v/c Ratio	0.01	0.00	0.05	0.00	0.09	0.01
Uniform Delay, d1	7.8	7.8	7.9	7.8	9.1	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.1	0.0	0.8	0.0
Delay (s)	7.9	7.8	8.0	7.8	9.9	3.7
Level of Service	A	A	A	A	A	A
Approach Delay (s)	7.8		8.0			5.7
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.03		
Actuated Cycle Length (s)	19.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	1092	64	95	867	29	132	32	20	3	34	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1717	1583		1791	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1717	1583		1791	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1149	67	100	913	31	139	34	21	3	36	14
RTOR Reduction (vph)	0	0	33	0	0	10	0	0	18	0	13	0
Lane Group Flow (vph)	57	1149	34	100	913	21	86	87	3	0	40	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	2.0	28.3	28.3	4.4	30.7	30.7	6.6	6.6	6.6		2.0	
Effective Green, g (s)	4.0	30.3	30.3	5.4	32.7	32.7	7.6	7.6	7.6		4.0	
Actuated g/C Ratio	0.07	0.51	0.51	0.09	0.55	0.55	0.13	0.13	0.13		0.07	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	120	1817	813	162	1961	877	217	221	204		121	
v/s Ratio Prot	0.03	c0.32		c0.06	0.26		c0.05	0.05			c0.02	
v/s Ratio Perm			0.02			0.01			0.00			
v/c Ratio	0.47	0.63	0.04	0.62	0.47	0.02	0.40	0.39	0.01		0.33	
Uniform Delay, d1	26.5	10.3	7.1	25.8	7.9	5.9	23.6	23.6	22.4		26.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.1	0.8	0.0	4.8	0.2	0.0	0.4	0.4	0.0		0.6	
Delay (s)	27.6	11.2	7.2	30.7	8.1	6.0	24.0	24.0	22.4		26.8	
Level of Service	C	B	A	C	A	A	C	C	C		C	
Approach Delay (s)		11.7			10.2			23.8			26.8	
Approach LOS		B			B			C			C	

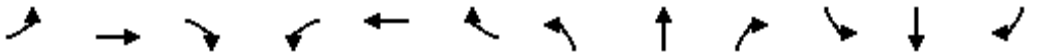
Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	849	221	177	895	38	228	45	115	20	36	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1712	1478	1770	1863	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1712	1478	1770	1863	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	83	894	233	186	942	40	240	47	121	21	38	69
RTOR Reduction (vph)	0	0	134	0	0	21	0	0	109	0	0	60
Lane Group Flow (vph)	83	894	99	186	942	19	142	145	12	21	38	9
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	3.0	20.0	20.0	6.1	23.1	23.1	4.1	4.1	4.1	5.0	5.0	5.0
Effective Green, g (s)	4.0	22.7	22.7	7.1	25.8	25.8	5.1	5.1	5.1	6.0	6.9	6.9
Actuated g/C Ratio	0.07	0.42	0.42	0.13	0.48	0.48	0.10	0.10	0.10	0.11	0.13	0.13
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	132	1502	627	235	1707	713	160	163	141	199	240	191
v/s Ratio Prot	0.05	c0.25		c0.11	c0.27		0.08	c0.08		0.01	c0.02	
v/s Ratio Perm			0.07			0.01			0.01			0.01
v/c Ratio	0.63	0.60	0.16	0.79	0.55	0.03	0.89	0.89	0.08	0.11	0.16	0.05
Uniform Delay, d1	24.0	11.9	9.5	22.5	9.8	7.3	23.9	23.9	22.1	21.3	20.7	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	0.7	0.2	15.5	0.5	0.0	39.2	39.1	0.1	0.3	0.4	0.1
Delay (s)	30.6	12.6	9.7	38.0	10.3	7.3	63.1	63.0	22.2	21.7	21.1	20.6
Level of Service	C	B	A	D	B	A	E	E	C	C	C	C
Approach Delay (s)		13.3			14.6			50.9			20.9	
Approach LOS		B			B			D			C	

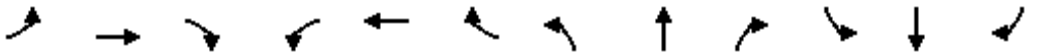
Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	8.7
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



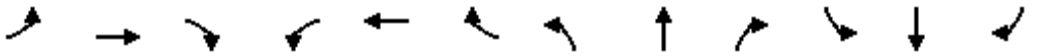
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	82	910	84	66	814	2	142	40	10	3	17	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		2.0	2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1793	1583		1850	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1793	1583		1850	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	86	958	88	69	857	2	149	42	11	3	18	97
RTOR Reduction (vph)	0	0	56	0	0	1	0	0	7	0	0	91
Lane Group Flow (vph)	86	958	32	69	857	1	0	191	4	0	21	6
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	7.1	31.1	31.1	6.5	30.5	30.5		31.7	31.7		4.7	4.7
Effective Green, g (s)	8.1	33.1	33.1	7.5	32.5	32.5		32.7	32.7		5.7	5.7
Actuated g/C Ratio	0.09	0.37	0.37	0.08	0.36	0.36		0.36	0.36		0.06	0.06
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.0	4.0		3.0	3.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3		3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	159	1302	582	148	1278	572		651	575		117	100
v/s Ratio Prot	0.05	c0.27		0.04	c0.24			c0.11			c0.01	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.54	0.74	0.06	0.47	0.67	0.00		0.29	0.01		0.18	0.06
Uniform Delay, d1	39.2	24.7	18.4	39.3	24.2	18.4		20.4	18.3		39.9	39.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	2.4	0.1	0.8	1.6	0.0		1.1	0.0		0.3	0.1
Delay (s)	41.2	27.1	18.4	40.2	25.8	18.4		21.6	18.3		40.2	39.7
Level of Service	D	C	B	D	C	B		C	B		D	D
Approach Delay (s)		27.5			26.9			21.4			39.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	541	378	57	448	66	420	70	42	60	44	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1708	1583		1810	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1708	1583		1810	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	569	398	60	472	69	442	74	44	63	46	19
RTOR Reduction (vph)	0	0	130	0	0	36	0	0	33	0	0	17
Lane Group Flow (vph)	42	569	268	60	472	33	256	260	11	0	109	2
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	3.0	37.7	58.6	6.2	40.9	40.9	20.9	20.9	20.9		8.2	8.2
Effective Green, g (s)	4.0	39.7	60.6	7.2	42.9	42.9	21.9	21.9	21.9		9.2	9.2
Actuated g/C Ratio	0.04	0.44	0.67	0.08	0.48	0.48	0.24	0.24	0.24		0.10	0.10
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	79	1561	1066	142	1687	755	409	416	385		185	162
v/s Ratio Prot	0.02	c0.16	0.06	c0.03	0.13		c0.15	0.15			c0.06	
v/s Ratio Perm			0.11			0.02			0.01			0.00
v/c Ratio	0.53	0.36	0.25	0.42	0.28	0.04	0.63	0.62	0.03		0.59	0.01
Uniform Delay, d1	42.1	16.7	5.8	39.4	14.2	12.6	30.4	30.4	25.9		38.6	36.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.4	0.2	0.1	0.7	0.4	0.1	3.1	3.1	0.0		3.1	0.0
Delay (s)	45.5	17.0	5.9	40.2	14.6	12.7	33.5	33.4	26.0		41.7	36.3
Level of Service	D	B	A	D	B	B	C	C	C		D	D
Approach Delay (s)		13.8			17.0			32.9			40.9	
Approach LOS		B			B			C			D	

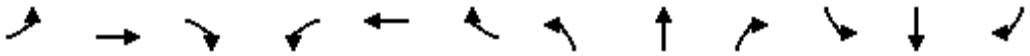
Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	14	37	24	12	4	36	1349	6	7	938	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	2.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1635		3433	1791		1676	4984	1414	1745	5187	1473
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1635		3433	1791		1676	4984	1414	1745	5187	1473
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	198	15	39	25	13	4	38	1420	6	7	987	194
RTOR Reduction (vph)	0	32	0	0	4	0	0	0	3	0	0	96
Lane Group Flow (vph)	198	22	0	25	13	0	38	1420	3	7	987	98
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	10.8	10.3		3.5	4.3		1.6	30.2	30.2	0.9	28.5	28.5
Effective Green, g (s)	11.8	11.3		4.5	5.3		2.6	33.6	33.6	1.9	31.9	31.9
Actuated g/C Ratio	0.19	0.18		0.07	0.08		0.04	0.53	0.53	0.03	0.50	0.50
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	329	292		244	150		69	2650	752	52	2618	743
v/s Ratio Prot	c0.11	0.01		c0.01	0.01		c0.02	c0.28		0.00	0.19	
v/s Ratio Perm									0.00			0.07
v/c Ratio	0.60	0.08		0.10	0.09		0.55	0.54	0.00	0.13	0.38	0.13
Uniform Delay, d1	23.5	21.6		27.5	26.7		29.7	9.7	6.9	29.8	9.6	8.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.1		0.1	0.1		5.3	0.4	0.0	0.4	0.2	0.2
Delay (s)	25.7	21.7		27.5	26.8		35.0	10.1	7.0	30.3	9.8	8.5
Level of Service	C	C		C	C		D	B	A	C	A	A
Approach Delay (s)		24.8			27.2			10.7			9.7	
Approach LOS		C			C			B			A	

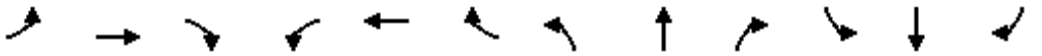
Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



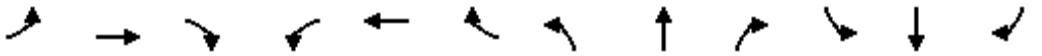
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	28	31	15	19	15	138	185	0	37	211	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.95			0.96		1.00	1.00		1.00	0.92	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1745			1758		1770	3539		1770	1722	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1775			1785		1770	3539		1770	1722	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	29	33	16	20	16	145	195	0	39	222	224
RTOR Reduction (vph)	0	31	0	0	15	0	0	0	0	0	68	0
Lane Group Flow (vph)	0	64	0	0	37	0	145	195	0	39	378	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		2.4			1.5		5.3	22.1		1.6	18.4	
Effective Green, g (s)		2.4			1.5		5.3	22.1		1.6	18.4	
Actuated g/C Ratio		0.06			0.03		0.12	0.51		0.04	0.42	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		98			61		215	1794		65	727	
v/s Ratio Prot							c0.08	c0.06		0.02	c0.22	
v/s Ratio Perm		c0.04			c0.02							
v/c Ratio		0.65			0.60		0.67	0.11		0.60	0.52	
Uniform Delay, d1		20.2			20.8		18.3	5.6		20.7	9.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.2			10.1		6.4	0.0		9.5	0.6	
Delay (s)		31.4			30.9		24.7	5.6		30.2	10.0	
Level of Service		C			C		C	A		C	A	
Approach Delay (s)		31.4			30.9			13.8			11.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	0	87	5	1	6	170	1571	5	54	2092	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1788	1583	1770	3538		1770	3539	1583
Flt Permitted		0.95	1.00		0.85	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1588	1583	1770	3538		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	0	92	5	1	6	179	1654	5	57	2202	277
RTOR Reduction (vph)	0	0	82	0	0	6	0	0	0	0	0	37
Lane Group Flow (vph)	0	105	10	0	6	0	179	1659	0	57	2202	240
Turn Type	Split		Perm	Perm		Perm	Prot			Prot		Perm
Protected Phases	4	4			3		5	2		1	6	
Permitted Phases			4	3		3						6
Actuated Green, G (s)		13.1	13.1		3.3	3.3	11.1	91.9		6.6	87.4	87.4
Effective Green, g (s)		14.1	14.1		4.3	4.3	14.1	93.9		7.6	90.4	90.4
Actuated g/C Ratio		0.11	0.11		0.03	0.03	0.11	0.70		0.06	0.68	0.68
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		187	167		51	51	187	2483		101	2391	1070
v/s Ratio Prot		c0.06					c0.10	0.47		0.03	c0.62	
v/s Ratio Perm			0.01		c0.00	0.00						0.15
v/c Ratio		0.56	0.06		0.12	0.00	0.96	0.67		0.56	0.92	0.22
Uniform Delay, d1		56.9	53.9		62.9	62.7	59.5	11.2		61.5	18.6	8.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.3	0.1		0.4	0.0	52.5	0.8		4.2	6.6	0.2
Delay (s)		59.2	53.9		63.3	62.7	112.1	12.0		65.7	25.2	8.4
Level of Service		E	D		E	E	F	B		E	C	A
Approach Delay (s)		56.7			63.0			21.7			24.3	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	133.8	Sum of lost time (s)	10.9
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

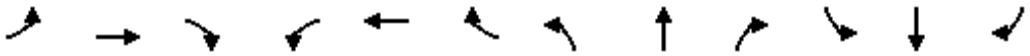


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	7	201	14	16	40	219	1433	5	5	1544	617
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	3.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	0.85		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1592		1770	1863	1583	3433	3537		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1592		1770	1863	1583	3433	3537		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	314	7	212	15	17	42	231	1508	5	5	1625	649
RTOR Reduction (vph)	0	109	0	0	0	41	0	0	0	0	0	145
Lane Group Flow (vph)	314	110	0	15	17	1	231	1513	0	5	1625	504
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						6
Actuated Green, G (s)	15.0	15.0		1.7	1.7	1.7	6.1	53.1		0.7	46.7	46.7
Effective Green, g (s)	16.0	16.0		2.7	2.7	2.7	7.1	55.6		1.7	49.2	49.2
Actuated g/C Ratio	0.18	0.18		0.03	0.03	0.03	0.08	0.64		0.02	0.57	0.57
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		3.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0		2.0	2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	631	293		55	58	49	280	2260		35	2001	895
v/s Ratio Prot	c0.09	0.07		0.01	c0.01		c0.07	0.43		0.00	c0.46	
v/s Ratio Perm						0.00						0.32
v/c Ratio	0.50	0.37		0.27	0.29	0.03	0.82	0.67		0.14	0.81	0.56
Uniform Delay, d1	31.9	31.1		41.2	41.2	40.9	39.3	9.9		41.9	15.2	12.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.8		1.0	1.0	0.1	16.9	1.0		0.7	3.0	1.4
Delay (s)	32.5	31.9		42.2	42.2	41.0	56.2	10.9		42.6	18.2	13.4
Level of Service	C	C		D	D	D	E	B		D	B	B
Approach Delay (s)		32.3			41.5			16.9			16.9	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

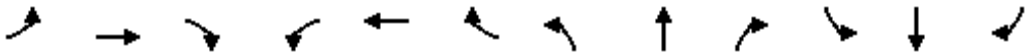
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	786	743	832	460	1016	821
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	2.0
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	827	782	876	484	1069	864
RTOR Reduction (vph)	0	11	0	328	0	0
Lane Group Flow (vph)	827	771	876	156	1069	864
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	23.3	50.0	26.7	26.7	26.7	59.7
Effective Green, g (s)	24.3	54.6	29.0	29.0	29.0	60.7
Actuated g/C Ratio	0.27	0.61	0.32	0.32	0.32	0.67
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	3.0
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	927	990	1140	510	1106	2387
v/s Ratio Prot	c0.24	0.25	c0.25		c0.31	0.24
v/s Ratio Perm		0.24		0.10		
v/c Ratio	0.89	0.78	0.77	0.31	0.97	0.36
Uniform Delay, d1	31.6	13.2	27.5	22.9	30.0	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.6	3.6	3.4	0.5	19.2	0.4
Delay (s)	42.2	16.8	30.8	23.4	49.2	6.7
Level of Service	D	B	C	C	D	A
Approach Delay (s)	29.8		28.2			30.2
Approach LOS	C		C			C

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.7
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	304	14	27	25	11	55	45	921	0	71	1337	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.92		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1665			1688		1770	3539		1770	3473	
Flt Permitted	0.95	0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1665			1688		1770	3539		1770	3473	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	320	15	28	26	12	58	47	969	0	75	1407	200
RTOR Reduction (vph)	0	6	0	0	46	0	0	0	0	0	9	0
Lane Group Flow (vph)	182	175	0	0	50	0	47	969	0	75	1598	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	16.5	16.5			6.9		7.2	71.8		7.9	72.1	
Effective Green, g (s)	16.5	16.5			6.9		7.2	71.8		7.9	72.1	
Actuated g/C Ratio	0.14	0.14			0.06		0.06	0.60		0.07	0.60	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Vehicle Extension (s)	2.0	2.0			2.0		2.0	4.2		2.0	3.2	
Lane Grp Cap (vph)	231	229			97		106	2118		117	2087	
v/s Ratio Prot	c0.11	0.11			c0.03		0.03	c0.27		0.04	c0.46	
v/s Ratio Perm												
v/c Ratio	0.79	0.76			0.51		0.44	0.46		0.64	0.77	
Uniform Delay, d1	50.1	49.9			54.9		54.5	13.3		54.7	17.7	
Progression Factor	1.00	1.00			1.00		0.74	0.35		1.00	1.00	
Incremental Delay, d2	15.0	12.7			1.9		1.0	0.7		8.7	1.8	
Delay (s)	65.1	62.6			56.8		41.4	5.3		63.3	19.5	
Level of Service	E	E			E		D	A		E	B	
Approach Delay (s)		63.8			56.8			6.9			21.4	
Approach LOS		E			E			A			C	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

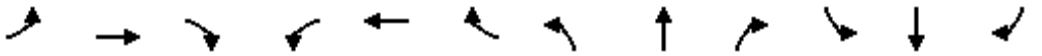


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	20	128	130	7	48	130	789	20	25	1163	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1783	1583		1778	1583	1770	3526		1770	3522	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1783	1583		1778	1583	1770	3526		1770	3522	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	21	135	137	7	51	137	831	21	26	1224	40
RTOR Reduction (vph)	0	0	117	0	0	46	0	1	0	0	1	0
Lane Group Flow (vph)	0	189	18	0	144	5	137	851	0	26	1263	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		16.4	16.4		12.9	12.9	12.6	70.2		3.6	61.2	
Effective Green, g (s)		16.4	16.4		12.9	12.9	12.6	70.2		3.6	61.2	
Actuated g/C Ratio		0.14	0.14		0.11	0.11	0.10	0.59		0.03	0.51	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)		244	216		191	170	186	2063		53	1796	
v/s Ratio Prot		c0.11			c0.08		c0.08	0.24		0.01	c0.36	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.77	0.09		0.75	0.03	0.74	0.41		0.49	0.70	
Uniform Delay, d1		50.0	45.2		52.0	48.0	52.1	13.6		57.3	22.5	
Progression Factor		1.00	1.00		1.00	1.00	1.25	0.82		0.63	0.33	
Incremental Delay, d2		13.0	0.1		13.9	0.0	4.3	0.2		1.7	0.9	
Delay (s)		63.0	45.3		65.9	48.0	69.6	11.4		37.5	8.4	
Level of Service		E	D		E	D	E	B		D	A	
Approach Delay (s)		55.7			61.2			19.5			8.9	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

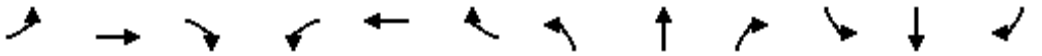
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	72	277	706	49	364	745
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	292	743	52	383	784
RTOR Reduction (vph)	0	220	0	36	0	0
Lane Group Flow (vph)	76	72	743	16	383	784
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	11.8	11.8	14.3	14.3	16.3	34.6
Effective Green, g (s)	13.8	13.8	17.0	17.0	18.3	37.3
Actuated g/C Ratio	0.25	0.25	0.30	0.30	0.33	0.66
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	844	389	1541	480	577	3381
v/s Ratio Prot	0.02		c0.15		c0.22	0.15
v/s Ratio Perm		c0.05		0.01		
v/c Ratio	0.09	0.18	0.48	0.03	0.66	0.23
Uniform Delay, d1	16.3	16.7	16.0	13.8	16.3	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	0.4	0.0	2.2	0.1
Delay (s)	16.3	16.8	16.4	13.8	18.5	3.8
Level of Service	B	B	B	B	B	A
Approach Delay (s)	16.7		16.2			8.6
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	7.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	736	29	141	758	124	102	17	488	248	6	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5056		1770	5085	1583		1786	1583	1681	1689	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5056		1770	5085	1583		1786	1583	1681	1689	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	775	31	148	798	131	107	18	514	261	6	92
RTOR Reduction (vph)	0	4	0	0	0	85	0	0	183	0	0	77
Lane Group Flow (vph)	73	802	0	148	798	46	0	125	331	133	134	15
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	6.1	24.4		8.2	26.5	26.5		19.9	19.9	12.6	12.6	12.6
Effective Green, g (s)	7.1	26.7		9.2	28.8	28.8		20.9	20.9	13.6	13.6	13.6
Actuated g/C Ratio	0.09	0.32		0.11	0.35	0.35		0.25	0.25	0.17	0.17	0.17
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	153	1638		198	1777	553		453	402	277	279	261
v/s Ratio Prot	0.04	c0.16		c0.08	0.16			0.07		0.08	c0.08	
v/s Ratio Perm						0.03			c0.21			0.01
v/c Ratio	0.48	0.49		0.75	0.45	0.08		0.28	0.82	0.48	0.48	0.06
Uniform Delay, d1	35.9	22.4		35.5	20.7	18.0		24.7	29.0	31.2	31.2	29.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.5		12.6	0.4	0.1		0.1	12.3	0.5	0.5	0.0
Delay (s)	36.7	22.8		48.1	21.0	18.1		24.8	41.3	31.7	31.7	29.0
Level of Service	D	C		D	C	B		C	D	C	C	C
Approach Delay (s)		24.0			24.4			38.0			31.0	
Approach LOS		C			C			D			C	

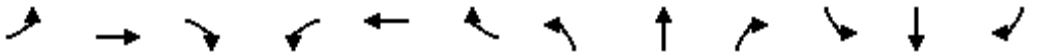
Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	638	550	81	592	181	487	682	57	162	638	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	218	672	579	85	623	191	513	718	60	171	672	335
RTOR Reduction (vph)	0	0	211	0	0	133	0	0	43	0	0	190
Lane Group Flow (vph)	218	672	368	85	623	58	513	718	17	171	672	145
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.2	22.7	22.7	6.1	20.2	20.2	10.2	20.5	20.5	8.2	18.5	18.5
Effective Green, g (s)	9.2	24.7	24.7	7.1	22.9	22.9	11.2	22.8	21.5	9.2	20.8	20.8
Actuated g/C Ratio	0.12	0.33	0.33	0.09	0.30	0.30	0.15	0.30	0.28	0.12	0.27	0.27
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	215	1155	517	166	1071	479	508	1532	450	432	1446	450
v/s Ratio Prot	c0.12	0.19		0.05	0.18		c0.15	c0.14		0.05	0.13	
v/s Ratio Perm			c0.23			0.04			0.01			0.09
v/c Ratio	1.01	0.58	0.71	0.51	0.58	0.12	1.01	0.47	0.04	0.40	0.46	0.32
Uniform Delay, d1	33.2	21.2	22.4	32.7	22.3	19.1	32.2	21.5	19.6	30.7	22.8	21.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	65.0	1.1	5.6	1.1	1.0	0.2	42.4	0.4	0.1	0.2	0.4	0.7
Delay (s)	98.3	22.3	28.0	33.8	23.4	19.3	74.7	21.9	19.7	30.9	23.2	22.5
Level of Service	F	C	C	C	C	B	E	C	B	C	C	C
Approach Delay (s)		35.8			23.5			42.7			24.1	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

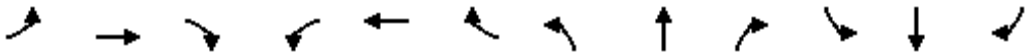


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	23	99	154	13	392	96	781	45	290	916	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.91	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1795	1583		1808	1597	1770	3732		1832	5790	1639
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1795	1583		1808	1597	1770	3732		1832	5790	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	24	104	162	14	413	101	822	47	305	964	76
RTOR Reduction (vph)	0	0	94	0	0	93	0	5	0	0	0	47
Lane Group Flow (vph)	0	100	10	0	176	320	101	864	0	305	964	29
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		6.7	6.7		12.1	24.5	6.5	20.1		12.4	26.0	26.0
Effective Green, g (s)		6.7	6.7		12.1	26.5	6.5	22.4		13.4	28.3	26.0
Actuated g/C Ratio		0.10	0.10		0.18	0.39	0.09	0.33		0.20	0.41	0.38
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		175	155		319	687	168	1219		358	2389	621
v/s Ratio Prot		c0.06			c0.10	0.09	0.06	c0.23		c0.17	0.17	
v/s Ratio Perm			0.01			0.11						0.02
v/c Ratio		0.57	0.07		0.55	0.47	0.60	0.71		0.85	0.40	0.05
Uniform Delay, d1		29.6	28.1		25.8	15.7	29.8	20.2		26.6	14.2	13.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.8	0.1		1.2	0.2	4.1	2.4		16.9	0.2	0.1
Delay (s)		32.4	28.2		26.9	15.9	33.9	22.7		43.5	14.4	13.5
Level of Service		C	C		C	B	C	C		D	B	B
Approach Delay (s)		30.2			19.2			23.9			21.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

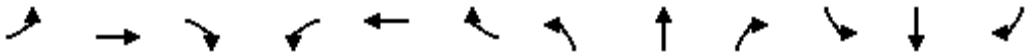
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	57	861	7	222	911
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	1.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3535		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3535		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	60	906	7	234	959
RTOR Reduction (vph)	0	51	1	0	0	0
Lane Group Flow (vph)	4	9	912	0	234	959
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	6.0	6.0	19.5		7.5	32.8
Effective Green, g (s)	7.0	7.0	21.5		8.5	34.8
Actuated g/C Ratio	0.15	0.15	0.47		0.19	0.76
Clearance Time (s)	4.0	4.0	4.8		4.0	3.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	271	242	1659		328	2689
v/s Ratio Prot	0.00		c0.26		c0.13	0.27
v/s Ratio Perm		c0.01				
v/c Ratio	0.01	0.04	0.55		0.71	0.36
Uniform Delay, d1	16.5	16.5	8.7		17.5	1.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.1	0.4		7.2	0.1
Delay (s)	16.5	16.6	9.1		24.7	1.9
Level of Service	B	B	A		C	A
Approach Delay (s)	16.6		9.1			6.4
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	8.8
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	24	0	25	0	1368	29	31	1624	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		2.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3528		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3528		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	25	0	26	0	1440	31	33	1709	0
RTOR Reduction (vph)	0	0	0	0	0	25	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	25	0	1	0	1470	0	33	1709	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				2.2		2.2		45.4		1.5	49.9	
Effective Green, g (s)				3.2		3.2		47.4		2.5	51.9	
Actuated g/C Ratio				0.05		0.05		0.69		0.04	0.76	
Clearance Time (s)				4.0		4.0		4.9		3.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				82		74		2434		64	2674	
v/s Ratio Prot				c0.01				0.42		0.02	c0.48	
v/s Ratio Perm						0.00						
v/c Ratio				0.30		0.02		0.60		0.52	0.64	
Uniform Delay, d1				31.7		31.2		5.7		32.5	4.0	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.8		0.0		0.7		2.9	0.7	
Delay (s)				32.4		31.3		6.4		35.4	4.7	
Level of Service				C		C		A		D	A	
Approach Delay (s)		0.0			31.9			6.4			5.3	
Approach LOS		A			C			A			A	

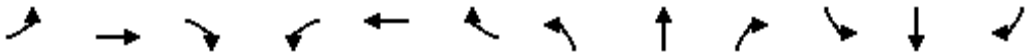
Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	13.6
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	13	54	62	17	66	35	1629	43	29	1792	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.88		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1604		1770	3521		1770	3525	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1604		1770	3521		1770	3525	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	62	14	57	65	18	69	37	1715	45	31	1886	38
RTOR Reduction (vph)	0	0	53	0	62	0	0	1	0	0	1	0
Lane Group Flow (vph)	62	14	4	65	25	0	37	1759	0	31	1923	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3									
Actuated Green, G (s)	6.0	6.0	6.0	7.8	7.8		3.8	54.9		3.8	55.3	
Effective Green, g (s)	7.0	7.0	7.0	8.8	8.8		4.8	56.9		4.8	57.3	
Actuated g/C Ratio	0.08	0.08	0.08	0.10	0.10		0.05	0.63		0.05	0.64	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	138	145	123	173	157		95	2231		95	2249	
v/s Ratio Prot	c0.04	0.01		c0.04	0.02		c0.02	0.50		0.02	c0.55	
v/s Ratio Perm			0.00									
v/c Ratio	0.45	0.10	0.04	0.38	0.16		0.39	0.79		0.33	0.86	
Uniform Delay, d1	39.6	38.5	38.3	37.9	37.1		41.1	12.0		40.9	12.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.2	0.1	1.1	0.4		1.0	2.1		0.7	3.5	
Delay (s)	41.5	38.7	38.4	39.1	37.5		42.0	14.1		41.7	16.5	
Level of Service	D	D	D	D	D		D	B		D	B	
Approach Delay (s)		39.9			38.2			14.7			16.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	11.9
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

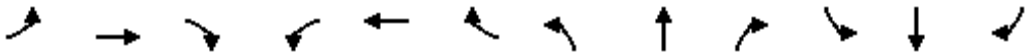
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	26	10	104	31	59	5	2139	9	38	2461	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2013			1963		1770	4984		1770	4964	
Flt Permitted		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2013			1963		1770	4984		1770	4964	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	27	11	109	33	62	5	2252	9	40	2591	77
RTOR Reduction (vph)	0	3	0	0	11	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	93	0	0	193	0	5	2261	0	40	2666	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split			Split			Prot			Prot		
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)		10.3			19.2		2.4	95.9		6.9	100.4	
Effective Green, g (s)		11.3			20.2		3.4	98.6		7.9	103.1	
Actuated g/C Ratio		0.08			0.13		0.02	0.66		0.05	0.69	
Clearance Time (s)		4.0			4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0		2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		152			264		40	3276		93	3412	
v/s Ratio Prot		c0.05			c0.10		0.00	c0.45		0.02	c0.54	
v/s Ratio Perm												
v/c Ratio		0.61			0.73		0.12	0.69		0.43	0.78	
Uniform Delay, d1		67.2			62.3		71.8	16.1		68.9	15.8	
Progression Factor		1.00			1.00		0.75	0.32		0.99	1.46	
Incremental Delay, d2		5.1			8.6		0.4	0.5		0.6	1.0	
Delay (s)		72.3			70.9		54.6	5.7		68.9	24.2	
Level of Service		E			E		D	A		E	C	
Approach Delay (s)		72.3			70.9			5.8			24.8	
Approach LOS		E			E			A			C	

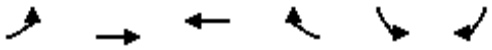
Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



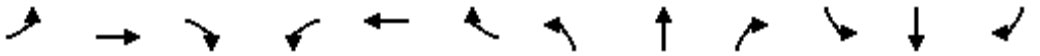
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	0	192	408	0	7	77	2157	40	3	2410	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00		0.97	1.00		0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1540	1770		1555	1770	5068		1770	5017	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1540	1770		1555	1770	5068		1770	5017	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	0	202	429	0	7	81	2271	42	3	2537	192
RTOR Reduction (vph)	0	0	71	0	0	4	0	1	0	0	6	0
Lane Group Flow (vph)	36	0	131	429	0	3	81	2312	0	3	2723	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	39.7		39.7	39.7		39.7	8.7	93.0		0.6	84.9	
Effective Green, g (s)	40.7		40.7	40.7		40.7	9.7	94.5		2.6	86.4	
Actuated g/C Ratio	0.27		0.27	0.27		0.27	0.06	0.63		0.02	0.58	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	480		418	480		422	114	3193		31	2890	
v/s Ratio Prot	0.02			c0.24			c0.05	0.46		0.00	c0.54	
v/s Ratio Perm			0.09			0.00						
v/c Ratio	0.07		0.31	0.89		0.01	0.71	0.72		0.10	0.94	
Uniform Delay, d1	40.6		43.5	52.6		39.9	68.8	18.9		72.5	29.5	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		0.74	0.68	
Incremental Delay, d2	0.0		0.2	18.3		0.0	15.9	1.5		0.3	5.1	
Delay (s)	40.7		43.7	70.9		39.9	84.7	20.3		54.2	25.3	
Level of Service	D		D	E		D	F	C		D	C	
Approach Delay (s)		43.2			70.4			22.5			25.3	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



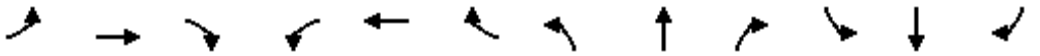
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	4	315	342	51	202	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	3.9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	332	360	54	213	32
RTOR Reduction (vph)	0	0	0	32	0	23
Lane Group Flow (vph)	4	332	360	22	213	9
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.6	20.9	16.3	16.3	10.4	10.4
Effective Green, g (s)	1.6	21.9	17.3	17.3	11.4	11.4
Actuated g/C Ratio	0.04	0.52	0.41	0.41	0.27	0.27
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	2.0
Lane Grp Cap (vph)	68	1850	1461	654	482	431
v/s Ratio Prot	0.00	c0.09	c0.10		c0.12	
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.06	0.18	0.25	0.03	0.44	0.02
Uniform Delay, d1	19.4	5.3	8.0	7.3	12.6	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.2	0.0	0.2	0.0
Delay (s)	19.6	5.3	8.2	7.4	12.9	11.2
Level of Service	B	A	A	A	B	B
Approach Delay (s)		5.5	8.1		12.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	41.9	Sum of lost time (s)	13.3
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



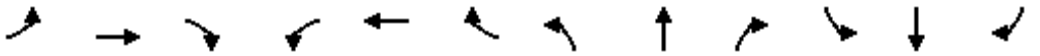
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	404	473	163	310	139	397	519	168	33	503	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4987	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4987	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	425	498	172	326	146	418	546	177	35	529	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	22	0
Lane Group Flow (vph)	46	425	498	172	326	146	418	546	177	35	585	0
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			
Actuated Green, G (s)	3.4	17.8	84.6	8.1	22.9	84.6	20.1	35.7	84.6	4.0	19.6	
Effective Green, g (s)	4.4	20.5	84.6	9.1	25.6	84.6	21.1	38.0	84.6	5.0	21.9	
Actuated g/C Ratio	0.05	0.24	1.00	0.11	0.30	1.00	0.25	0.45	1.00	0.06	0.26	
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	92	858	1583	190	1071	1583	441	1590	1583	105	1291	
v/s Ratio Prot	0.03	c0.12		c0.10	0.09		c0.24	0.15		0.02	c0.12	
v/s Ratio Perm			0.31			0.09			0.11			
v/c Ratio	0.50	0.50	0.31	0.91	0.30	0.09	0.95	0.34	0.11	0.33	0.45	
Uniform Delay, d1	39.0	27.6	0.0	37.3	22.7	0.0	31.2	15.2	0.0	38.2	26.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.7	0.5	38.8	0.3	0.1	29.4	0.3	0.1	0.7	0.5	
Delay (s)	40.6	28.3	0.5	76.2	23.0	0.1	60.6	15.4	0.1	38.9	26.8	
Level of Service	D	C	A	E	C	A	E	B	A	D	C	
Approach Delay (s)		14.6			32.0			29.6			27.5	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	26	106	162	33	127	45	832	29	63	1372	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1789	1583	1770	3521		1770	3526	
Flt Permitted		0.93	1.00		0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1734	1583		1376	1583	1770	3521		1770	3526	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	27	112	171	35	134	47	876	31	66	1444	37
RTOR Reduction (vph)	0	0	62	0	0	104	0	4	0	0	3	0
Lane Group Flow (vph)	0	34	50	0	206	30	47	903	0	66	1478	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		11.7	11.7		11.7	11.7	2.8	30.7		3.0	31.9	
Effective Green, g (s)		13.3	13.3		13.3	13.3	3.8	33.4		4.0	34.6	
Actuated g/C Ratio		0.22	0.22		0.22	0.22	0.06	0.56		0.07	0.58	
Clearance Time (s)		4.9	4.9		4.9	4.9	3.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		384	351		305	351	112	1960		118	2033	
v/s Ratio Prot							0.03	c0.26		0.04	c0.42	
v/s Ratio Perm		0.02	0.03		c0.15	0.02						
v/c Ratio		0.09	0.14		0.68	0.08	0.42	0.46		0.56	0.73	
Uniform Delay, d1		18.5	18.8		21.4	18.5	27.0	7.9		27.1	9.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.1		5.3	0.1	0.9	0.2		3.2	2.3	
Delay (s)		18.6	18.9		26.7	18.6	28.0	8.2		30.4	11.6	
Level of Service		B	B		C	B	C	A		C	B	
Approach Delay (s)		18.8			23.5			9.1			12.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.3
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

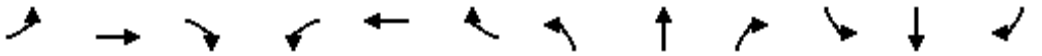


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2	1	53	5	55	1	902	27	95	1559	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1583		1781	1583	1770	3524		1770	3537	
Flt Permitted		0.86	1.00		0.76	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1596	1583		1417	1583	1770	3524		1770	3537	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	2	1	56	5	58	1	949	28	100	1641	6
RTOR Reduction (vph)	0	0	1	0	0	50	0	2	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	61	8	1	975	0	100	1647	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4		4						
Actuated Green, G (s)		12.1	12.1		12.1	12.1	0.6	56.0		8.2	63.6	
Effective Green, g (s)		13.1	13.1		13.1	13.1	1.6	59.0		9.2	66.6	
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.02	0.66		0.10	0.74	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	4.3		3.0	4.3	
Lane Grp Cap (vph)		232	230		206	230	31	2310		181	2617	
v/s Ratio Prot							0.00	c0.28		0.06	c0.47	
v/s Ratio Perm		0.01	0.00		c0.04	0.01						
v/c Ratio		0.04	0.00		0.30	0.04	0.03	0.42		0.55	0.63	
Uniform Delay, d1		33.0	32.9		34.3	33.0	43.4	7.4		38.4	5.7	
Progression Factor		1.00	1.00		1.00	1.00	0.71	0.11		1.00	1.00	
Incremental Delay, d2		0.1	0.0		0.8	0.1	0.1	0.2		3.6	1.2	
Delay (s)		33.1	32.9		35.1	33.1	31.0	1.0		42.1	6.9	
Level of Service		C	C		D	C	C	A		D	A	
Approach Delay (s)		33.1			34.1			1.0			8.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

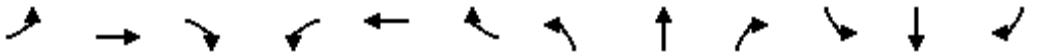
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	6	100	867	62	126	1490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3504		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3504		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	105	913	65	133	1568
RTOR Reduction (vph)	0	92	5	0	0	0
Lane Group Flow (vph)	6	13	973	0	133	1568
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	9.8	9.8	47.8		18.7	70.5
Effective Green, g (s)	10.8	10.8	50.8		19.7	73.5
Actuated g/C Ratio	0.12	0.12	0.56		0.22	0.82
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	212	190	1978		387	2890
v/s Ratio Prot	0.00		0.28		0.08	c0.44
v/s Ratio Perm		c0.01				
v/c Ratio	0.03	0.07	0.49		0.34	0.54
Uniform Delay, d1	35.0	35.1	11.8		29.7	2.7
Progression Factor	1.00	1.00	1.00		0.77	0.09
Incremental Delay, d2	0.0	0.1	0.2		0.2	0.6
Delay (s)	35.0	35.2	12.1		23.1	0.9
Level of Service	C	D	B		C	A
Approach Delay (s)	35.2		12.1			2.6
Approach LOS	D		B			A

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



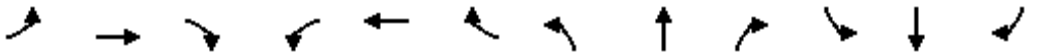
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	275	0	235	2	0	2	248	749	4	0	913	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5			3.0		3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00	0.98			1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85			0.93		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400	1542			1695		1660	3417	1544		3491	1500
Flt Permitted	0.95	1.00			0.98		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400	1542			1695		1660	3417	1544		3491	1500
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	289	0	247	2	0	2	261	788	4	0	961	147
RTOR Reduction (vph)	0	189	0	0	2	0	0	0	1	0	0	89
Lane Group Flow (vph)	289	58	0	0	2	0	261	788	3	0	961	58
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.9	12.9			1.3		8.3	35.0	35.0		22.7	22.7
Effective Green, g (s)	15.4	15.4			2.3		9.3	38.4	38.4		26.1	26.1
Actuated g/C Ratio	0.23	0.23			0.04		0.14	0.59	0.59		0.40	0.40
Clearance Time (s)	6.0	6.0			4.0		4.0	6.4	6.4		6.4	6.4
Vehicle Extension (s)	4.1	4.1			2.0		2.0	4.3	4.3		4.3	4.3
Lane Grp Cap (vph)	798	362			59		235	2000	904		1389	597
v/s Ratio Prot	c0.09	0.04			c0.00		c0.16	0.23			c0.28	
v/s Ratio Perm									0.00			0.04
v/c Ratio	0.36	0.16			0.04		1.11	0.39	0.00		0.69	0.10
Uniform Delay, d1	21.0	20.0			30.6		28.1	7.3	5.6		16.4	12.4
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.3			0.1		91.6	0.2	0.0		1.7	0.1
Delay (s)	21.4	20.3			30.7		119.7	7.5	5.7		18.1	12.5
Level of Service	C	C			C		F	A	A		B	B
Approach Delay (s)		20.9			30.7			35.3			17.4	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



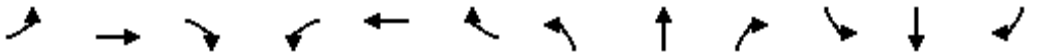
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	0	53	1	0	6	118	988	1	1	1089	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4	6.4	4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	0	56	1	0	6	124	1040	1	1	1146	62
RTOR Reduction (vph)	0	0	49	0	0	6	0	0	0	0	0	18
Lane Group Flow (vph)	0	27	7	0	1	0	124	1040	1	1	1146	44
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)		7.8	7.8		4.0	4.0	7.2	43.2	43.2	0.7	36.7	36.7
Effective Green, g (s)		7.8	8.8		4.0	4.0	8.2	44.2	43.2	0.7	37.7	37.7
Actuated g/C Ratio		0.11	0.12		0.05	0.05	0.11	0.60	0.58	0.01	0.51	0.51
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)		186	188		96	85	196	2111	923	17	1801	805
v/s Ratio Prot		c0.02			c0.00		c0.07	0.29		0.00	c0.32	
v/s Ratio Perm			0.00			0.00			0.00			0.03
v/c Ratio		0.15	0.04		0.01	0.00	0.63	0.49	0.00	0.06	0.64	0.06
Uniform Delay, d1		30.1	28.9		33.2	33.2	31.5	8.5	6.4	36.4	13.2	9.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.0		0.0	0.0	4.8	0.3	0.0	0.5	0.9	0.0
Delay (s)		30.3	28.9		33.2	33.2	36.3	8.8	6.4	36.9	14.1	9.2
Level of Service		C	C		C	C	D	A	A	D	B	A
Approach Delay (s)		29.4			33.2			11.8			13.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	16.4
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



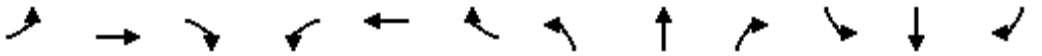
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1	490	7	1	5	295	1009	10	4	1056	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1610	3034		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1610	3034		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	1	516	7	1	5	311	1062	11	4	1112	79
RTOR Reduction (vph)	0	0	280	0	8	0	0	0	5	0	0	49
Lane Group Flow (vph)	52	54	236	5	0	0	311	1062	6	4	1112	30
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.5	13.5	13.5	1.2	1.2		10.6	33.0	33.0	0.8	22.8	22.8
Effective Green, g (s)	16.2	16.2	16.2	2.2	2.2		11.6	36.4	36.4	1.8	26.2	26.2
Actuated g/C Ratio	0.23	0.23	0.23	0.03	0.03		0.17	0.52	0.52	0.03	0.37	0.37
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	390	391	367	51	95		294	1843	824	46	1906	593
v/s Ratio Prot	0.03	0.03		c0.00	0.00		c0.18	c0.30		0.00	0.22	
v/s Ratio Perm			c0.15						0.00			0.02
v/c Ratio	0.13	0.14	0.64	0.10	0.00		1.06	0.58	0.01	0.09	0.58	0.05
Uniform Delay, d1	21.3	21.3	24.2	32.9	32.8		29.2	11.5	8.1	33.2	17.5	13.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	4.5	1.3	0.0		68.5	0.7	0.0	0.3	0.6	0.1
Delay (s)	21.5	21.6	28.8	34.2	32.8		97.7	12.1	8.1	33.5	18.1	14.0
Level of Service	C	C	C	C	C		F	B	A	C	B	B
Approach Delay (s)		27.6			33.3			31.3			17.9	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	10.7
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	256	5	290	122	5	65	142	1361	47	94	1533	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.0	
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1688	1583		1777	1583	1770	5060		1770	5004	
Flt Permitted	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1688	1583		1777	1583	1770	5060		1770	5004	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	269	5	305	128	5	68	149	1433	49	99	1614	193
RTOR Reduction (vph)	0	0	265	0	0	60	0	3	0	0	10	0
Lane Group Flow (vph)	137	137	40	0	133	8	149	1479	0	99	1797	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)	14.8	14.8	14.8		13.0	13.0	13.8	63.1		11.4	61.4	
Effective Green, g (s)	15.8	15.8	15.8		14.0	14.0	14.8	66.1		12.4	64.4	
Actuated g/C Ratio	0.13	0.13	0.13		0.12	0.12	0.12	0.55		0.10	0.54	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3		2.0	5.3	
Lane Grp Cap (vph)	221	222	208		207	185	218	2787		183	2685	
v/s Ratio Prot	c0.08	0.08			c0.07		c0.08	0.29		0.06	c0.36	
v/s Ratio Perm			0.03			0.01						
v/c Ratio	0.62	0.62	0.19		0.64	0.04	0.68	0.53		0.54	0.67	
Uniform Delay, d1	49.3	49.2	46.4		50.6	47.1	50.4	17.1		51.1	20.1	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	3.6	0.2		5.0	0.0	6.9	0.7		1.7	0.9	
Delay (s)	52.9	52.8	46.6		55.6	47.1	57.2	17.8		52.8	21.0	
Level of Service	D	D	D		E	D	E	B		D	C	
Approach Delay (s)		49.5			52.7			21.4			22.7	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

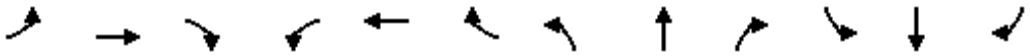


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	333	106	79	23	88	37	269	1406	25	56	2066	392
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.91	0.91			0.95		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.97			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3200			3380		3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.72			0.75		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	2364			2561		3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	351	112	83	24	93	39	283	1480	26	59	2175	413
RTOR Reduction (vph)	0	18	0	0	28	0	0	0	12	0	0	145
Lane Group Flow (vph)	183	345	0	0	128	0	283	1480	14	59	2175	268
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	16.2	35.1			13.2		11.8	63.7	63.7	7.2	59.1	59.1
Effective Green, g (s)	17.2	37.8			15.9		12.8	66.7	66.7	8.2	62.1	62.1
Actuated g/C Ratio	0.14	0.31			0.13		0.11	0.56	0.56	0.07	0.52	0.52
Clearance Time (s)	4.0	5.7			5.7		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3			4.3		2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	231	876			339		366	2826	880	121	2631	819
v/s Ratio Prot	c0.11	0.06					c0.08	0.29		0.03	c0.43	
v/s Ratio Perm		c0.06			0.05				0.01			0.17
v/c Ratio	0.79	0.39			1.22dr		0.77	0.52	0.02	0.49	0.83	0.33
Uniform Delay, d1	49.7	32.1			47.5		52.2	16.7	11.9	53.9	24.4	16.8
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.8	0.5			1.1		8.9	0.7	0.0	1.1	2.5	0.4
Delay (s)	65.4	32.6			48.7		61.1	17.4	12.0	55.0	26.9	17.2
Level of Service	E	C			D		E	B	B	E	C	B
Approach Delay (s)		43.6			48.7			24.2			26.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

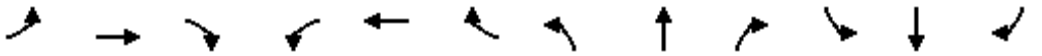
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	539	17	14	259	8	14	2	15	7	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	3523		1770	3524			1702			1708	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (perm)	1770	3523		1770	3524			1702			1708	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	567	18	15	273	8	15	2	16	7	0	5
RTOR Reduction (vph)	0	2	0	0	2	0	0	14	0	0	5	0
Lane Group Flow (vph)	6	583	0	15	279	0	0	19	0	0	7	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.8	25.4		0.6	25.2			4.2			0.9	
Effective Green, g (s)	1.8	28.1		1.6	27.9			5.2			1.9	
Actuated g/C Ratio	0.04	0.58		0.03	0.57			0.11			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	65	2029		58	2015			181			67	
v/s Ratio Prot	0.00	c0.17		c0.01	0.08			c0.01			c0.00	
v/s Ratio Perm												
v/c Ratio	0.09	0.29		0.26	0.14			0.10			0.11	
Uniform Delay, d1	22.7	5.3		23.0	4.9			19.7			22.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.1		0.9	0.1			0.1			0.3	
Delay (s)	22.9	5.4		23.9	4.9			19.8			22.9	
Level of Service	C	A		C	A			B			C	
Approach Delay (s)		5.6			5.9			19.8			22.9	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	159	541	12	39	323	34	4	0	13	12	0	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.90			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1649			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1649			1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	167	569	13	41	340	36	4	0	14	13	0	129
RTOR Reduction (vph)	0	0	6	0	0	22	0	13	0	0	0	105
Lane Group Flow (vph)	167	569	7	41	340	14	0	5	0	0	13	24
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	7.7	23.9	23.9	2.3	18.5	18.5		1.0			8.5	8.5
Effective Green, g (s)	8.7	26.9	26.9	3.3	21.5	21.5		2.0			10.5	10.5
Actuated g/C Ratio	0.16	0.49	0.49	0.06	0.39	0.39		0.04			0.19	0.19
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	278	1718	769	105	1373	614		60			335	300
v/s Ratio Prot	c0.09	c0.16		0.02	0.10			c0.00			0.01	
v/s Ratio Perm			0.00			0.01						c0.02
v/c Ratio	0.60	0.33	0.01	0.39	0.25	0.02		0.08			0.04	0.08
Uniform Delay, d1	21.7	8.7	7.4	25.1	11.5	10.5		25.8			18.3	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	2.5	0.1	0.0	0.9	0.1	0.0		0.2			0.0	0.0
Delay (s)	24.2	8.9	7.4	26.0	11.6	10.5		26.0			18.3	18.5
Level of Service	C	A	A	C	B	B		C			B	B
Approach Delay (s)		12.3			12.9			26.0			18.5	
Approach LOS		B			B			C			B	

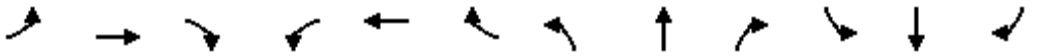
Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	9.7
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	349	2	50	239	6	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	367	2	53	252	6	57
RTOR Reduction (vph)	0	1	0	0	0	44
Lane Group Flow (vph)	367	1	53	252	6	13
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	9.9	9.9	2.3	17.2	7.7	7.7
Effective Green, g (s)	9.9	9.9	2.3	17.2	7.7	7.7
Actuated g/C Ratio	0.28	0.28	0.07	0.49	0.22	0.22
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1004	449	117	1744	391	349
v/s Ratio Prot	c0.10		c0.03	0.07	0.00	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.37	0.00	0.45	0.14	0.02	0.04
Uniform Delay, d1	10.0	9.0	15.7	4.8	10.6	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	2.8	0.0	0.0	0.0
Delay (s)	10.2	9.0	18.5	4.9	10.7	10.7
Level of Service	B	A	B	A	B	B
Approach Delay (s)	10.2			7.2	10.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	34.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

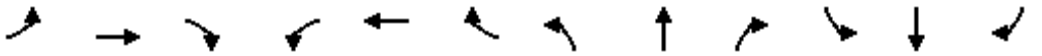
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1188	486	244	611	101	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1251	512	257	643	106	341
RTOR Reduction (vph)	0	274	0	504	0	0
Lane Group Flow (vph)	1251	238	257	139	106	341
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	32.3	32.3	15.0	15.0	7.2	27.2
Effective Green, g (s)	32.3	32.3	15.0	15.0	7.2	27.2
Actuated g/C Ratio	0.46	0.46	0.22	0.22	0.10	0.39
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1595	736	764	342	183	1385
v/s Ratio Prot	c0.36		0.07		c0.06	0.10
v/s Ratio Perm		0.15		c0.09		
v/c Ratio	0.78	0.32	0.34	0.41	0.58	0.25
Uniform Delay, d1	15.7	11.7	23.0	23.4	29.7	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.3	0.3	0.8	4.4	0.1
Delay (s)	18.3	12.0	23.3	24.2	34.1	14.3
Level of Service	B	B	C	C	C	B
Approach Delay (s)	16.4		23.9			19.0
Approach LOS	B		C			B

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



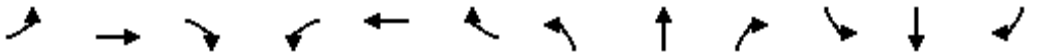
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	353	6	6	730	667	2	13	5	207	9	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1851	1583		1777	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1851	1583		1777	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	87	372	6	6	768	702	2	14	5	218	9	59
RTOR Reduction (vph)	0	0	3	0	0	413	0	0	5	0	0	45
Lane Group Flow (vph)	87	372	3	6	768	289	0	16	0	0	227	14
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	4.0	26.0	26.0	0.7	21.7	21.7		3.0	3.0		13.2	13.2
Effective Green, g (s)	5.0	29.0	29.0	1.7	24.7	24.7		4.0	4.0		14.2	14.2
Actuated g/C Ratio	0.08	0.48	0.48	0.03	0.41	0.41		0.07	0.07		0.24	0.24
Clearance Time (s)	4.0	6.0	6.0	3.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	148	1713	766	50	1459	653		124	106		421	375
v/s Ratio Prot	c0.05	0.11		0.00	c0.22			c0.01			c0.13	
v/s Ratio Perm			0.00			0.18			0.00			0.01
v/c Ratio	0.59	0.22	0.00	0.12	0.53	0.44		0.13	0.00		0.54	0.04
Uniform Delay, d1	26.5	8.9	8.0	28.4	13.2	12.7		26.3	26.1		20.0	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.8	0.1	0.0	0.4	0.4	0.6		0.2	0.0		0.7	0.0
Delay (s)	30.3	9.0	8.0	28.8	13.6	13.2		26.5	26.1		20.7	17.6
Level of Service	C	A	A	C	B	B		C	C		C	B
Approach Delay (s)		12.9			13.5			26.4			20.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



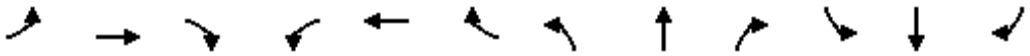
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	536	10	88	1386	62	7	5	43	44	4	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	564	11	93	1459	65	7	5	45	46	4	21
RTOR Reduction (vph)	0	0	6	0	0	32	0	0	38	0	0	17
Lane Group Flow (vph)	33	564	5	93	1459	33	7	5	7	46	4	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.6	31.1	31.1	5.3	33.8	33.8	1.0	10.4	10.4	4.4	11.8	11.8
Effective Green, g (s)	2.6	31.1	31.1	5.3	33.8	33.8	1.0	10.4	10.4	4.4	11.8	11.8
Actuated g/C Ratio	0.04	0.45	0.45	0.08	0.49	0.49	0.01	0.15	0.15	0.06	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	67	1591	711	136	1729	773	26	280	238	113	318	270
v/s Ratio Prot	0.02	0.16		c0.05	c0.41		0.00	0.00		c0.03	0.00	
v/s Ratio Perm			0.00			0.02			c0.00			c0.00
v/c Ratio	0.49	0.35	0.01	0.68	0.84	0.04	0.27	0.02	0.03	0.41	0.01	0.01
Uniform Delay, d1	32.7	12.5	10.5	31.1	15.4	9.2	33.7	25.0	25.1	31.1	23.9	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.6	0.1	0.0	13.3	4.0	0.0	5.5	0.0	0.0	2.4	0.0	0.0
Delay (s)	38.3	12.6	10.5	44.4	19.4	9.3	39.3	25.1	25.1	33.5	23.9	23.9
Level of Service	D	B	B	D	B	A	D	C	C	C	C	C
Approach Delay (s)		14.0			20.4			26.9			30.1	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	23.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



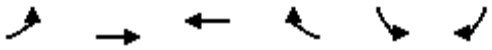
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	383	302	25	207	974	150	35	626	137	192	663	685
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	2.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	403	318	26	218	1025	158	37	659	144	202	698	721
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	403	318	26	218	1025	158	37	659	144	202	698	721
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.0	29.1	85.3	8.7	26.8	85.3	4.7	20.8	85.3	8.0	24.4	85.3
Effective Green, g (s)	11.0	32.1	85.3	9.7	29.8	85.3	5.7	23.5	85.3	9.0	27.1	85.3
Actuated g/C Ratio	0.13	0.38	1.00	0.11	0.35	1.00	0.07	0.28	1.00	0.11	0.32	1.00
Clearance Time (s)	4.0	5.7		3.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	443	1332	1583	390	1236	1583	229	975	1583	362	1124	1583
v/s Ratio Prot	c0.12	0.09		0.06	c0.29		0.01	0.19		c0.06	c0.20	
v/s Ratio Perm			0.02			0.10			0.09			c0.46
v/c Ratio	0.91	0.24	0.02	0.56	0.83	0.10	0.16	0.68	0.09	0.56	0.62	0.46
Uniform Delay, d1	36.7	18.2	0.0	35.8	25.4	0.0	37.5	27.5	0.0	36.3	24.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.8	0.2	0.0	1.0	5.2	0.1	0.1	2.1	0.1	1.1	1.4	0.9
Delay (s)	58.5	18.4	0.0	36.8	30.6	0.1	37.7	29.6	0.1	37.3	26.1	0.9
Level of Service	E	B	A	D	C	A	D	C	A	D	C	A
Approach Delay (s)		39.4			28.1			24.9			16.3	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	85.3	Sum of lost time (s)	5.7
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



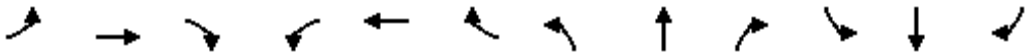
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	495	105	277	1103	50	243	225	19	60	84	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3446		1770	3516		1770	1841		1770	1758	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3446		1770	3516		1770	1841		1770	1758	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	521	111	292	1161	53	256	237	20	63	88	53
RTOR Reduction (vph)	0	20	0	0	3	0	0	4	0	0	25	0
Lane Group Flow (vph)	41	612	0	292	1211	0	256	253	0	63	116	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.3	22.8		14.2	33.7		12.2	20.9		6.2	14.9	
Effective Green, g (s)	4.3	25.5		15.2	36.4		13.2	23.2		7.2	17.2	
Actuated g/C Ratio	0.05	0.31		0.18	0.44		0.16	0.28		0.09	0.21	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	92	1063		325	1548		283	516		154	366	
v/s Ratio Prot	0.02	0.18		c0.17	c0.34		c0.14	c0.14		0.04	0.07	
v/s Ratio Perm												
v/c Ratio	0.45	0.58		0.90	0.78		0.90	0.49		0.41	0.32	
Uniform Delay, d1	38.0	24.1		33.0	19.8		34.1	24.8		35.7	27.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.9		25.3	2.8		29.4	1.0		0.6	0.7	
Delay (s)	39.3	24.9		58.3	22.5		63.5	25.8		36.4	28.4	
Level of Service	D	C		E	C		E	C		D	C	
Approach Delay (s)		25.8			29.5			44.6			30.9	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



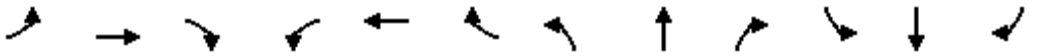
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	559	1554	30	112	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3529		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3529		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	588	1636	32	118	6
RTOR Reduction (vph)	0	0	1	0	0	5
Lane Group Flow (vph)	12	588	1667	0	118	1
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	1.0	45.8	40.8		8.2	8.2
Effective Green, g (s)	2.0	48.5	43.5		9.2	9.2
Actuated g/C Ratio	0.03	0.76	0.68		0.14	0.14
Clearance Time (s)	4.0	5.7	5.7		4.0	4.0
Vehicle Extension (s)	2.0	3.8	3.8		2.0	2.0
Lane Grp Cap (vph)	56	2695	2410		256	229
v/s Ratio Prot	0.01	c0.17	c0.47		c0.07	
v/s Ratio Perm						0.00
v/c Ratio	0.21	0.22	0.69		0.46	0.00
Uniform Delay, d1	30.1	2.2	6.1		25.0	23.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.1	0.9		0.5	0.0
Delay (s)	30.8	2.2	7.0		25.5	23.3
Level of Service	C	A	A		C	C
Approach Delay (s)		2.8	7.0		25.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



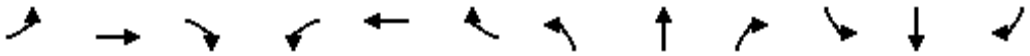
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	600	56	158	1585	0	68	0	59	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7	4.7	2.0	2.7			2.0	2.0			
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00			
Frt		1.00	0.85	1.00	1.00			1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3539	1583	1770	3539			1770	1583			
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (perm)		3539	1583	1770	3539			1770	1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	632	59	166	1668	0	72	0	62	0	0	0
RTOR Reduction (vph)	0	0	32	0	0	0	0	0	51	0	0	0
Lane Group Flow (vph)	0	632	27	166	1668	0	0	72	11	0	0	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2						3			
Actuated Green, G (s)		26.0	26.0	10.2	40.2			8.9	8.9			
Effective Green, g (s)		29.0	27.0	12.2	43.2			10.9	10.9			
Actuated g/C Ratio		0.49	0.46	0.21	0.73			0.19	0.19			
Clearance Time (s)		5.7	5.7	4.0	5.7			4.0	4.0			
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		1745	727	367	2600			328	293			
v/s Ratio Prot		0.18		0.09	c0.47			c0.04				
v/s Ratio Perm			0.02						0.01			
v/c Ratio		0.36	0.04	0.45	0.64			0.22	0.04			
Uniform Delay, d1		9.2	8.7	20.4	3.9			20.3	19.7			
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.1	0.0	0.9	0.5			0.3	0.1			
Delay (s)		9.3	8.8	21.3	4.5			20.7	19.7			
Level of Service		A	A	C	A			C	B			
Approach Delay (s)		9.3			6.0			20.2			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	4.7
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



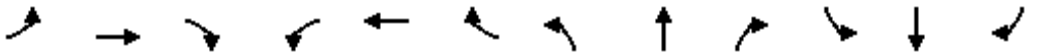
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	655	38	102	1612	4	24	15	106	24	15	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3510		1770	3538			1808	1583		1808	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.84	1.00		0.84	1.00
Satd. Flow (perm)	1770	3510		1770	3538			1566	1583		1566	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	689	40	107	1697	4	25	16	112	25	16	25
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	94	0	0	21
Lane Group Flow (vph)	44	725	0	107	1701	0	0	41	18	0	41	4
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	3.3	36.1		6.2	39.0			9.3	9.3		9.3	9.3
Effective Green, g (s)	4.3	38.8		7.2	41.7			10.3	10.3		10.3	10.3
Actuated g/C Ratio	0.07	0.59		0.11	0.64			0.16	0.16		0.16	0.16
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	117	2086		195	2259			247	250		247	250
v/s Ratio Prot	0.02	0.21		c0.06	c0.48							
v/s Ratio Perm								c0.03	0.01		0.03	0.00
v/c Ratio	0.38	0.35		0.55	0.75			0.17	0.07		0.17	0.02
Uniform Delay, d1	29.2	6.8		27.5	8.2			23.8	23.4		23.8	23.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.1		1.7	1.5			0.1	0.0		0.1	0.0
Delay (s)	30.0	6.9		29.2	9.8			23.9	23.5		23.9	23.2
Level of Service	C	A		C	A			C	C		C	C
Approach Delay (s)		8.2			10.9			23.6			23.6	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



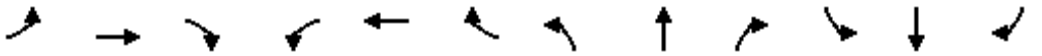
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	415	6	2	680	77	2	0	2	139	0	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98			0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3532		1770	3485			1695		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)	1770	3532		1770	3485			1695		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	107	437	6	2	716	81	2	0	2	146	0	223
RTOR Reduction (vph)	0	1	0	0	9	0	0	2	0	0	176	0
Lane Group Flow (vph)	107	442	0	2	788	0	0	2	0	146	47	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	6.8	27.7		0.9	21.8			1.0		11.4	11.4	
Effective Green, g (s)	7.8	30.4		1.9	24.5			2.0		12.4	12.4	
Actuated g/C Ratio	0.13	0.52		0.03	0.42			0.03		0.21	0.21	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	235	1829		57	1455			58		374	334	
v/s Ratio Prot	c0.06	0.13		0.00	c0.23			c0.00		c0.08	0.03	
v/s Ratio Perm												
v/c Ratio	0.46	0.24		0.04	0.54			0.04		0.39	0.14	
Uniform Delay, d1	23.5	7.8		27.5	12.9			27.4		19.9	18.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		0.1	0.5			0.2		0.2	0.1	
Delay (s)	24.0	7.9		27.6	13.4			27.6		20.1	18.9	
Level of Service	C	A		C	B			C		C	B	
Approach Delay (s)		11.0			13.4			27.6			19.4	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



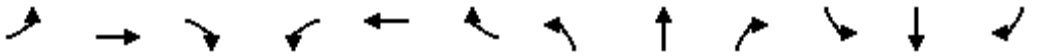
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	6	34	155	4	55	21	802	151	7	512	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	6	36	163	4	58	22	844	159	7	539	17
RTOR Reduction (vph)	0	0	33	0	0	44	0	0	99	0	0	11
Lane Group Flow (vph)	26	6	3	163	4	14	22	844	60	7	539	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.5	4.8	4.8	10.8	14.1	14.1	0.6	21.8	21.8	0.5	21.7	21.7
Effective Green, g (s)	1.5	4.8	4.8	10.8	14.1	14.1	0.6	21.8	21.8	0.5	21.7	21.7
Actuated g/C Ratio	0.03	0.08	0.08	0.19	0.24	0.24	0.01	0.38	0.38	0.01	0.37	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	46	154	131	330	454	385	18	1915	596	15	1906	593
v/s Ratio Prot	0.01	0.00		c0.09	0.00		c0.01	c0.17		0.00	0.11	
v/s Ratio Perm			0.00			c0.01			0.04			0.00
v/c Ratio	0.57	0.04	0.02	0.49	0.01	0.04	1.22	0.44	0.10	0.47	0.28	0.01
Uniform Delay, d1	27.9	24.4	24.4	21.1	16.6	16.7	28.6	13.5	11.7	28.6	12.7	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.9	0.1	0.1	1.2	0.0	0.0	289.8	0.2	0.1	21.2	0.1	0.0
Delay (s)	42.8	24.5	24.5	22.3	16.6	16.8	318.4	13.7	11.8	49.8	12.7	11.4
Level of Service	D	C	C	C	B	B	F	B	B	D	B	B
Approach Delay (s)		31.5			20.7			19.9			13.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



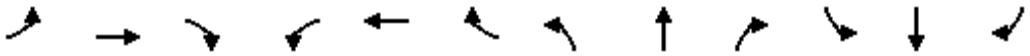
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	16	26	306	40	17	63	951	336	29	658	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	17	27	322	42	18	66	1001	354	31	693	14
RTOR Reduction (vph)	0	0	24	0	0	12	0	0	233	0	0	10
Lane Group Flow (vph)	6	17	3	322	42	6	66	1001	121	31	693	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	6.8	6.8	16.4	22.7	22.7	3.1	21.7	21.7	1.3	19.9	19.9
Effective Green, g (s)	1.5	8.8	7.8	17.4	24.7	23.7	4.1	23.7	22.7	2.3	21.9	20.9
Actuated g/C Ratio	0.02	0.13	0.12	0.26	0.37	0.36	0.06	0.36	0.34	0.03	0.33	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	40	248	187	465	695	567	110	1820	543	61	1682	500
v/s Ratio Prot	0.00	0.01		c0.18	c0.02		c0.04	c0.20		0.02	0.14	
v/s Ratio Perm			0.00			0.00			0.08			0.00
v/c Ratio	0.15	0.07	0.02	0.69	0.06	0.01	0.60	0.55	0.22	0.51	0.41	0.01
Uniform Delay, d1	31.7	25.1	25.8	22.0	13.3	13.7	30.3	17.0	15.5	31.4	17.2	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.1	0.0	4.4	0.0	0.0	8.5	0.4	0.2	6.5	0.2	0.0
Delay (s)	33.5	25.2	25.8	26.4	13.3	13.7	38.8	17.3	15.7	37.9	17.3	15.5
Level of Service	C	C	C	C	B	B	D	B	B	D	B	B
Approach Delay (s)		26.6			24.4			17.9			18.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	66.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	7	40	49	16	78	100	1301	107	44	1007	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	7	42	52	17	82	105	1369	113	46	1060	55
RTOR Reduction (vph)	0	0	36	0	0	68	0	0	57	0	0	32
Lane Group Flow (vph)	24	7	6	52	17	14	105	1369	56	46	1060	23
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	9.7	9.7	2.0	11.2	11.2	6.5	32.9	32.9	2.0	28.4	28.4
Effective Green, g (s)	0.5	9.7	9.7	2.0	11.2	11.2	6.5	32.9	32.9	2.0	28.4	28.4
Actuated g/C Ratio	0.01	0.15	0.15	0.03	0.17	0.17	0.10	0.49	0.49	0.03	0.43	0.43
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	271	231	53	313	266	173	2512	782	53	2168	675
v/s Ratio Prot	0.01	0.00		c0.03	c0.01		c0.06	c0.27		0.03	0.21	
v/s Ratio Perm			0.00			0.01			0.04			0.01
v/c Ratio	1.85	0.03	0.03	0.98	0.05	0.05	0.61	0.54	0.07	0.87	0.49	0.03
Uniform Delay, d1	33.0	24.4	24.4	32.3	23.3	23.2	28.8	11.7	8.8	32.2	13.8	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	579.3	0.0	0.0	116.3	0.1	0.1	5.9	0.2	0.0	76.0	0.2	0.0
Delay (s)	612.4	24.4	24.4	148.6	23.3	23.3	34.7	11.9	8.9	108.2	14.0	11.1
Level of Service	F	C	C	F	C	C	C	B	A	F	B	B
Approach Delay (s)		217.7			66.5			13.2			17.6	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	54	9	36	82	3	35	118	14	2	47	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1549	1770	1852		1770	1828		1770	1711	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1549	1770	1852		1770	1828		1770	1711	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	57	9	38	86	3	37	124	15	2	49	45
RTOR Reduction (vph)	0	0	7	0	3	0	0	7	0	0	36	0
Lane Group Flow (vph)	116	57	2	38	86	0	37	132	0	2	58	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	6.1	10.6	10.6	1.6	6.1		1.1	9.0		0.4	8.3	
Effective Green, g (s)	6.1	10.6	10.6	1.6	6.1		1.1	9.0		0.4	8.3	
Actuated g/C Ratio	0.15	0.27	0.27	0.04	0.15		0.03	0.23		0.01	0.21	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	273	499	415	72	285		49	415		18	359	
v/s Ratio Prot	c0.07	c0.03		0.02	c0.05		c0.02	c0.07		0.00	0.03	
v/s Ratio Perm			0.00									
v/c Ratio	0.42	0.11	0.01	0.53	0.30		0.76	0.32		0.11	0.16	
Uniform Delay, d1	15.2	11.0	10.6	18.6	14.9		19.1	12.7		19.4	12.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.1	0.0	6.8	0.6		48.1	0.4		2.7	0.2	
Delay (s)	16.2	11.1	10.6	25.5	15.5		67.2	13.2		22.2	13.0	
Level of Service	B	B	B	C	B		E	B		C	B	
Approach Delay (s)		14.3			18.5			24.5			13.2	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	39.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

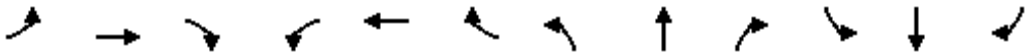
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	117	309	428	42	323	914
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	123	325	451	44	340	962
RTOR Reduction (vph)	0	271	0	30	0	0
Lane Group Flow (vph)	123	54	451	14	340	962
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	10.1	10.1	19.8	19.8	16.1	40.9
Effective Green, g (s)	10.1	10.1	19.8	19.8	16.1	40.9
Actuated g/C Ratio	0.17	0.17	0.32	0.32	0.26	0.67
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	293	262	605	514	467	1249
v/s Ratio Prot	c0.07		0.24		0.19	c0.52
v/s Ratio Perm		0.03		0.01		
v/c Ratio	0.42	0.21	0.75	0.03	0.73	0.77
Uniform Delay, d1	22.8	22.0	18.4	14.0	20.5	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.4	5.0	0.0	5.6	3.0
Delay (s)	23.8	22.4	23.3	14.1	26.1	9.8
Level of Service	C	C	C	B	C	A
Approach Delay (s)	22.8		22.5			14.1
Approach LOS	C		C			B

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	44	30	555	12	15	789
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.42	1.00
Satd. Flow (perm)	1770	1583	1863	1583	791	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	32	584	13	16	831
RTOR Reduction (vph)	0	29	0	5	0	0
Lane Group Flow (vph)	46	3	584	8	16	831
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	3.4	3.4	21.7	21.7	21.7	21.7
Effective Green, g (s)	3.4	3.4	21.7	21.7	21.7	21.7
Actuated g/C Ratio	0.10	0.10	0.64	0.64	0.64	0.64
Clearance Time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	176	158	1186	1007	503	1186
v/s Ratio Prot	c0.03		0.31			c0.45
v/s Ratio Perm		0.00		0.01	0.02	
v/c Ratio	0.26	0.02	0.49	0.01	0.03	0.70
Uniform Delay, d1	14.2	13.8	3.3	2.3	2.3	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	0.3	0.0	0.0	1.9
Delay (s)	15.0	13.9	3.6	2.3	2.3	6.0
Level of Service	B	B	A	A	A	A
Approach Delay (s)	14.5		3.6			5.9
Approach LOS	B		A			A

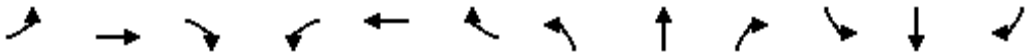
Intersection Summary			
HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	34.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	391	6	58	497	0	5	4	5	8	5	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.98	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.92		1.00	0.92	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1549	1770	3539		1770	1696		1770	1699	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3539	1549	1770	3539		1770	1696		1770	1699	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	412	6	61	523	0	5	4	5	8	5	6
RTOR Reduction (vph)	0	0	4	0	0	0	0	5	0	0	6	0
Lane Group Flow (vph)	0	412	2	61	523	0	5	4	0	8	5	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		9.9	9.9	1.3	15.2		0.3	2.1		0.3	2.1	
Effective Green, g (s)		9.9	9.9	1.3	15.2		0.3	2.1		0.3	2.1	
Actuated g/C Ratio		0.33	0.33	0.04	0.51		0.01	0.07		0.01	0.07	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1184	518	78	1817		18	120		18	121	
v/s Ratio Prot		0.12		c0.03	c0.15		0.00	0.00		c0.00	c0.00	
v/s Ratio Perm			0.00									
v/c Ratio		0.35	0.00	0.78	0.29		0.28	0.04		0.44	0.04	
Uniform Delay, d1		7.4	6.6	14.0	4.1		14.5	12.8		14.6	12.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0	38.7	0.1		8.3	0.1		16.5	0.2	
Delay (s)		7.6	6.6	52.7	4.2		22.8	12.9		31.1	13.0	
Level of Service		A	A	D	A		C	B		C	B	
Approach Delay (s)		7.6			9.3			16.5			20.6	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	29.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

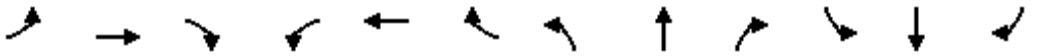
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	556	84	23	376	35	12	2	41	135	5	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99			0.90		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	3460		1770	3487			1641		1770	1580	
Flt Permitted	0.95	1.00		0.95	1.00			0.50		0.95	1.00	
Satd. Flow (perm)	1770	3460		1770	3487			829		1770	1580	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	585	88	24	396	37	13	2	43	142	5	77
RTOR Reduction (vph)	0	12	0	0	7	0	0	39	0	0	64	0
Lane Group Flow (vph)	55	661	0	24	426	0	0	19	0	142	18	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Perm			Split		
Protected Phases	7	4		3	8			2		6	6	
Permitted Phases							2					
Actuated Green, G (s)	1.8	18.6		0.4	17.2			4.9		8.3	8.3	
Effective Green, g (s)	1.8	18.6		0.4	17.2			4.9		8.3	8.3	
Actuated g/C Ratio	0.04	0.39		0.01	0.36			0.10		0.17	0.17	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	66	1335		15	1244			84		305	272	
v/s Ratio Prot	c0.03	c0.19		0.01	0.12					c0.08	0.01	
v/s Ratio Perm								c0.02				
v/c Ratio	0.83	0.50		1.60	0.34			0.23		0.47	0.07	
Uniform Delay, d1	23.1	11.2		23.9	11.4			19.9		18.0	16.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	56.6	0.3		458.5	0.2			1.4		1.1	0.1	
Delay (s)	79.6	11.5		482.4	11.5			21.3		19.1	16.8	
Level of Service	E	B		F	B			C		B	B	
Approach Delay (s)		16.7			36.2			21.3			18.2	
Approach LOS		B			D			C			B	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	48.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

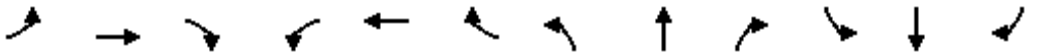
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	1	18	20	0	27	10	198	52	64	134	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00		0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1550	1770		1550	1770	1863	1550	1770	1863	1550
Flt Permitted	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1550	1770		1550	1770	1863	1550	1770	1863	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	1	19	21	0	28	11	208	55	67	141	12
RTOR Reduction (vph)	0	0	18	0	0	26	0	0	39	0	0	8
Lane Group Flow (vph)	18	1	1	21	0	2	11	208	16	67	141	4
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.3	1.7	1.7	0.3		1.7	0.3	8.2	8.2	1.8	9.7	9.7
Effective Green, g (s)	0.3	1.7	1.7	0.3		1.7	0.3	8.2	8.2	1.8	9.7	9.7
Actuated g/C Ratio	0.01	0.06	0.06	0.01		0.06	0.01	0.29	0.29	0.06	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	19	113	94	19		94	19	546	454	114	645	537
v/s Ratio Prot	0.01	0.00		c0.01			0.01	c0.11		c0.04	0.08	
v/s Ratio Perm			0.00			c0.00			0.01			0.00
v/c Ratio	0.95	0.01	0.01	1.11		0.02	0.58	0.38	0.04	0.59	0.22	0.01
Uniform Delay, d1	13.8	12.4	12.4	13.8		12.4	13.8	7.9	7.1	12.7	6.5	6.0
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	179.6	0.0	0.1	242.0		0.1	36.3	0.4	0.0	7.5	0.2	0.0
Delay (s)	193.4	12.4	12.4	255.9		12.4	50.1	8.3	7.1	20.3	6.6	6.0
Level of Service	F	B	B	F		B	D	A	A	C	A	A
Approach Delay (s)		98.2			116.8			9.8			10.8	
Approach LOS		F			F			A			B	

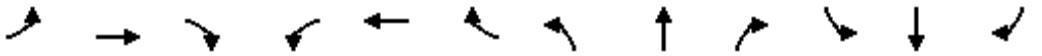
Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	28.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



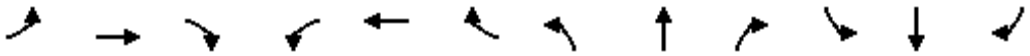
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	36	71	202	47	16	57	631	222	6	767	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0		3.0	4.3	4.3	2.0	3.2	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1825	1583		1779		1770	1863	1583	1770	3534	
Flt Permitted		0.98	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1825	1583		1779		1770	1863	1583	1770	3534	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	38	75	213	49	17	60	664	234	6	807	8
RTOR Reduction (vph)	0	0	68	0	3	0	0	0	127	0	1	0
Lane Group Flow (vph)	0	65	7	0	276	0	60	664	107	6	814	0
Turn Type	Split		Perm	Split			Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			
Actuated Green, G (s)		5.9	5.9		17.0		3.6	32.0	32.0	0.9	29.4	
Effective Green, g (s)		6.9	6.9		18.0		4.6	33.0	33.0	1.9	30.4	
Actuated g/C Ratio		0.10	0.10		0.25		0.06	0.46	0.46	0.03	0.42	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.3	5.3	3.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		175	151		444		113	853	725	47	1490	
v/s Ratio Prot		c0.04			c0.16		c0.03	c0.36		0.00	0.23	
v/s Ratio Perm			0.00						0.07			
v/c Ratio		0.37	0.05		0.62		0.53	0.78	0.15	0.13	0.55	
Uniform Delay, d1		30.6	29.6		24.0		32.7	16.5	11.4	34.3	15.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.0		1.9		2.4	4.1	0.0	0.4	0.4	
Delay (s)		31.1	29.7		26.0		35.1	20.6	11.4	34.7	16.1	
Level of Service		C	C		C		D	C	B	C	B	
Approach Delay (s)		30.3			26.0			19.3			16.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



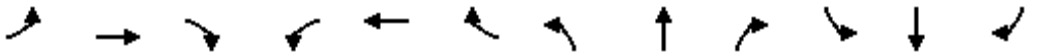
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	178	0	400	400	5	0	383	373	0	357	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	0.95	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1681	1757		1770	3533			1863	1583		1863	1583
Flt Permitted	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1681	1757		1770	3533			1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	243	187	0	421	421	5	0	403	393	0	376	419
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	304	0	0	0
Lane Group Flow (vph)	211	219	0	421	425	0	0	403	89	0	376	419
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	16.7	16.7		25.2	25.2			22.9	22.9		22.6	106.0
Effective Green, g (s)	17.7	17.7		26.2	26.2			23.9	23.9		23.6	106.0
Actuated g/C Ratio	0.17	0.17		0.25	0.25			0.23	0.23		0.22	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		5.0	5.0			3.0	3.0		2.5	
Lane Grp Cap (vph)	281	293		437	873			420	357		415	1583
v/s Ratio Prot	c0.13	0.12		c0.24	0.12			c0.22			c0.20	
v/s Ratio Perm									0.06			0.26
v/c Ratio	0.75	0.75		0.96	0.49			0.96	0.25		0.91	0.26
Uniform Delay, d1	42.1	42.0		39.4	34.1			40.6	33.7		40.1	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	10.3	9.5		34.0	0.9			33.1	0.4		22.8	0.4
Delay (s)	52.3	51.5		73.4	35.0			73.7	34.0		62.9	0.4
Level of Service	D	D		E	D			E	C		E	A
Approach Delay (s)		51.9			54.1			54.1			30.0	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	47.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



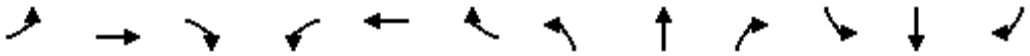
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	564	196	47	501	21	119	54	63	8	40	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		1.00			1.00	0.85		0.96	
Flt Protected		1.00	1.00		1.00			0.97	1.00		0.99	
Satd. Flow (prot)		1859	1583		1846			1801	1583		1786	
Flt Permitted		0.98	1.00		0.93			0.82	1.00		0.96	
Satd. Flow (perm)		1819	1583		1726			1526	1583		1724	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	594	206	49	527	22	125	57	66	8	42	18
RTOR Reduction (vph)	0	0	63	0	2	0	0	0	52	0	14	0
Lane Group Flow (vph)	0	616	143	0	596	0	0	182	14	0	54	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		32.2	32.2		32.2			9.6	9.6		9.6	
Effective Green, g (s)		33.2	33.2		33.2			10.6	10.6		10.6	
Actuated g/C Ratio		0.66	0.66		0.66			0.21	0.21		0.21	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1208	1051		1146			324	336		365	
v/s Ratio Prot												
v/s Ratio Perm		0.34	0.09		c0.35			c0.12	0.01		0.03	
v/c Ratio		0.51	0.14		0.52			0.56	0.04		0.15	
Uniform Delay, d1		4.3	3.1		4.3			17.6	15.7		16.0	
Progression Factor		1.00	1.00		0.72			1.00	1.00		1.00	
Incremental Delay, d2		1.5	0.3		1.5			1.3	0.0		0.1	
Delay (s)		5.8	3.4		4.7			19.0	15.7		16.1	
Level of Service		A	A		A			B	B		B	
Approach Delay (s)		5.2			4.7			18.1			16.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



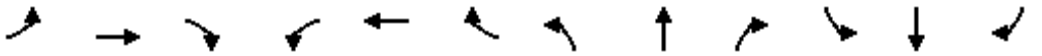
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	601	19	36	655	61	12	44	20	115	76	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.2		3.2	3.2		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	1854		1770	1839		1770	1775			1808	1583
Flt Permitted	0.28	1.00		0.33	1.00		0.52	1.00			0.78	1.00
Satd. Flow (perm)	514	1854		624	1839		967	1775			1447	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	48	633	20	38	689	64	13	46	21	121	80	99
RTOR Reduction (vph)	0	2	0	0	5	0	0	16	0	0	0	78
Lane Group Flow (vph)	48	651	0	38	748	0	13	51	0	0	201	21
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		4
Actuated Green, G (s)	32.0	32.0		32.0	32.0		9.8	9.8			9.8	9.8
Effective Green, g (s)	33.0	33.0		33.0	33.0		10.8	10.8			10.8	10.8
Actuated g/C Ratio	0.66	0.66		0.66	0.66		0.22	0.22			0.22	0.22
Clearance Time (s)	4.2	4.2		4.2	4.2		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	339	1224		412	1214		209	383			313	342
v/s Ratio Prot		0.35			c0.41			0.03				
v/s Ratio Perm	0.09			0.06			0.01				c0.14	0.01
v/c Ratio	0.14	0.53		0.09	0.62		0.06	0.13			0.64	0.06
Uniform Delay, d1	3.2	4.5		3.1	4.9		15.6	15.8			17.8	15.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.9	1.7		0.4	2.3		0.0	0.1			3.4	0.0
Delay (s)	4.1	6.1		3.5	7.2		15.6	15.9			21.2	15.6
Level of Service	A	A		A	A		B	B			C	B
Approach Delay (s)		6.0			7.0			15.8			19.4	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



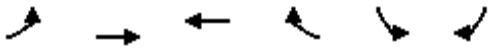
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	547	33	468	518	16	42	32	331	71	99	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0	3.0		3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.98	
Satd. Flow (prot)	1770	1847		1770	1854			1812	1583		1776	
Flt Permitted	0.95	1.00		0.95	1.00			0.63	1.00		0.87	
Satd. Flow (perm)	1770	1847		1770	1854			1171	1583		1572	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	576	35	493	545	17	44	34	348	75	104	54
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	289	0	11	0
Lane Group Flow (vph)	45	609	0	493	561	0	0	78	59	0	222	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		
Actuated Green, G (s)	3.0	42.1		29.8	68.9			15.9	15.9		15.9	
Effective Green, g (s)	4.0	43.1		30.8	69.9			16.9	16.9		16.9	
Actuated g/C Ratio	0.04	0.43		0.31	0.70			0.17	0.17		0.17	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0	4.0		4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)	71	796		545	1296			198	268		266	
v/s Ratio Prot	0.03	c0.33		c0.28	0.30							
v/s Ratio Perm								0.07	0.04		c0.14	
v/c Ratio	0.63	0.76		0.90	0.43			0.39	0.22		0.84	
Uniform Delay, d1	47.3	24.1		33.2	6.5			37.0	35.9		40.2	
Progression Factor	1.08	0.82		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	11.7	3.9		18.1	1.1			0.5	0.2		19.0	
Delay (s)	62.8	23.8		51.3	7.6			37.5	36.0		59.2	
Level of Service	E	C		D	A			D	D		E	
Approach Delay (s)		26.5			28.0			36.3			59.2	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	32.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	110	260	154	74	13	632	1043	47	30	1172	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.6	3.9	3.0	1.6	2.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	75	116	274	162	78	14	665	1098	49	32	1234	3
RTOR Reduction (vph)	0	0	229	0	0	12	0	0	27	0	0	2
Lane Group Flow (vph)	75	116	45	162	78	2	665	1098	22	32	1234	1
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	14.0	14.0	14.0	14.0	14.0	14.0	17.0	40.7	40.7	6.0	31.7	31.7
Effective Green, g (s)	15.0	15.0	15.0	15.0	15.0	15.0	18.0	43.0	41.7	7.0	34.0	32.7
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.20	0.47	0.46	0.08	0.37	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.9	4.9	4.0	3.9	3.9
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	290	305	259	290	305	259	675	1661	721	135	1314	565
v/s Ratio Prot	0.04	c0.06		c0.09	0.04		c0.19	0.31		0.02	c0.35	
v/s Ratio Perm			0.03			0.00			0.01			0.00
v/c Ratio	0.26	0.38	0.17	0.56	0.26	0.01	0.99	0.66	0.03	0.24	0.94	0.00
Uniform Delay, d1	33.4	34.2	33.0	35.3	33.4	32.1	36.7	18.7	13.8	39.8	27.8	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	0.1	1.3	0.2	0.0	30.6	1.1	0.0	0.3	12.9	0.0
Delay (s)	33.6	34.4	33.1	36.6	33.6	32.1	67.3	19.8	13.8	40.1	40.7	19.0
Level of Service	C	C	C	D	C	C	E	B	B	D	D	B
Approach Delay (s)		33.5			35.4			37.0			40.7	
Approach LOS		C			D			D			D	

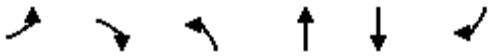
Intersection Summary			
HCM Average Control Delay	37.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	91.6	Sum of lost time (s)	9.6
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	55	541	608	299	255	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	3539	1863	1545	3364	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	3539	1863	1545	3364	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	569	640	315	268	58
RTOR Reduction (vph)	0	0	0	170	38	0
Lane Group Flow (vph)	58	569	640	145	288	0
Confl. Peds. (#/hr)				4		4
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	2.1	27.3	21.2	21.2	10.6	
Effective Green, g (s)	2.1	27.3	21.2	21.2	10.6	
Actuated g/C Ratio	0.05	0.59	0.46	0.46	0.23	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	81	2105	860	714	777	
v/s Ratio Prot	c0.03	0.16	c0.34		c0.09	
v/s Ratio Perm				0.09		
v/c Ratio	0.72	0.27	0.74	0.20	0.37	
Uniform Delay, d1	21.6	4.5	10.1	7.3	14.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	25.8	0.1	3.5	0.1	0.3	
Delay (s)	47.4	4.6	13.6	7.5	15.1	
Level of Service	D	A	B	A	B	
Approach Delay (s)		8.5	11.6		15.1	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	333	672	557	30	58	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.96	1.00	1.00
Satd. Flow (prot)	1770	1546	1681	1694	1863	1561
Flt Permitted	0.95	1.00	0.95	0.58	1.00	1.00
Satd. Flow (perm)	1770	1546	1681	1028	1863	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	351	707	586	32	61	580
RTOR Reduction (vph)	0	529	0	0	0	395
Lane Group Flow (vph)	351	178	311	307	61	185
Confl. Peds. (#/hr)		2				2
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	14.8	14.8	13.3	36.1	18.8	18.8
Effective Green, g (s)	14.8	14.8	13.3	36.1	18.8	18.8
Actuated g/C Ratio	0.25	0.25	0.23	0.61	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	445	388	380	780	595	498
v/s Ratio Prot			c0.18	0.09	0.03	
v/s Ratio Perm	c0.20	0.11		c0.15		0.12
v/c Ratio	0.79	0.46	0.82	0.39	0.10	0.37
Uniform Delay, d1	20.6	18.7	21.7	5.8	14.1	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	0.9	12.8	0.3	0.1	0.5
Delay (s)	29.6	19.5	34.5	6.1	14.2	16.0
Level of Service	C	B	C	A	B	B
Approach Delay (s)	22.9			20.4	15.8	
Approach LOS	C			C	B	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection 13 **New Meadow Dr/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	28	28	101.4%	56.7	7.7	E
	Through						
	Right Turn	6	5	90.0%	14.6	11.7	B
	Subtotal	**34**	**34**	**99.4%**	**50.4**	**8.2**	**D**
EB	Left Turn	9	8	85.6%	68.0	16.9	E
	Through	633	615	97.1%	6.0	0.8	A
	Right Turn						
	Subtotal	**642**	**623**	**97.0%**	**6.7**	**1.0**	**A**
WB	Left Turn						
	Through	998	675	67.6%	13.3	0.6	B
	Right Turn	208	144	69.1%	18.0	1.0	B
	Subtotal	**1,206**	**818**	**67.9%**	**14.1**	**0.5**	**B**
Total		**1,882**	**1,475**	**78.4%**	**11.9**	**0.5**	**B**

Intersection 10 **Diamond Creek Blvd/Blue Oaks Blvd-Wal-Mart** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	66	50	75.2%	232.6	57.4	F
	Through	38	29	75.0%	237.3	53.0	F
	Right Turn	8	8	96.3%	191.6	68.4	F
	Subtotal	**112**	**86**	**76.6%**	**231.3**	**55.5**	**F**
SB	Left Turn	63	65	102.5%	45.2	5.5	D
	Through	7	8	112.9%	50.7	12.5	D
	Right Turn	44	43	97.3%	42.4	8.3	D
	Subtotal	**114**	**115**	**101.1%**	**44.4**	**5.9**	**D**
EB	Left Turn	22	25	111.4%	87.0	11.9	F
	Through	428	416	97.1%	27.6	3.2	C
	Right Turn	8	7	91.3%	6.8	2.8	A
	Subtotal	**458**	**447**	**97.7%**	**30.5**	**3.1**	**C**
WB	Left Turn	7	5	70.0%	88.7	18.9	F
	Through	743	500	67.3%	59.5	11.7	E
	Right Turn	21	17	80.5%	36.1	11.4	D
	Subtotal	**771**	**522**	**67.7%**	**58.9**	**11.7**	**E**
Total		**1,455**	**1,171**	**80.5%**	**59.2**	**7.1**	**E**

Intersection 15 **Foothills Blvd/Blue Oaks Blvd-Hwy 65 NB Ramp** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	211	146	69.2%	251.8	34.4	F
	Through	203	186	91.8%	88.5	24.2	F
	Right Turn	55	52	94.2%	2.9	0.5	A
	Subtotal	**469**	**384**	**81.9%**	**139.5**	**11.3**	**F**
SB	Left Turn	130	105	80.9%	189.8	43.6	F
	Through	201	171	85.3%	53.1	4.5	D
	Right Turn	225	123	54.6%	363.3	28.6	F
	Subtotal	**556**	**400**	**71.9%**	**185.5**	**21.3**	**F**
EB	Left Turn	99	65	66.1%	252.3	63.4	F
	Through	475	452	95.2%	85.1	10.3	F
	Right Turn	86	80	93.3%	95.8	18.1	F
	Subtotal	**660**	**598**	**90.5%**	**104.9**	**15.6**	**F**
WB	Left Turn	71	57	79.7%	72.2	6.5	E
	Through	770	546	70.9%	59.6	1.1	E
	Right Turn	58	40	68.3%	13.8	4.1	B
	Subtotal	**899**	**642**	**71.4%**	**57.9**	**1.6**	**E**
Total		**2,584**	**2,023**	**78.3%**	**112.3**	**7.0**	**F**

Intersection 11 **Woodcreek Oaks Blvd-Pleasant Grove Blvd/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	19	16	86.3%	61.4	8.7	E
	Through	63	61	97.1%	56.5	6.4	E
	Right Turn	111	109	98.1%	38.6	9.7	D
	Subtotal	**193**	**187**	**96.6%**	**46.7**	**5.3**	**D**
SB	Left Turn	68	66	97.5%	90.8	20.0	F
	Through	46	42	91.7%	56.8	4.9	E
	Right Turn	13	14	109.2%	18.5	4.4	B
	Subtotal	**127**	**123**	**96.6%**	**71.3**	**12.3**	**E**
EB	Left Turn	26	23	88.8%	58.9	8.7	E
	Through	388	376	97.0%	18.2	2.3	B
	Right Turn	65	64	98.8%	16.5	3.2	B
	Subtotal	**479**	**464**	**96.8%**	**20.0**	**1.8**	**B**
WB	Left Turn	199	136	68.5%	71.9	3.0	E
	Through	777	527	67.8%	28.4	2.6	C
	Right Turn						
	Subtotal	**976**	**663**	**67.9%**	**37.5**	**1.7**	**D**
Total		**1,775**	**1,436**	**80.9%**	**36.0**	**2.7**	**D**

Intersection 17 **Washington Blvd/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	154	143	92.7%	65.0	18.9	E
	Through						
	Right Turn	310	302	97.5%	58.7	14.7	E
	Subtotal	**464**	**445**	**95.9%**	**60.9**	**12.7**	**E**
SB	Left Turn	6	6	91.7%	141.8	52.7	F
	Through	151	133	88.3%	148.3	30.8	F
	Right Turn	91	79	86.9%	115.7	27.9	F
	Subtotal	**248**	**218**	**87.9%**	**136.5**	**29.1**	**F**
EB	Left Turn						
	Through	368	322	87.4%	63.8	11.9	E
	Right Turn	97	92	94.3%	10.7	1.4	B
	Subtotal	**465**	**413**	**88.9%**	**52.1**	**9.1**	**D**
WB	Left Turn	143	127	88.5%	119.0	38.8	F
	Through	287	282	98.2%	25.4	2.3	C
	Right Turn	99	100	100.5%	4.6	0.7	A
	Subtotal	**529**	**508**	**96.0%**	**44.7**	**10.4**	**D**
Total		**1,706**	**1,584**	**92.8%**	**63.9**	**6.1**	**E**

Intersection 12 **Wood Meadow Dwy/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	52	52	99.0%	31.7	5.0	C
	Subtotal	**52**	**52**	**99.0%**	**31.7**	**5.0**	**C**
SB	Left Turn	23	21	93.0%	73.1	16.4	E
	Through						
	Right Turn						
	Subtotal	**23**	**21**	**93.0%**	**73.1**	**16.4**	**E**
EB	Left Turn						
	Through	567	552	97.4%	17.8	1.7	B
	Right Turn						
	Subtotal	**567**	**552**	**97.4%**	**17.8**	**1.7**	**B**
WB	Left Turn	19	12	61.1%	71.0	14.5	E
	Through	976	662	67.8%	19.3	0.7	B
	Right Turn	9	6	65.6%	3.1	1.6	A
	Subtotal	**1,004**	**679**	**67.6%**	**20.0**	**0.7**	**B**
Total		**1,646**	**1,304**	**79.2%**	**20.4**	**1.2**	**C**

Intersection 14 **Collector C/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	44	42	95.5%	66.5	8.8	E
	Through	4	5	130.0%	38.0	38.3	D
	Right Turn	80	76	95.5%	44.0	8.6	D
	Subtotal	**128**	**124**	**96.6%**	**52.4**	**7.1**	**D**
SB	Left Turn	84	88	104.3%	105.6	63.6	F
	Through	4	6	140.0%	72.0	77.4	E
	Right Turn	60	62	104.0%	79.1	34.1	E
	Subtotal	**148**	**156**	**105.1%**	**95.7**	**54.4**	**F**
EB	Left Turn	84	73	86.7%	90.0	16.0	F
	Through	2,476	1,968	79.5%	86.2	21.4	F
	Right Turn	80	57	71.0%	109.2	46.2	F
	Subtotal	**2,640**	**2,097**	**79.4%**	**86.9**	**21.2**	**F**
WB	Left Turn	32	21	66.3%	72.7	14.3	E
	Through	4,724	3,131	66.3%	20.3	1.0	C
	Right Turn	72	42	58.3%	11.6	3.0	B
	Subtotal	**4,828**	**3,194**	**66.2%**	**20.5**	**1.1**	**C**
Total		**7,744**	**5,571**	**71.9%**	**48.3**	**6.6**	**D**

Interesction 16 **Fidelity Way/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	336	144	43.0%	791.9	1006.8	F
	Subtotal	**336**	**144**	**43.0%**	**791.9**	**1006.8**	**F**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,524	1,087	71.3%	48.1	12.6	D
	Right Turn	20	14	72.0%	4.2	5.0	A
	Subtotal	**1,544**	**1,101**	**71.3%**	**47.5**	**12.5**	**D**
WB	Left Turn	64	58	90.6%	40.1	29.1	D
	Through	2,064	1,862	90.2%	17.0	32.8	B
	Right Turn						
	Subtotal	**2,128**	**1,920**	**90.2%**	**17.7**	**32.6**	**B**
Total		**4,008**	**3,166**	**79.0%**	**40.5**	**17.5**	**D**

Intersection 90 **Eureka Rd/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	572	567	99.1%	69.6	9.7	E
	Through	644	636	98.7%	50.4	3.0	D
	Right Turn	20	22	112.0%	39.7	15.8	D
	Subtotal	**1,236**	**1,225**	**99.1%**	**59.1**	**5.7**	**E**
SB	Left Turn	964	788	81.7%	170.4	37.2	F
	Through	820	796	97.1%	53.8	4.6	D
	Right Turn						
	Subtotal	**1,784**	**1,584**	**88.8%**	**112.3**	**20.5**	**F**
EB	Left Turn	164	149	91.0%	84.1	29.8	F
	Through	1,372	1,312	95.6%	39.9	3.5	D
	Right Turn	452	418	92.5%	37.1	5.3	D
	Subtotal	**1,988**	**1,879**	**94.5%**	**43.1**	**5.4**	**D**
WB	Left Turn	68	55	81.2%	84.6	18.6	F
	Through	1,712	1,600	93.4%	51.3	12.2	D
	Right Turn	592	566	95.5%	34.1	13.2	C
	Subtotal	**2,372**	**2,220**	**93.6%**	**47.8**	**12.7**	**D**
Total		**7,380**	**6,908**	**93.6%**	**63.3**	**6.5**	**E**

Intersection 105 **Rocky Ridge Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	308	297	96.5%	98.8	20.5	F
	Through	516	532	103.0%	42.7	3.5	D
	Right Turn	272	273	100.4%	25.8	4.1	C
	Subtotal	**1,096**	**1,102**	**100.5%**	**53.9**	**7.6**	**D**
SB	Left Turn	272	262	96.5%	91.4	10.4	F
	Through	1,188	1,193	100.4%	48.9	3.2	D
	Right Turn	524	499	95.3%	78.1	20.7	E
	Subtotal	**1,984**	**1,954**	**98.5%**	**62.1**	**6.9**	**E**
EB	Left Turn	140	117	83.7%	101.8	14.3	F
	Through	1,496	1,408	94.1%	31.4	4.2	C
	Right Turn	160	165	103.3%	16.0	7.1	B
	Subtotal	**1,796**	**1,690**	**94.1%**	**34.8**	**4.0**	**C**
WB	Left Turn	176	168	95.2%	73.1	17.5	E
	Through	1,904	1,739	91.3%	45.5	6.3	D
	Right Turn	184	154	83.9%	25.1	8.5	C
	Subtotal	**2,264**	**2,061**	**91.0%**	**46.3**	**6.7**	**D**
Total		**7,140**	**6,808**	**95.3%**	**49.3**	**2.5**	**D**

Intersection 102 **Santa Clara Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	88	86	98.2%	67.2	12.4	E
	Through	36	32	90.0%	63.7	18.0	E
	Right Turn	120	115	95.7%	20.4	2.4	C
	Subtotal	**244**	**234**	**95.7%**	**43.6**	**5.7**	**D**
SB	Left Turn	176	170	96.4%	56.0	3.3	E
	Through	96	94	97.5%	52.9	8.0	D
	Right Turn	132	132	99.7%	33.9	6.5	C
	Subtotal	**404**	**395**	**97.7%**	**48.1**	**4.4**	**D**
EB	Left Turn	148	124	83.5%	50.0	13.2	D
	Through	1,744	1,666	95.6%	25.4	3.7	C
	Right Turn	44	41	93.6%	27.4	7.6	C
	Subtotal	**1,936**	**1,831**	**94.6%**	**27.1**	**3.7**	**C**
WB	Left Turn	176	143	81.4%	42.0	7.1	D
	Through	2,484	2,206	88.8%	22.1	2.3	C
	Right Turn	44	41	92.7%	10.8	2.9	B
	Subtotal	**2,704**	**2,390**	**88.4%**	**23.2**	**2.6**	**C**
Total		**5,288**	**4,849**	**91.7%**	**27.7**	**2.0**	**C**

Intersection 103 **Sierra Gardens Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	176	166	94.3%	84.0	51.6	F
	Through	40	36	91.0%	95.3	34.8	F
	Right Turn	32	34	105.0%	73.1	35.7	E
	Subtotal	**248**	**236**	**95.2%**	**84.3**	**46.0**	**F**
SB	Left Turn	240	222	92.3%	51.8	7.7	D
	Through	52	51	97.7%	52.2	10.0	D
	Right Turn	40	38	96.0%	45.6	11.1	D
	Subtotal	**332**	**311**	**93.6%**	**51.1**	**7.2**	**D**
EB	Left Turn	48	43	90.0%	80.0	23.1	E
	Through	1,792	1,723	96.2%	14.2	1.8	B
	Right Turn	40	41	103.0%	8.0	1.5	A
	Subtotal	**1,880**	**1,808**	**96.1%**	**15.7**	**1.8**	**B**
WB	Left Turn	28	21	75.7%	97.7	24.1	F
	Through	2,672	2,387	89.3%	30.4	4.3	C
	Right Turn						
	Subtotal	**2,700**	**2,408**	**89.2%**	**31.0**	**4.3**	**C**
Total		**5,160**	**4,762**	**92.3%**	**29.3**	**4.6**	**C**

Intersection 101 **N. Sunrise Ave/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	412	381	92.5%	117.8	42.7	F
	Through	524	527	100.5%	50.3	4.0	D
	Right Turn	172	177	103.0%	26.4	3.9	C
	Subtotal	**1,108**	**1,085**	**97.9%**	**70.4**	**16.0**	**E**
SB	Left Turn	192	205	106.7%	67.3	13.2	E
	Through	828	846	102.2%	52.7	5.0	D
	Right Turn	488	478	98.0%	24.5	6.4	C
	Subtotal	**1,508**	**1,529**	**101.4%**	**46.0**	**6.0**	**D**
EB	Left Turn	452	319	70.6%	245.7	56.6	F
	Through	1,684	1,546	91.8%	60.4	12.6	E
	Right Turn	200	200	100.2%	13.2	1.0	B
	Subtotal	**2,336**	**2,065**	**88.4%**	**84.6**	**18.4**	**F**
WB	Left Turn	216	200	92.8%	57.1	7.2	E
	Through	2,340	2,026	86.6%	41.5	4.8	D
	Right Turn	152	130	85.8%	49.3	8.5	D
	Subtotal	**2,708**	**2,357**	**87.0%**	**43.3**	**4.8**	**D**
Total		**7,660**	**7,037**	**91.9%**	**60.1**	**5.4**	**E**

Intersection 104 **Target Dwy/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	144	132	91.9%	84.7	25.7	F
	Through	24	22	93.3%	77.0	14.1	E
	Right Turn	56	52	92.1%	43.2	13.5	D
	Subtotal	**224**	**206**	**92.1%**	**73.8**	**18.7**	**E**
SB	Left Turn	112	107	95.7%	56.9	12.8	E
	Through	12	14	116.7%	60.5	25.9	E
	Right Turn	136	123	90.6%	42.4	7.6	D
	Subtotal	**260**	**244**	**94.0%**	**50.5**	**8.1**	**D**
EB	Left Turn	168	148	87.9%	89.9	30.2	F
	Through	1,664	1,592	95.7%	16.5	2.3	B
	Right Turn	64	64	100.6%	16.7	5.9	B
	Subtotal	**1,896**	**1,804**	**95.1%**	**22.7**	**4.4**	**C**
WB	Left Turn	72	68	95.0%	75.0	13.8	E
	Through	2,500	2,247	89.9%	34.2	3.3	C
	Right Turn	16	15	92.5%	33.1	16.7	C
	Subtotal	**2,588**	**2,330**	**90.0%**	**35.4**	**3.1**	**D**
Total		**4,968**	**4,585**	**92.3%**	**32.9**	**2.5**	**C**

Intersection 77 **Douglas Blvd/E. Roseville Pkwy** **Signal**

Intersection 38 **Pleasant Grove Blvd/Fairway Dr** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	156	133	85.1%	97.9	22.6	F
	Through	348	323	92.7%	46.6	2.0	D
	Right Turn	149	135	90.3%	22.5	2.8	C
	Subtotal	**653**	**590**	**90.4%**	**52.7**	**6.5**	**D**
SB	Left Turn	33	27	80.3%	118.9	32.5	F
	Through	263	222	84.3%	142.4	39.6	F
	Right Turn	46	35	75.2%	135.8	54.5	F
	Subtotal	**342**	**283**	**82.7%**	**139.2**	**39.8**	**F**
EB	Left Turn	75	79	104.8%	62.7	7.3	E
	Through	140	139	99.1%	51.9	4.4	D
	Right Turn	138	117	84.6%	131.9	40.6	F
	Subtotal	**353**	**334**	**94.6%**	**82.4**	**13.6**	**F**
WB	Left Turn	171	146	85.3%	134.0	40.9	F
	Through	133	131	98.4%	36.4	3.7	D
	Right Turn	53	53	100.4%	18.7	4.8	B
	Subtotal	**357**	**330**	**92.4%**	**76.6**	**16.9**	**E**
Total		**1,705**	**1,537**	**90.1%**	**79.9**	**8.0**	**E**

Intersection 35 **Pleasant Grove Blvd/Highland Pointe Dr-Wal-Mart** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	104	102	97.9%	120.3	25.8	F
	Through	617	570	92.4%	78.5	19.2	E
	Right Turn	11	10	86.4%	81.0	27.3	F
	Subtotal	**732**	**681**	**93.0%**	**84.9**	**18.3**	**F**
SB	Left Turn	46	39	83.7%	92.9	22.7	F
	Through	570	490	86.0%	54.1	6.3	D
	Right Turn	77	69	89.4%	6.9	1.2	A
	Subtotal	**693**	**597**	**86.2%**	**51.2**	**6.3**	**D**
EB	Left Turn	167	109	65.4%	282.0	41.5	F
	Through	2	1	70.0%	97.9	70.8	F
	Right Turn	118	104	87.9%	88.5	30.1	F
	Subtotal	**287**	**214**	**74.7%**	**187.6**	**34.8**	**F**
WB	Left Turn	64	70	109.7%	50.3	4.3	D
	Through	7	6	81.4%	48.7	14.2	D
	Right Turn	77	74	96.6%	48.6	17.0	D
	Subtotal	**148**	**150**	**101.6%**	**49.7**	**9.4**	**D**
Total		**1,860**	**1,643**	**88.3%**	**82.7**	**7.3**	**F**

Intersection 37 **Pleasant Grove Blvd/Hwy 65 NB Ramp** **Side Street Stop**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	205	194	94.8%	59.8	9.5	F
	Through						
	Right Turn	163	164	100.3%	35.4	8.5	E
	Subtotal	**368**	**358**	**97.2%**	**48.9**	**7.0**	**E**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	508	443	87.1%	15.0	4.2	B
	Right Turn	164	140	85.1%	11.1	2.0	B
	Subtotal	**672**	**582**	**86.7%**	**14.0**	**3.5**	**B**
WB	Left Turn						
	Through	555	474	85.4%	8.1	1.8	A
	Right Turn	49	42	85.7%	1.4	0.6	A
	Subtotal	**604**	**516**	**85.4%**	**7.6**	**1.6**	**A**
Total		**1,644**	**1,456**	**88.6%**	**20.3**	**2.8**	**C**

Intersection 36 **Pleasant Grove Blvd/Hwy 65 SB Ramp** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	24	25	102.9%	22.3	2.9	C
	Through						
	Right Turn	131	133	101.4%	21.8	3.1	C
	Subtotal	**155**	**158**	**101.6%**	**21.9**	**2.9**	**C**
EB	Left Turn						
	Through	649	556	85.7%	12.7	2.3	B
	Right Turn	3	2	66.7%	9.1	5.6	A
	Subtotal	**652**	**558**	**85.6%**	**12.7**	**2.3**	**B**
WB	Left Turn						
	Through	760	669	88.1%	12.4	1.4	B
	Right Turn						
	Subtotal	**760**	**669**	**88.1%**	**12.4**	**1.3**	**B**
Total		**1,567**	**1,385**	**88.4%**	**13.6**	**1.3**	**B**

SimTraffic Post-Processor **Amoruso Ranch Specific Plan EIR**
Average Results from 10 Runs **2035 CIP Plus Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	268	272	101.3%	68.1	8.6	E
	Through	728	730	100.3%	49.4	4.6	D
	Right Turn	56	60	107.1%	31.7	9.4	C
	Subtotal	**1,052**	**1,062**	**100.9%**	**53.3**	**4.4**	**D**
SB	Left Turn	836	760	90.9%	133.9	28.9	F
	Through	1,120	1,107	98.9%	53.2	3.2	D
	Right Turn	144	142	98.6%	6.8	1.1	A
	Subtotal	**2,100**	**2,009**	**95.7%**	**80.6**	**12.2**	**F**
EB	Left Turn	220	193	87.8%	55.8	9.1	E
	Through	1,836	1,668	90.8%	30.5	2.8	C
	Right Turn	460	406	88.3%	25.4	2.4	C
	Subtotal	**2,516**	**2,267**	**90.1%**	**31.8**	**2.1**	**C**
WB	Left Turn	124	114	91.6%	80.3	11.5	F
	Through	1,688	1,637	97.0%	84.9	11.5	F
	Right Turn	936	833	89.0%	94.7	24.8	F
	Subtotal	**2,748**	**2,584**	**94.0%**	**87.8**	**15.5**	**F**
Total		**8,416**	**7,921**	**94.1%**	**65.4**	**5.7**	**E**

Intersection 87 **N. Sunrise Ave/Eureka Rd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	564	535	94.9%	67.0	13.8	E
	Through	556	564	101.4%	43.9	2.9	D
	Right Turn	216	211	97.8%	4.0	0.3	A
	Subtotal	**1,336**	**1,310**	**98.1%**	**47.0**	**6.4**	**D**
SB	Left Turn	180	170	94.4%	73.3	9.2	E
	Through	504	491	97.4%	51.3	4.8	D
	Right Turn	272	275	101.2%	24.7	4.4	C
	Subtotal	**956**	**936**	**97.9%**	**47.6**	**3.3**	**D**
EB	Left Turn	232	221	95.3%	83.2	14.7	F
	Through	1,660	1,608	96.9%	28.0	1.1	C
	Right Turn	388	375	96.7%	12.5	1.3	B
	Subtotal	**2,280**	**2,205**	**96.7%**	**31.0**	**2.0**	**C**
WB	Left Turn	200	186	93.0%	114.2	18.0	F
	Through	2,552	2,406	94.3%	72.7	22.4	E
	Right Turn	100	103	103.2%	34.8	20.8	C
	Subtotal	**2,852**	**2,695**	**94.5%**	**74.2**	**21.7**	**E**
Total		**7,424**	**7,146**	**96.3%**	**52.3**	**8.5**	**D**

Intersection 85 **I-80 WB Ramps/Atlantic** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn						
	Through						
	Right Turn	1,116	1,118	100.1%	1.8	0.4	A
	Subtotal	**1,116**	**1,118**	**100.1%**	**1.8**	**0.4**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	880	856	97.3%	20.5	2.9	C
	Right Turn	728	638	87.6%	30.6	3.2	C
	Subtotal	**1,608**	**1,494**	**92.9%**	**24.9**	**2.5**	**C**
WB	Left Turn	1,024	831	81.2%	127.9	33.5	F
	Through	1,276	1,197	93.8%	7.8	1.4	A
	Right Turn						
	Subtotal	**2,300**	**2,028**	**88.2%**	**57.1**	**14.5**	**E**
Total		**5,024**	**4,640**	**92.4%**	**33.3**	**6.4**	**C**

Intersection 86 **I-80 EB Ramps/Eureka Rd-Atlantic St** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	160	159	99.5%	58.3	25.3	E
	Through	476	478	100.3%	54.5	5.8	D
	Right Turn	580	595	102.6%	7.2	0.3	A
	Subtotal	**1,216**	**1,232**	**101.3%**	**32.3**	**4.0**	**C**
SB	Left Turn	412	351	85.1%	176.6	80.4	F
	Through						
	Right Turn	376	344	91.4%	103.9	69.8	F
	Subtotal	**788**	**694**	**88.1%**	**142.5**	**65.5**	**F**
EB	Left Turn	228	149	65.4%	283.1	45.3	F
	Through	1,432	1,413	98.7%	36.0	2.7	D
	Right Turn	336	297	88.5%	14.6	1.1	B
	Subtotal	**1,996**	**1,859**	**93.1%**	**52.3**	**4.6**	**D**
WB	Left Turn						
	Through	1,820	1,677	92.2%	40.2	23.6	D
	Right Turn	1,588	1,503	94.7%	45.7	16.0	D
	Subtotal	**3,408**	**3,180**	**93.3%**	**42.9**	**20.1**	**D**
Total		**7,408**	**6,966**	**94.0%**	**53.1**	**9.1**	**D**

Intersection 64 **Chase Dr/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	20	18	90.0%	56.4	12.7	E
	Through						
	Right Turn	20	20	99.0%	1.2	0.3	A
	Subtotal	**40**	**38**	**94.5%**	**26.8**	**4.6**	**C**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	599	425	71.0%	24.7	6.1	C
	Right Turn	42	32	77.1%	13.3	4.7	B
	Subtotal	**641**	**458**	**71.4%**	**23.9**	**5.9**	**C**
WB	Left Turn	114	88	77.1%	66.2	9.7	E
	Through	601	472	78.6%	9.6	1.2	A
	Right Turn						
	Subtotal	**715**	**560**	**78.3%**	**18.5**	**2.7**	**B**
Total		**1,396**	**1,055**	**75.6%**	**21.2**	**2.9**	**C**

Intersection 69 **Creekside Ridge Dr/Roseville Pkwy-North Drwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	15	14	96.0%	71.7	18.3	E
	Through						
	Right Turn	18	15	85.6%	20.9	7.0	C
	Subtotal	**33**	**30**	**90.3%**	**46.2**	**11.3**	**D**
SB	Left Turn	77	78	101.8%	51.7	3.5	D
	Through	1	1	90.0%	21.4	30.2	C
	Right Turn	73	71	96.8%	48.8	5.1	D
	Subtotal	**151**	**150**	**99.3%**	**50.3**	**3.7**	**D**
EB	Left Turn	25	17	66.4%	36.5	13.1	D
	Through	682	460	67.5%	13.3	1.8	B
	Right Turn	3	2	70.0%	0.2	0.4	A
	Subtotal	**710**	**479**	**67.5%**	**14.1**	**2.0**	**B**
WB	Left Turn	11	10	91.8%	86.8	20.7	F
	Through	698	572	82.0%	25.0	2.6	C
	Right Turn	54	44	82.2%	20.4	2.6	C
	Subtotal	**763**	**627**	**82.1%**	**25.6**	**2.7**	**C**
Total		**1,657**	**1,285**	**77.6%**	**24.7**	**1.5**	**C**

Intersection 65 **Gibson Dr-Castaic Ct/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1	0	10.0%	0.5	1.4	A
	Through	1	1	100.0%	33.8	45.6	C
	Right Turn	12	12	100.0%	28.3	12.6	C
	Subtotal	**14**	**13**	**93.6%**	**30.3**	**11.8**	**C**
SB	Left Turn	299	245	81.8%	166.8	29.0	F
	Through	2	1	45.0%	214.0	129.5	F
	Right Turn	93	71	75.8%	180.4	36.2	F
	Subtotal	**394**	**316**	**80.2%**	**170.4**	**29.3**	**F**
EB	Left Turn	54	39	72.2%	90.8	24.5	F
	Through	565	405	71.6%	12.3	2.8	B
	Right Turn						
	Subtotal	**619**	**444**	**71.7%**	**19.4**	**5.7**	**B**
WB	Left Turn	16	11	66.3%	78.3	14.2	E
	Through	621	506	81.5%	31.6	2.3	C
	Right Turn	167	130	77.7%	5.6	0.8	A
	Subtotal	**804**	**647**	**80.4%**	**27.1**	**1.9**	**C**
Total		**1,831**	**1,419**	**77.5%**	**56.5**	**7.3**	**E**

Intersection 71 **N. Sunrise/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	179	155	86.8%	134.4	41.0	F
	Through	16	17	104.4%	47.5	10.9	D
	Right Turn	71	66	93.0%	7.0	2.8	A
	Subtotal	**266**	**238**	**89.5%**	**93.9**	**30.6**	**F**
SB	Left Turn	4	4	92.5%	122.9	52.6	F
	Through	52	48	91.9%	95.8	37.9	F
	Right Turn	92	90	97.5%	73.0	23.3	E
	Subtotal	**148**	**141**	**95.4%**	**83.2**	**20.4**	**F**
EB	Left Turn	25	15	60.4%	53.4	10.5	D
	Through	644	432	67.0%	38.3	3.0	D
	Right Turn	171	120	70.4%	18.4	3.6	B
	Subtotal	**840**	**567**	**67.5%**	**34.5**	**2.9**	**C**
WB	Left Turn	71	40	56.1%	258.3	44.9	F
	Through	675	508	75.3%	55.0	10.3	E
	Right Turn						
	Subtotal	**746**	**548**	**73.5%**	**69.9**	**7.4**	**E**
Total		**2,000**	**1,495**	**74.7%**	**61.4**	**7.3**	**E**

Intersection 67 **Reserve Dr/Roseville Pkwy-Burger King Drwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	93	74	79.0%	207.0	52.6	F
	Through	24	19	78.8%	211.5	59.9	F
	Right Turn	119	87	72.8%	197.9	52.9	F
	Subtotal	**236**	**179**	**75.8%**	**203.1**	**46.2**	**F**
SB	Left Turn	76	77	101.3%	50.2	6.7	D
	Through	54	54	99.6%	55.6	12.9	E
	Right Turn	21	25	117.6%	11.2	7.0	B
	Subtotal	**151**	**156**	**103.0%**	**46.0**	**7.9**	**D**
EB	Left Turn	8	5	58.8%	77.9	13.1	E
	Through	767	552	71.9%	57.9	9.5	E
	Right Turn	60	43	71.2%	51.5	10.3	D
	Subtotal	**835**	**599**	**71.7%**	**57.6**	**9.4**	**E**
WB	Left Turn	89	63	71.0%	139.3	42.9	F
	Through	653	510	78.2%	25.6	2.1	C
	Right Turn	67	51	76.4%	2.9	0.7	A
	Subtotal	**809**	**625**	**77.2%**	**35.3**	**5.5**	**D**
Total		**2,031**	**1,558**	**76.7%**	**64.2**	**7.8**	**E**

Intersection 72 **Secret Ravine Pkwy/Roseville Pkwy-Douglas Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	41	38	92.7%	127.1	45.1	F
	Through						
	Right Turn	133	113	84.6%	105.5	42.1	F
	Subtotal	**174**	**151**	**86.5%**	**110.8**	**31.7**	**F**
EB	Left Turn	167	118	70.8%	46.8	10.3	D
	Through	509	353	69.3%	3.7	0.8	A
	Right Turn	1	1	100.0%	0.9	1.5	A
	Subtotal	**677**	**472**	**69.7%**	**14.6**	**3.2**	**B**
WB	Left Turn	4	4	87.5%	109.7	36.6	F
	Through	575	488	84.8%	68.1	19.4	E
	Right Turn	38	36	95.8%	38.1	22.4	D
	Subtotal	**617**	**527**	**85.5%**	**66.2**	**19.1**	**E**
Total		**1,468**	**1,150**	**78.3%**	**50.5**	**6.7**	**D**

Intersection 70 **Taylor Rd/Roseville Pkwy** **Signal**

SimTraffic Post-Processor **Amoruso Ranch EIR**
Average Results from 10 Runs **2035 CIP Plus Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	89	92	103.5%	65.8	13.8	E
	Through	105	99	94.4%	45.5	3.5	D
	Right Turn	59	58	97.5%	29.0	5.7	C
	Subtotal	**253**	**249**	**98.3%**	**49.2**	**6.0**	**D**
SB	Left Turn	117	52	44.1%	426.8	22.9	F
	Through	67	52	77.3%	50.0	6.1	D
	Right Turn	51	44	86.7%	32.7	3.0	C
	Subtotal	**235**	**148**	**62.8%**	**178.1**	**17.1**	**F**
EB	Left Turn	73	46	62.5%	143.5	48.3	F
	Through	648	461	71.2%	29.8	3.8	C
	Right Turn	40	29	71.5%	6.2	1.5	A
	Subtotal	**761**	**535**	**70.3%**	**38.2**	**6.6**	**D**
WB	Left Turn	51	34	67.3%	72.6	11.4	E
	Through	636	500	78.6%	66.5	8.8	E
	Right Turn	257	193	75.1%	53.2	3.7	D
	Subtotal	**944**	**727**	**77.0%**	**63.4**	**7.1**	**E**
Total		**2,193**	**1,659**	**75.6%**	**63.2**	**4.8**	**E**

Intersection 66 **Roseville Pkwy/West Mall Dwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	8	6	68.8%	68.5	22.8	E
	Through	714	560	78.5%	19.1	4.8	B
	Right Turn	26	21	81.2%	3.1	1.0	A
	Subtotal	**748**	**587**	**78.5%**	**18.9**	**4.5**	**B**
SB	Left Turn	80	60	75.1%	76.5	12.3	E
	Through	786	582	74.0%	14.3	7.3	B
	Right Turn	9	6	62.2%	15.8	18.4	B
	Subtotal	**875**	**647**	**74.0%**	**20.1**	**6.4**	**C**
EB	Left Turn	6	4	68.3%	49.7	19.5	D
	Through	1	0	40.0%	3.6	6.2	A
	Right Turn	6	7	121.7%	24.9	12.6	C
	Subtotal	**13**	**12**	**90.8%**	**33.5**	**11.1**	**C**
WB	Left Turn	34	33	97.6%	45.0	8.0	D
	Through	1	0	20.0%	3.7	7.2	A
	Right Turn	84	86	101.8%	3.0	0.5	A
	Subtotal	**119**	**119**	**99.9%**	**15.0**	**3.8**	**B**
Total		**1,755**	**1,365**	**77.8%**	**19.3**	**4.4**	**B**

Intersection 63 **Gibson Dr/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	19	20	103.7%	58.5	10.0	E
	Through						
	Right Turn	252	230	91.2%	37.7	17.9	D
	Subtotal	**271**	**250**	**92.1%**	**39.3**	**16.9**	**D**
EB	Left Turn	117	84	71.7%	70.4	7.9	E
	Through	622	440	70.8%	6.4	1.5	A
	Right Turn						
	Subtotal	**739**	**524**	**70.9%**	**16.7**	**1.8**	**B**
WB	Left Turn						
	Through	594	401	67.5%	60.8	13.8	E
	Right Turn	26	19	73.1%	43.5	10.8	D
	Subtotal	**620**	**420**	**67.8%**	**60.0**	**13.2**	**E**
Total		**1,630**	**1,194**	**73.2%**	**36.5**	**5.5**	**D**

Intersection 174 **Galleria/Antelope Creek** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	27	20	73.0%	65.5	23.7	E
	Through	496	434	87.4%	19.9	7.2	B
	Right Turn	50	39	78.6%	2.0	0.4	A
	Subtotal	**573**	**493**	**86.0%**	**20.2**	**6.3**	**C**
SB	Left Turn	71	49	69.0%	199.9	43.5	F
	Through	468	335	71.5%	135.4	46.6	F
	Right Turn	43	41	94.7%	9.0	7.9	A
	Subtotal	**582**	**424**	**72.9%**	**130.5**	**40.2**	**F**
EB	Left Turn	136	130	95.7%	76.5	30.3	E
	Through	18	17	95.6%	51.0	18.6	D
	Right Turn	28	29	102.1%	1.9	2.6	A
	Subtotal	**182**	**176**	**96.7%**	**61.9**	**23.1**	**E**
WB	Left Turn	124	74	60.0%	193.2	71.8	F
	Through	24	21	85.8%	57.9	11.8	E
	Right Turn	84	81	96.8%	5.4	3.0	A
	Subtotal	**232**	**176**	**76.0%**	**85.4**	**21.3**	**F**
Total		**1,569**	**1,269**	**80.9%**	**70.1**	**9.6**	**E**

Intersection 68 **Galleria/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	173	102	58.7%	310.9	16.4	F
	Through	223	209	93.9%	46.8	8.0	D

NB	Right Turn	21	17	79.0%	4.4	0.8	A
	Subtotal	**417**	**328**	**78.6%**	**126.6**	**9.9**	**F**
SB	Left Turn	215	104	48.5%	283.4	56.4	F
	Through	260	213	81.8%	41.0	10.1	D
	Right Turn	121	96	78.9%	4.3	0.6	A
	Subtotal	**596**	**412**	**69.2%**	**91.0**	**8.1**	**F**
EB	Left Turn	183	123	67.3%	157.7	16.0	F
	Through	478	362	75.6%	61.1	8.4	E
	Right Turn	280	200	71.3%	6.5	0.7	A
	Subtotal	**941**	**684**	**72.7%**	**62.7**	**5.6**	**E**
WB	Left Turn	85	71	84.0%	64.5	15.0	E
	Through	491	411	83.6%	44.7	7.4	D
	Right Turn	178	145	81.7%	3.2	0.3	A
	Subtotal	**754**	**627**	**83.2%**	**37.4**	**4.7**	**D**
Total		**2,708**	**2,052**	**75.8%**	**70.7**	**3.3**	**E**

Intersection 34 **Pleasant Grove Blvd/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	251	149	59.5%	120.1	6.8	F
	Through	341	263	77.1%	50.3	6.3	D
	Right Turn	312	225	72.1%	7.6	1.8	A
	Subtotal	**904**	**637**	**70.5%**	**51.7**	**3.3**	**D**
SB	Left Turn	75	65	86.0%	128.1	11.2	F
	Through	290	237	81.9%	146.6	31.7	F
	Right Turn	6	6	93.3%	35.4	31.2	D
	Subtotal	**371**	**308**	**82.9%**	**141.1**	**27.0**	**F**
EB	Left Turn	16	15	91.3%	118.0	30.2	F
	Through	342	242	70.6%	239.0	24.1	F
	Right Turn	211	142	67.3%	234.5	28.5	F
	Subtotal	**569**	**398**	**70.0%**	**232.9**	**25.1**	**F**
WB	Left Turn	251	154	61.2%	299.4	25.4	F
	Through	452	433	95.9%	54.2	8.4	D
	Right Turn	66	68	102.4%	19.3	5.7	B
	Subtotal	**769**	**654**	**85.1%**	**108.2**	**9.7**	**F**
Total		**2,613**	**1,997**	**76.4%**	**119.9**	**6.9**	**F**

Intersection 169 **Stanford Ranch Rd/Fairway Dr** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	67	63	93.9%	50.2	9.0	D
	Through	349	352	100.9%	27.0	9.2	C
	Right Turn	57	61	106.1%	14.3	4.3	B
	Subtotal	**473**	**476**	**100.6%**	**28.6**	**6.0**	**C**
SB	Left Turn	18	18	98.3%	47.0	8.1	D
	Through	239	249	104.2%	27.6	1.9	C
	Right Turn	21	20	94.3%	7.1	1.8	A
	Subtotal	**278**	**287**	**103.1%**	**27.4**	**1.9**	**C**
EB	Left Turn	23	20	88.3%	45.9	7.4	D
	Through	99	98	99.3%	33.8	4.6	C
	Right Turn	69	69	99.9%	13.7	3.1	B
	Subtotal	**191**	**188**	**98.2%**	**27.7**	**2.8**	**C**
WB	Left Turn	52	51	97.3%	46.5	5.7	D
	Through	58	54	92.2%	34.1	3.7	C
	Right Turn	3	4	133.3%	23.8	16.2	C
	Subtotal	**113**	**108**	**95.7%**	**39.6**	**2.9**	**D**
Total		**1,055**	**1,058**	**100.3%**	**29.3**	**2.4**	**C**

Intersection 170 **Stanford Ranch Rd/5 Star Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	161	155	96.0%	64.2	7.7	E
	Through	444	447	100.6%	26.0	2.7	C
	Right Turn	58	54	93.6%	10.3	1.3	B
	Subtotal	**663**	**656**	**98.9%**	**33.7**	**2.6**	**C**
SB	Left Turn	29	28	97.6%	56.5	12.7	E
	Through	323	333	103.2%	41.1	5.6	D
	Right Turn	34	34	100.6%	9.9	2.9	A
	Subtotal	**386**	**396**	**102.6%**	**39.6**	**5.3**	**D**
EB	Left Turn	26	23	87.7%	183.3	60.1	F
	Through	28	23	82.9%	188.6	51.6	F
	Right Turn	73	74	100.8%	20.8	6.7	C
	Subtotal	**127**	**120**	**94.2%**	**84.5**	**23.0**	**F**
WB	Left Turn	93	92	99.4%	33.6	3.1	C
	Through	21	21	99.5%	32.1	6.6	C
	Right Turn	11	11	97.3%	19.2	7.5	B
	Subtotal	**125**	**124**	**99.2%**	**32.1**	**3.2**	**C**
Total		**1,301**	**1,295**	**99.5%**	**40.0**	**1.7**	**D**

Intersection 171 **Stanford Ranch Rd-Galleria Blvd/Hwy 65 NB ramp** **Side Street Stop**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	213	208	97.8%	46.0	4.9	E
	Through	439	422	96.2%	13.0	0.8	B
	Right Turn						
	Subtotal	**652**	**631**	**96.7%**	**23.9**	**1.9**	**C**
SB	Left Turn						
	Through	472	481	102.0%	20.2	5.0	C
	Right Turn	93	96	103.7%	18.1	5.8	C
	Subtotal	**565**	**578**	**102.2%**	**19.9**	**5.0**	**C**
EB	Left Turn						
	Through						
	Right Turn	130	125	95.9%	5.7	1.4	A
	Subtotal	**130**	**125**	**95.9%**	**5.7**	**1.4**	**A**
WB	Left Turn						
	Through						
	Right Turn	224	218	97.4%	9.4	0.4	A
	Subtotal	**224**	**218**	**97.4%**	**9.4**	**0.4**	**A**
Total		**1,571**	**1,551**	**98.7%**	**18.9**	**2.4**	**C**

Intersection 172 **Galleria Blvd/Hwy 65 SB Ramps** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	608	580	95.3%	23.2	2.4	C
	Right Turn	154	148	96.4%	21.1	2.7	C
	Subtotal	**762**	**728**	**95.6%**	**22.8**	**2.3**	**C**
SB	Left Turn	147	154	104.6%	47.8	12.2	D
	Through	456	440	96.5%	56.3	6.6	E
	Right Turn						
	Subtotal	**603**	**594**	**98.4%**	**54.0**	**5.2**	**D**
EB	Left Turn						
	Through						
	Right Turn	236	225	95.3%	42.7	23.0	D
	Subtotal	**236**	**225**	**95.3%**	**42.7**	**23.0**	**D**
WB	Left Turn						
	Through	44	45	103.0%	2.1	1.0	A
	Right Turn						
	Subtotal	**44**	**45**	**103.0%**	**2.1**	**1.0**	**A**
Total		**1,645**	**1,592**	**96.8%**	**36.8**	**2.6**	**D**

SimTraffic Post-Processor **Amoruso EIR**
Average Results from 10 Runs **2035 CIP Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 107 **Foothills Blvd/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	160	109	68.2%	137.2	2.9	F
	Right Turn	142	90	63.1%	89.5	4.6	F
	Subtotal	**302**	**199**	**65.8%**	**115.8**	**2.2**	**F**
SB	Left Turn	480	379	78.9%	38.2	1.0	D
	Through	124	106	85.4%	8.6	5.6	A
	Right Turn						
	Subtotal	**604**	**485**	**80.3%**	**31.7**	**1.7**	**C**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	214	122	56.8%	115.3	13.6	F
	Through						
	Right Turn	602	336	55.7%	67.5	13.4	E
	Subtotal	**816**	**457**	**56.0%**	**80.3**	**13.4**	**F**
Total		**1,722**	**1,141**	**66.2%**	**65.7**	**5.1**	**E**

Intersection 110 **Melody Ln/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	64	66	103.1%	15.6	5.2	B
	Subtotal	**64**	**66**	**103.1%**	**15.6**	**5.2**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	577	428	74.1%	8.1	1.6	A
	Right Turn	4	3	65.0%	5.8	5.1	A
	Subtotal	**581**	**430**	**74.1%**	**8.1**	**1.6**	**A**
WB	Left Turn	90	60	66.3%	28.4	5.4	C
	Through	708	453	64.0%	4.9	0.8	A
	Right Turn						
	Subtotal	**798**	**513**	**64.2%**	**7.6**	**0.9**	**A**
Total		**1,443**	**1,009**	**69.9%**	**8.4**	**1.1**	**A**

Intersection 109 **Northridge Dr/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1	0	40.0%	9.9	15.2	A
	Through						
	Right Turn	6	6	100.0%	21.8	10.4	C
	Subtotal	**7**	**6**	**91.4%**	**24.2**	**10.6**	**C**
SB	Left Turn	9	9	102.2%	70.5	19.0	E
	Through						
	Right Turn	6	6	98.3%	15.3	8.2	B
	Subtotal	**15**	**15**	**100.7%**	**47.9**	**9.5**	**D**
EB	Left Turn	4	2	60.0%	53.9	38.4	D
	Through	570	418	73.2%	9.0	5.2	A
	Right Turn	7	5	68.6%	7.0	5.2	A
	Subtotal	**581**	**425**	**73.1%**	**9.3**	**5.2**	**A**
WB	Left Turn	3	2	63.3%	68.9	48.8	E
	Through	687	435	63.3%	4.8	3.5	A
	Right Turn	1	0	20.0%	0.0	0.0	A
	Subtotal	**691**	**437**	**63.3%**	**5.1**	**3.6**	**A**
Total		**1,294**	**884**	**68.3%**	**8.0**	**3.2**	**A**

Intersection 111 **Riverside Ave/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	358	209	58.3%	133.4	5.9	F
	Through	171	122	71.1%	46.3	4.9	D
	Right Turn	69	49	70.4%	17.2	3.5	B
	Subtotal	**598**	**379**	**63.3%**	**90.6**	**5.2**	**F**
SB	Left Turn	80	45	56.4%	271.2	30.8	F
	Through	181	94	51.9%	482.3	41.5	F
	Right Turn	63	30	47.8%	429.7	98.3	F
	Subtotal	**324**	**169**	**52.2%**	**415.8**	**48.4**	**F**
EB	Left Turn	63	44	69.4%	148.4	56.5	F
	Through	276	224	81.2%	30.3	3.4	C
	Right Turn	303	234	77.2%	3.0	0.2	A
	Subtotal	**642**	**502**	**78.2%**	**27.9**	**5.7**	**C**
WB	Left Turn	9	6	66.7%	254.6	91.2	F
	Through	412	301	73.0%	232.5	52.8	F
	Right Turn						
	Subtotal	**421**	**307**	**72.8%**	**232.4**	**52.9**	**F**
Total		**1,985**	**1,357**	**68.3%**	**139.7**	**15.4**	**F**

Intersection 108 **Vernon St/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	4	6	142.5%	76.1	25.0	E
	Through	14	12	84.3%	46.2	13.9	D
	Right Turn	28	29	102.9%	35.5	8.4	D
	Subtotal	**46**	**46**	**100.7%**	**43.1**	**4.0**	**D**
SB	Left Turn	16	12	73.1%	137.7	38.8	F
	Through	17	14	80.0%	128.4	39.2	F
	Right Turn	181	108	59.5%	323.6	83.9	F
	Subtotal	**214**	**133**	**62.1%**	**286.2**	**71.3**	**F**
EB	Left Turn	93	71	76.8%	70.1	12.4	E
	Through	524	398	75.9%	32.0	4.7	C
	Right Turn	6	4	71.7%	33.8	10.4	C
	Subtotal	**623**	**473**	**76.0%**	**37.8**	**6.1**	**D**
WB	Left Turn	23	13	56.1%	82.3	18.5	F
	Through	630	375	59.5%	55.1	18.4	E
	Right Turn	10	7	70.0%	33.5	17.2	C
	Subtotal	**663**	**395**	**59.5%**	**55.6**	**18.0**	**E**
Total		**1,546**	**1,047**	**67.7%**	**75.4**	**6.8**	**E**

Intersection 203 **Riverside Ave/I-80 WB Ramps** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	465	281	60.4%	171.2	21.4	F
	Right Turn	47	37	77.7%	29.4	9.1	C
	Subtotal	**512**	**318**	**62.0%**	**154.8**	**19.1**	**F**
SB	Left Turn						
	Through	249	170	68.3%	11.3	1.7	B
	Right Turn	244	165	67.4%	0.6	0.1	A
	Subtotal	**493**	**335**	**67.8%**	**6.0**	**1.0**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	219	208	94.9%	42.7	10.5	D
	Through						
	Right Turn	117	82	69.7%	161.7	38.1	F
	Subtotal	**336**	**289**	**86.1%**	**75.9**	**13.3**	**E**
Total		**1,341**	**941**	**70.2%**	**77.5**	**7.4**	**E**

Intersection 204 **Riverside Ave/I-80 EB Ramps** **Signal**

SimTraffic Post-Processor **Amoruso EIR**
Average Results from 10 Runs **2035 CIP Plus Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	386	306	79.2%	113.4	28.2	F
	Right Turn	18	14	75.6%	109.0	43.2	F
	Subtotal	**404**	**319**	**79.0%**	**113.1**	**28.6**	**F**
SB	Left Turn	28	23	83.6%	99.9	34.2	F
	Through	392	309	78.9%	20.2	5.7	C
	Right Turn						
	Subtotal	**420**	**333**	**79.2%**	**26.1**	**5.1**	**C**
EB	Left Turn						
	Through	108	106	97.9%	62.6	5.0	E
	Right Turn	34	36	105.3%	26.1	7.6	C
	Subtotal	**142**	**142**	**99.6%**	**53.6**	**5.0**	**D**
WB	Left Turn	29	29	99.3%	46.6	4.7	D
	Through						
	Right Turn	122	103	84.8%	73.3	33.7	E
	Subtotal	**151**	**132**	**87.5%**	**67.3**	**26.5**	**E**
Total		**1,117**	**925**	**82.8%**	**66.0**	**11.1**	**E**

INTERSECTIONS OUTSIDE OF ROSEVILLE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	677	14	52	1006	19	23	5	36	13	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.87		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5070		1770	5071		1770	1616		1770	1723	
Flt Permitted	0.30	1.00		0.36	1.00		0.76	1.00		0.73	1.00	
Satd. Flow (perm)	556	5070		677	5071		1409	1616		1358	1723	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	713	15	57	1093	21	24	5	38	14	1	1
RTOR Reduction (vph)	0	4	0	0	4	0	0	30	0	0	1	0
Lane Group Flow (vph)	2	724	0	57	1110	0	24	13	0	14	1	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.4	13.4		13.4	13.4		6.1	6.1		6.1	6.1	
Effective Green, g (s)	13.4	13.4		13.4	13.4		6.1	6.1		6.1	6.1	
Actuated g/C Ratio	0.45	0.45		0.45	0.45		0.21	0.21		0.21	0.21	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	252	2302		307	2303		291	334		280	356	
v/s Ratio Prot		0.14			c0.22			0.01			0.00	
v/s Ratio Perm	0.00			0.08			c0.02			0.01		
v/c Ratio	0.01	0.31		0.19	0.48		0.08	0.04		0.05	0.00	
Uniform Delay, d1	4.4	5.1		4.8	5.6		9.4	9.4		9.4	9.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		0.3	0.2		0.1	0.0		0.1	0.0	
Delay (s)	4.4	5.2		5.1	5.8		9.6	9.4		9.5	9.3	
Level of Service	A	A		A	A		A	A		A	A	
Approach Delay (s)		5.2			5.8			9.5			9.4	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	29.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	31	549	970	114	409	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	34	603	1066	125	449	2
RTOR Reduction (vph)	0	0	0	86	0	1
Lane Group Flow (vph)	34	603	1066	39	449	1
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.5	22.7	15.2	15.2	16.0	16.0
Effective Green, g (s)	2.5	22.7	15.2	15.2	16.0	16.0
Actuated g/C Ratio	0.05	0.47	0.31	0.31	0.33	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	90	2370	1587	494	581	520
v/s Ratio Prot	0.02	c0.12	c0.21		c0.25	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.38	0.25	0.67	0.08	0.77	0.00
Uniform Delay, d1	22.3	7.9	14.6	11.8	14.7	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1	1.1	0.1	6.3	0.0
Delay (s)	25.0	7.9	15.7	11.9	21.0	11.0
Level of Service	C	A	B	B	C	B
Approach Delay (s)		8.8	15.3		21.0	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	535	424	153	870	209	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	594	471	170	967	232	171
RTOR Reduction (vph)	0	334	0	0	0	92
Lane Group Flow (vph)	594	137	170	967	232	79
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	14.0	14.0	7.6	26.6	11.7	11.7
Effective Green, g (s)	14.0	14.0	7.6	26.6	11.7	11.7
Actuated g/C Ratio	0.29	0.29	0.16	0.55	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1473	458	278	2800	428	383
v/s Ratio Prot	0.12		c0.10	c0.19	c0.13	
v/s Ratio Perm		0.09				0.05
v/c Ratio	0.40	0.30	0.61	0.35	0.54	0.21
Uniform Delay, d1	13.8	13.3	19.0	6.0	16.0	14.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.4	3.9	0.1	1.4	0.3
Delay (s)	14.0	13.7	22.9	6.1	17.4	14.9
Level of Service	B	B	C	A	B	B
Approach Delay (s)	13.9			8.6	16.3	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	6	18	214	1	84	7	1524	342	242	1815	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	
Frt	1.00	0.89		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1655		1770	1586		1770	5085	1583	1770	5084	
Flt Permitted	0.47	1.00		0.95	1.00		0.05	1.00	1.00	0.08	1.00	
Satd. Flow (perm)	866	1655		1770	1586		86	5085	1583	148	5084	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	13	8	23	271	1	106	9	1929	433	306	2297	4
RTOR Reduction (vph)	0	17	0	0	92	0	0	0	129	0	0	0
Lane Group Flow (vph)	13	14	0	271	15	0	9	1929	304	306	2301	0
Turn Type	Perm	NA		Split	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		8	8			2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	8.6	8.6		19.1	19.1		100.3	100.3	100.3	100.3	100.3	
Effective Green, g (s)	8.6	8.6		19.1	19.1		100.3	100.3	100.3	100.3	100.3	
Actuated g/C Ratio	0.06	0.06		0.13	0.13		0.70	0.70	0.70	0.70	0.70	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	52	99		236	211		60	3566	1110	103	3565	
v/s Ratio Prot		0.01		c0.15	0.01			0.38			0.45	
v/s Ratio Perm	c0.02						0.10		0.19	c2.07		
v/c Ratio	0.25	0.14		1.15	0.07		0.15	0.54	0.27	2.97	0.65	
Uniform Delay, d1	64.1	63.7		61.9	54.2		7.1	10.3	7.9	21.4	11.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	0.7		104.5	0.1		1.2	0.2	0.1	912.5	0.4	
Delay (s)	66.6	64.4		166.4	54.3		8.3	10.4	8.0	933.8	12.1	
Level of Service	E	E		F	D		A	B	A	F	B	
Approach Delay (s)		65.0			134.7			10.0			120.3	
Approach LOS		E			F			A			F	

Intersection Summary			
HCM 2000 Control Delay	72.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	2.50		
Actuated Cycle Length (s)	143.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	388	417	149	40	147	169	10	7	11	148	31	14
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	456	491	175	47	173	199	12	8	13	174	36	16

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	1122	419	33	227
Volume Left (vph)	456	47	12	174
Volume Right (vph)	175	199	13	16
Hadj (s)	0.02	-0.23	-0.13	0.14
Departure Headway (s)	5.6	5.6	7.3	6.8
Degree Utilization, x	1.0	0.65	0.07	0.43
Capacity (veh/h)	650	621	424	502
Control Delay (s)	352.9	18.6	10.9	14.9
Approach Delay (s)	352.9	18.6	10.9	14.9
Approach LOS	F	C	B	B

Intersection Summary			
Delay	226.3		
Level of Service	F		
Intersection Capacity Utilization	100.1%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	82	24	16	1245	956	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.23	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	427	3539	3539	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	96	28	19	1465	1125	156
RTOR Reduction (vph)	0	17	0	0	0	59
Lane Group Flow (vph)	96	11	19	1465	1125	97
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	5.0	5.0	24.9	24.9	24.9	24.9
Effective Green, g (s)	5.0	5.0	24.9	24.9	24.9	24.9
Actuated g/C Ratio	0.13	0.13	0.62	0.62	0.62	0.62
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	221	198	266	2208	2208	987
v/s Ratio Prot	c0.05			c0.41	0.32	
v/s Ratio Perm		0.01	0.04			0.06
v/c Ratio	0.43	0.05	0.07	0.66	0.51	0.10
Uniform Delay, d1	16.1	15.4	3.0	4.8	4.1	3.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1	0.1	0.8	0.2	0.0
Delay (s)	17.5	15.5	3.1	5.6	4.3	3.0
Level of Service	B	B	A	A	A	A
Approach Delay (s)	17.1			5.5	4.2	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	39.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	413	176	227	204	171	178	728	388	202	710	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3533	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3533	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	16	439	187	241	217	182	189	774	413	215	755	9
RTOR Reduction (vph)	0	0	134	0	0	108	0	0	266	0	1	0
Lane Group Flow (vph)	16	439	53	241	217	74	189	774	147	215	763	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	1.5	26.4	26.4	13.0	37.9	37.9	11.0	22.3	22.3	11.0	22.3	
Effective Green, g (s)	1.5	26.4	26.4	13.0	37.9	37.9	11.0	22.3	22.3	11.0	22.3	
Actuated g/C Ratio	0.02	0.28	0.28	0.14	0.41	0.41	0.12	0.24	0.24	0.12	0.24	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	28	530	450	248	761	647	210	851	380	210	849	
v/s Ratio Prot	0.01	c0.24		c0.14	0.12		0.11	c0.22		c0.12	0.22	
v/s Ratio Perm			0.03			0.05			0.09			
v/c Ratio	0.57	0.83	0.12	0.97	0.29	0.12	0.90	0.91	0.39	1.02	0.90	
Uniform Delay, d1	45.3	31.0	24.5	39.7	18.3	17.0	40.3	34.2	29.5	40.9	34.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	25.2	10.3	0.1	49.0	0.2	0.1	36.0	13.4	0.7	68.4	12.2	
Delay (s)	70.5	41.3	24.7	88.7	18.5	17.1	76.3	47.6	30.1	109.3	46.4	
Level of Service	E	D	C	F	B	B	E	D	C	F	D	
Approach Delay (s)		37.2			44.5			46.3			60.2	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	442	554	131	345	459	310
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	465	583	138	363	483	326
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1048		1104	465
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1048		1104	465
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			79		0	45
cM capacity (veh/h)			664		185	597

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	465	583	138	363	483	326
Volume Left	0	0	138	0	483	0
Volume Right	0	583	0	0	0	326
cSH	1700	1700	664	1700	185	597
Volume to Capacity	0.27	0.34	0.21	0.21	2.61	0.55
Queue Length 95th (ft)	0	0	19	0	1041	82
Control Delay (s)	0.0	0.0	11.8	0.0	780.2	18.0
Lane LOS			B		F	C
Approach Delay (s)	0.0		3.3		472.9	
Approach LOS					F	

Intersection Summary				
Average Delay	163.0			
Intersection Capacity Utilization	66.0%	ICU Level of Service		C
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	779	140	0	1133	370	460	0	1042	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Lane Util. Factor		0.91	1.00		0.91	1.00	0.95	0.95	0.88			
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1681	1681	2787			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1681	1681	2787			
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	885	159	0	1288	420	523	0	1184	0	0	0
RTOR Reduction (vph)	0	0	124	0	0	289	0	0	832	0	0	0
Lane Group Flow (vph)	0	885	35	0	1288	131	261	262	352	0	0	0
Turn Type		NA	Perm		NA	Perm	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			2			6			8			
Actuated Green, G (s)		15.8	15.8		22.7	22.7	18.4	18.4	18.4			
Effective Green, g (s)		15.8	15.8		22.7	22.7	18.4	18.4	18.4			
Actuated g/C Ratio		0.22	0.22		0.31	0.31	0.25	0.25	0.25			
Clearance Time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Vehicle Extension (s)		1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Lane Grp Cap (vph)		1103	343		1585	493	424	424	704			
v/s Ratio Prot		c0.17			c0.25		0.16	c0.16				
v/s Ratio Perm			0.02			0.08			0.13			
v/c Ratio		0.80	0.10		0.81	0.27	0.62	0.62	0.50			
Uniform Delay, d1		27.0	22.8		23.1	18.8	24.1	24.1	23.3			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		4.1	0.0		3.1	0.1	1.9	1.9	0.2			
Delay (s)		31.1	22.9		26.2	18.9	25.9	26.0	23.5			
Level of Service		C	C		C	B	C	C	C			
Approach Delay (s)		29.8			24.4			24.2			0.0	
Approach LOS		C			C			C			A	

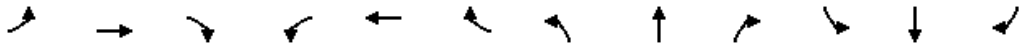
Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	15.9
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↕	↱
Volume (vph)	0	383	317	0	1072	526	0	0	0	539	9	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)		5085	1583		5085	1583				1681	1605	1504
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)		5085	1583		5085	1583				1681	1605	1504
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	430	356	0	1204	591	0	0	0	606	10	228
RTOR Reduction (vph)	0	0	298	0	0	381	0	0	0	0	3	154
Lane Group Flow (vph)	0	430	58	0	1204	210	0	0	0	321	315	51
Turn Type		NA	Perm		NA	Perm				Split	NA	Perm
Protected Phases		2			6					4	4	
Permitted Phases			2			6						4
Actuated Green, G (s)		10.5	10.5		22.9	22.9				16.0	16.0	16.0
Effective Green, g (s)		10.5	10.5		22.9	22.9				16.0	16.0	16.0
Actuated g/C Ratio		0.16	0.16		0.35	0.35				0.25	0.25	0.25
Clearance Time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Vehicle Extension (s)		1.0	1.0		1.0	1.0				1.0	1.0	1.0
Lane Grp Cap (vph)		826	257		1802	561				416	397	372
v/s Ratio Prot		c0.08			c0.24					0.19	c0.20	
v/s Ratio Perm			0.04			0.13						0.03
v/c Ratio		0.52	0.23		0.67	0.37				0.77	0.79	0.14
Uniform Delay, d1		24.7	23.5		17.6	15.5				22.6	22.8	18.9
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.3	0.2		0.7	0.2				7.9	9.8	0.1
Delay (s)		25.0	23.7		18.4	15.7				30.5	32.5	19.0
Level of Service		C	C		B	B				C	C	B
Approach Delay (s)		24.4			17.5			0.0			28.5	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	15.2
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	41	236	70	30	36	350	1694	168	137	603	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1625		1681	1734	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1625		1681	1734	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	46	262	78	33	40	389	1882	187	152	670	23
RTOR Reduction (vph)	0	229	0	0	0	36	0	0	114	0	0	18
Lane Group Flow (vph)	30	79	0	55	56	4	389	1882	73	152	670	5
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	9.0	9.0		6.5	6.5	6.5	20.3	28.0	28.0	8.6	16.3	16.3
Effective Green, g (s)	9.0	9.0		6.5	6.5	6.5	20.3	28.0	28.0	8.6	16.3	16.3
Actuated g/C Ratio	0.12	0.12		0.09	0.09	0.09	0.28	0.39	0.39	0.12	0.23	0.23
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	220	202		151	156	142	498	1974	614	409	1149	357
v/s Ratio Prot	0.02	c0.05		c0.03	0.03		c0.22	c0.37		0.04	0.13	
v/s Ratio Perm						0.00			0.05			0.00
v/c Ratio	0.14	0.39		0.36	0.36	0.03	0.78	0.95	0.12	0.37	0.58	0.01
Uniform Delay, d1	28.1	29.0		30.9	30.8	29.9	23.9	21.4	14.1	29.3	24.9	21.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.2		1.5	1.4	0.1	7.8	11.2	0.1	0.6	0.8	0.0
Delay (s)	28.4	30.3		32.4	32.3	30.0	31.6	32.6	14.2	29.8	25.6	21.7
Level of Service	C	C		C	C	C	C	C	B	C	C	C
Approach Delay (s)		30.1			31.7			31.1			26.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	1208	22	186	300	20	387	731	725	126	526	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	1342	24	207	333	22	430	812	806	140	584	40
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	23	1342	24	207	333	22	430	812	806	140	584	40
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	3.2	39.1	101.5	10.2	46.1	101.5	13.0	23.1	101.5	9.1	19.2	101.5
Effective Green, g (s)	3.2	39.1	101.5	10.2	46.1	101.5	13.0	23.1	101.5	9.1	19.2	101.5
Actuated g/C Ratio	0.03	0.39	1.00	0.10	0.45	1.00	0.13	0.23	1.00	0.09	0.19	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	55	1363	1583	344	1607	1583	439	805	1583	307	669	1583
v/s Ratio Prot	0.01	c0.38		0.06	0.09		c0.13	c0.23		0.04	0.17	
v/s Ratio Perm			0.02			0.01			c0.51			0.03
v/c Ratio	0.42	0.98	0.02	0.60	0.21	0.01	0.98	1.01	0.51	0.46	0.87	0.03
Uniform Delay, d1	48.2	30.9	0.0	43.7	16.7	0.0	44.1	39.2	0.0	43.9	40.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	20.6	0.0	3.0	0.1	0.0	37.1	33.9	1.2	1.1	12.1	0.0
Delay (s)	53.3	51.5	0.0	46.7	16.8	0.0	81.2	73.1	1.2	44.9	52.1	0.0
Level of Service	D	D	A	D	B	A	F	E	A	D	D	A
Approach Delay (s)		50.6			27.1			46.5			48.0	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	101.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	330	34	765	481	132	8	265	270	89	1119	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	138	367	38	850	534	147	9	294	300	99	1243	42
RTOR Reduction (vph)	0	0	32	0	0	95	0	0	204	0	0	25
Lane Group Flow (vph)	138	367	6	850	534	52	9	294	96	99	1243	17
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.0	19.3	19.3	34.3	44.6	44.6	1.1	40.6	40.6	10.8	50.3	50.3
Effective Green, g (s)	9.0	19.3	19.3	34.3	44.6	44.6	1.1	40.6	40.6	10.8	50.3	50.3
Actuated g/C Ratio	0.07	0.15	0.15	0.27	0.35	0.35	0.01	0.32	0.32	0.09	0.40	0.40
Clearance Time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	244	539	241	930	1247	558	15	1135	508	151	1407	629
v/s Ratio Prot	0.04	c0.10		c0.25	0.15		0.01	0.08		c0.06	c0.35	
v/s Ratio Perm			0.00			0.03			0.06			0.01
v/c Ratio	0.57	0.68	0.02	0.91	0.43	0.09	0.60	0.26	0.19	0.66	0.88	0.03
Uniform Delay, d1	56.9	50.7	45.6	44.7	31.2	27.4	62.5	31.8	31.1	56.0	35.4	23.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	3.5	0.0	12.9	0.2	0.1	36.3	0.1	0.2	7.6	6.9	0.0
Delay (s)	58.6	54.2	45.6	57.6	31.5	27.5	98.7	31.9	31.2	63.6	42.3	23.2
Level of Service	E	D	D	E	C	C	F	C	C	E	D	C
Approach Delay (s)		54.7			45.6			32.6			43.2	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	126.5	Sum of lost time (s)	21.5
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	638	15	9	1227	345	25	1	10	86	4	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3427		1787	3438	1479	1787	1623			1695	1470
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3427		1787	3438	1479	1787	1623			1695	1470
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	120	672	16	9	1292	363	26	1	11	91	4	325
RTOR Reduction (vph)	0	1	0	0	0	201	0	10	0	0	0	0
Lane Group Flow (vph)	120	687	0	9	1292	162	26	2	0	0	95	325
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	6.1	41.2		0.5	35.6	35.6	6.4	6.4			18.3	18.3
Effective Green, g (s)	7.1	43.2		1.5	37.6	37.6	7.4	7.4			19.3	19.3
Actuated g/C Ratio	0.08	0.51		0.02	0.45	0.45	0.09	0.09			0.23	0.23
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	145	1760		31	1537	661	157	142			388	337
v/s Ratio Prot	c0.07	0.20		0.01	c0.38		c0.01	0.00			0.06	
v/s Ratio Perm						0.11						c0.22
v/c Ratio	0.83	0.39		0.29	0.84	0.25	0.17	0.01			0.24	0.96
Uniform Delay, d1	37.9	12.4		40.8	20.6	14.4	35.5	35.0			26.5	32.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	29.3	0.1		1.9	4.3	0.2	0.2	0.0			0.3	39.3
Delay (s)	67.1	12.6		42.7	24.9	14.6	35.7	35.0			26.8	71.3
Level of Service	E	B		D	C	B	D	D			C	E
Approach Delay (s)		20.7			22.8			35.5			61.2	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	84.1	Sum of lost time (s)	12.7
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	735	270	245	1513	111	661
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1565	1770	3539	1770	1573
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1565	1770	3539	1770	1573
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	774	284	258	1593	117	696
RTOR Reduction (vph)	0	134	0	0	0	11
Lane Group Flow (vph)	774	150	258	1593	117	685
Confl. Peds. (#/hr)		5				5
Turn Type	NA	pm+ov	Prot	NA	Prot	pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	20.4	29.6	16.4	40.8	9.2	25.6
Effective Green, g (s)	22.4	31.6	17.4	42.8	10.2	27.6
Actuated g/C Ratio	0.37	0.53	0.29	0.71	0.17	0.46
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1321	902	513	2524	300	802
v/s Ratio Prot	0.22	0.03	0.15	c0.45	0.07	c0.25
v/s Ratio Perm		0.07				0.19
v/c Ratio	0.59	0.17	0.50	0.63	0.39	0.85
Uniform Delay, d1	15.1	7.4	17.7	4.5	22.1	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	0.3	1.2	0.3	8.5
Delay (s)	15.7	7.4	18.0	5.7	22.4	22.9
Level of Service	B	A	B	A	C	C
Approach Delay (s)	13.5			7.4	22.9	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	75	693	1043	484	312	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1510	1736	1534
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1510	1736	1534
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	729	1098	509	328	159
RTOR Reduction (vph)	0	0	0	242	0	13
Lane Group Flow (vph)	79	729	1098	267	328	146
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	3.3	30.0	34.7	34.7	17.6	20.9
Effective Green, g (s)	4.3	32.0	36.7	36.7	20.6	26.9
Actuated g/C Ratio	0.06	0.46	0.53	0.53	0.29	0.38
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	106	1589	1822	792	511	590
v/s Ratio Prot	c0.05	0.21	c0.32		c0.19	0.02
v/s Ratio Perm				0.18		0.07
v/c Ratio	0.75	0.46	0.60	0.34	0.64	0.25
Uniform Delay, d1	32.3	13.0	11.5	9.6	21.4	14.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.7	0.2	0.6	0.3	2.1	0.1
Delay (s)	54.0	13.2	12.1	9.8	23.5	14.7
Level of Service	D	B	B	A	C	B
Approach Delay (s)		17.2	11.4		20.6	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	9.3
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	1055	111	742	1391	254	165	876	434	373	828	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	3.0	3.7	3.7	3.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	209	1111	117	781	1464	267	174	922	457	393	872	49
RTOR Reduction (vph)	0	0	86	0	0	136	0	0	281	0	0	34
Lane Group Flow (vph)	209	1111	31	781	1464	131	174	922	177	393	872	15
Heavy Vehicles (%)	2%	4%	2%	2%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.4	33.0	33.0	28.0	49.6	49.6	8.9	30.0	30.0	15.0	36.1	36.1
Effective Green, g (s)	12.4	36.0	34.0	30.0	51.9	51.9	10.9	32.0	32.0	16.0	38.1	38.1
Actuated g/C Ratio	0.10	0.28	0.27	0.23	0.41	0.41	0.09	0.25	0.25	0.12	0.30	0.30
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	4.7	4.7	3.0	4.8	4.8	3.0	4.8	4.8	3.0	4.7	4.7
Lane Grp Cap (vph)	332	1402	420	804	2022	629	292	1271	395	429	1513	471
v/s Ratio Prot	0.06	c0.22		c0.23	0.29		0.05	c0.18		c0.11	0.17	
v/s Ratio Perm			0.02			0.08			0.11			0.01
v/c Ratio	0.63	0.79	0.07	0.97	0.72	0.21	0.60	0.73	0.45	0.92	0.58	0.03
Uniform Delay, d1	55.6	42.5	35.2	48.6	32.0	24.7	56.4	44.0	40.5	55.3	38.1	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	3.6	0.1	24.8	1.6	0.3	3.3	2.5	1.6	24.0	0.8	0.1
Delay (s)	59.3	46.1	35.3	73.3	33.6	25.0	59.7	46.5	42.1	79.3	38.9	31.9
Level of Service	E	D	D	E	C	C	E	D	D	E	D	C
Approach Delay (s)		47.2			45.0			46.7			50.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	1413	2848	420	340	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1533	1770	1557
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1533	1770	1557
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	1487	2998	442	358	25
RTOR Reduction (vph)	0	0	0	101	0	19
Lane Group Flow (vph)	52	1487	2998	341	358	6
Confl. Peds. (#/hr)				5		5
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.6	67.3	58.7	58.7	23.9	23.9
Effective Green, g (s)	5.6	70.3	61.7	61.7	24.9	24.9
Actuated g/C Ratio	0.05	0.69	0.60	0.60	0.24	0.24
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	97	3501	3072	926	431	379
v/s Ratio Prot	c0.03	0.29	c0.59		c0.20	
v/s Ratio Perm				0.22		0.00
v/c Ratio	0.54	0.42	0.98	0.37	0.83	0.02
Uniform Delay, d1	47.0	7.0	19.5	10.3	36.6	29.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1	11.2	0.4	12.2	0.0
Delay (s)	49.8	7.1	30.7	10.6	48.8	29.3
Level of Service	D	A	C	B	D	C
Approach Delay (s)		8.6	28.1		47.6	
Approach LOS		A	C		D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	102.1	Sum of lost time (s)	9.9
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰	↑↑↑	↰	↱
Volume (vph)	1352	22	207	2666	12	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1423	23	218	2806	13	135
RTOR Reduction (vph)	0	12	0	0	0	111
Lane Group Flow (vph)	1423	11	218	2806	13	24
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	30.2	30.2	11.4	45.6	10.8	10.8
Effective Green, g (s)	33.2	33.2	12.4	48.6	11.8	11.8
Actuated g/C Ratio	0.49	0.49	0.18	0.72	0.18	0.18
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	2508	780	326	3672	310	277
v/s Ratio Prot	0.28		0.12	c0.55	0.01	
v/s Ratio Perm		0.01				c0.01
v/c Ratio	0.57	0.01	0.67	0.76	0.04	0.09
Uniform Delay, d1	12.0	8.7	25.5	5.8	23.1	23.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	4.0	1.1	0.0	0.0
Delay (s)	12.4	8.7	29.5	6.9	23.1	23.3
Level of Service	B	A	C	A	C	C
Approach Delay (s)	12.3			8.5	23.3	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	9.9
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	371	696	38	611	1476	327	26	990	355	147	844	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1551	3433	5085	1553	3433	3539	1556	3433	3539	1556
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1551	3433	5085	1553	3433	3539	1556	3433	3539	1556
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	391	733	40	643	1554	344	27	1042	374	155	888	478
RTOR Reduction (vph)	0	0	33	0	0	144	0	0	237	0	0	271
Lane Group Flow (vph)	391	733	7	643	1554	200	27	1042	137	155	888	207
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.7	19.7	19.7	28.0	34.0	34.0	5.4	34.6	34.6	9.0	38.2	38.2
Effective Green, g (s)	14.7	22.7	20.7	29.0	37.0	35.0	6.4	38.0	35.6	10.0	41.6	39.2
Actuated g/C Ratio	0.13	0.20	0.19	0.26	0.33	0.31	0.06	0.34	0.32	0.09	0.37	0.35
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	453	1037	288	894	1690	488	197	1208	497	308	1322	548
v/s Ratio Prot	c0.11	0.14		0.19	c0.31		0.01	c0.29		0.05	c0.25	
v/s Ratio Perm			0.00			0.13			0.09			0.13
v/c Ratio	0.86	0.71	0.03	0.72	0.92	0.41	0.14	0.86	0.27	0.50	0.67	0.38
Uniform Delay, d1	47.3	41.2	37.1	37.4	35.7	30.0	49.8	34.2	28.2	48.3	29.1	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.1	2.4	0.1	2.3	8.6	0.8	0.1	7.1	0.6	0.5	1.7	0.8
Delay (s)	62.4	43.6	37.1	39.8	44.3	30.8	49.9	41.3	28.8	48.8	30.8	27.8
Level of Service	E	D	D	D	D	C	D	D	C	D	C	C
Approach Delay (s)		49.7			41.4			38.2			31.7	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	111.3	Sum of lost time (s)	11.6
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	36	2461	0	3861	832	105	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6		2.6	2.6	3.9	3.9
Lane Util. Factor	1.00	0.86		0.86	1.00	0.97	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	6408		6408	1583	3433	1583
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	6408		6408	1583	3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	38	2591	0	4064	876	111	23
RTOR Reduction (vph)	0	0	0	0	133	0	21
Lane Group Flow (vph)	38	2591	0	4064	744	111	2
Turn Type	Prot	NA	Perm	NA	Perm	Prot	Perm
Protected Phases	7	4		8		6	
Permitted Phases			8		8		6
Actuated Green, G (s)	6.7	125.5		114.8	114.8	13.6	13.6
Effective Green, g (s)	7.7	128.9		118.2	118.2	14.6	14.6
Actuated g/C Ratio	0.05	0.86		0.79	0.79	0.10	0.10
Clearance Time (s)	4.0	6.0		6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.8		4.8	4.8	2.0	2.0
Lane Grp Cap (vph)	90	5506		5049	1247	334	154
v/s Ratio Prot	0.02	c0.40		c0.63		c0.03	
v/s Ratio Perm					0.47		0.00
v/c Ratio	0.42	0.47		0.80	0.60	0.33	0.01
Uniform Delay, d1	69.0	2.5		9.2	6.4	63.2	61.2
Progression Factor	0.99	0.30		0.59	0.83	1.00	1.00
Incremental Delay, d2	0.9	0.2		0.1	0.1	0.2	0.0
Delay (s)	69.5	1.0		5.5	5.4	63.4	61.2
Level of Service	E	A		A	A	E	E
Approach Delay (s)		2.0		5.5		63.0	
Approach LOS		A		A		E	

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

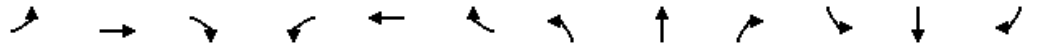
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	5	1188	2379	283	151	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1251	2504	298	159	4
RTOR Reduction (vph)	0	0	0	90	0	3
Lane Group Flow (vph)	5	1251	2504	208	159	1
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.0	48.4	43.4	43.4	13.8	13.8
Effective Green, g (s)	2.0	51.4	46.4	46.4	14.8	14.8
Actuated g/C Ratio	0.03	0.71	0.64	0.64	0.20	0.20
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	49	3620	3267	1017	362	324
v/s Ratio Prot	0.00	c0.25	c0.49		c0.09	
v/s Ratio Perm				0.13		0.00
v/c Ratio	0.10	0.35	0.77	0.20	0.44	0.00
Uniform Delay, d1	34.2	4.0	9.1	5.3	25.1	22.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	1.2	0.1	0.3	0.0
Delay (s)	34.6	4.1	10.3	5.4	25.4	22.8
Level of Service	C	A	B	A	C	C
Approach Delay (s)		4.2	9.8		25.3	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	1697	30	26	2875	55	290	141	30	225	24	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.6	3.6	3.6	3.9	3.9	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.99	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1681	1739	1583	1681	1553	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.99	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1681	1739	1583	1681	1553	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	96	1786	32	27	3026	58	305	148	32	237	25	179
RTOR Reduction (vph)	0	0	13	0	0	24	0	0	28	0	68	0
Lane Group Flow (vph)	96	1786	19	27	3026	34	223	230	4	213	160	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	8.0	87.5	87.5	4.2	83.7	83.7	18.9	18.9	18.9	19.9	19.9	
Effective Green, g (s)	9.0	90.5	90.5	5.2	86.7	86.7	19.9	19.9	19.9	20.9	20.9	
Actuated g/C Ratio	0.06	0.60	0.60	0.03	0.58	0.58	0.13	0.13	0.13	0.14	0.14	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.6	4.6	4.6	4.9	4.9	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	4.5	4.5	4.5	3.1	3.1	
Lane Grp Cap (vph)	106	3067	955	61	2939	914	223	230	210	234	216	
v/s Ratio Prot	c0.05	0.35		0.02	c0.60		c0.13	0.13		c0.13	0.10	
v/s Ratio Perm			0.01			0.02			0.00			
v/c Ratio	0.91	0.58	0.02	0.44	1.03	0.04	1.00	1.00	0.02	0.91	0.74	
Uniform Delay, d1	70.1	18.2	11.9	71.0	31.6	13.6	65.0	65.0	56.6	63.6	62.0	
Progression Factor	1.00	1.00	1.00	1.34	0.35	0.09	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	57.0	0.5	0.0	0.9	20.3	0.0	60.3	59.3	0.1	35.6	12.9	
Delay (s)	127.1	18.7	12.0	95.8	31.5	1.3	125.3	124.4	56.6	99.3	74.8	
Level of Service	F	B	B	F	C	A	F	F	E	F	E	
Approach Delay (s)		24.0			31.5			120.3			86.6	
Approach LOS		C			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	40.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	99.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	387	1854	325	259	3054	215	819	779	205	497	815	820
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6	2.6	3.0	2.6	2.6	3.0	2.6	3.0	3.0	1.9	1.9
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.94	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	4990	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	4990	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	407	1952	342	273	3215	226	862	820	216	523	858	863
RTOR Reduction (vph)	0	0	162	0	0	71	0	0	0	0	0	129
Lane Group Flow (vph)	407	1952	180	273	3215	155	862	820	216	523	858	734
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			2
Actuated Green, G (s)	14.0	54.0	54.0	17.0	57.0	57.0	18.0	34.9	150.0	24.1	41.7	41.7
Effective Green, g (s)	15.0	57.4	57.4	18.0	60.4	60.4	19.0	38.3	150.0	25.1	45.1	45.1
Actuated g/C Ratio	0.10	0.38	0.38	0.12	0.40	0.40	0.13	0.26	1.00	0.17	0.30	0.30
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.4		2.0	6.0	6.0
Lane Grp Cap (vph)	343	2452	605	411	2580	637	632	903	1583	574	1528	475
v/s Ratio Prot	c0.12	0.30		0.08	c0.50		c0.17	0.23		0.15	0.17	
v/s Ratio Perm			0.11			0.10			0.14			c0.46
v/c Ratio	1.19	0.80	0.30	0.66	1.25	0.24	1.36	0.91	0.14	0.91	0.56	1.55
Uniform Delay, d1	67.5	41.1	32.2	63.1	44.8	29.7	65.5	54.1	0.0	61.4	44.1	52.5
Progression Factor	0.81	0.76	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	107.5	2.0	0.6	3.1	114.2	0.9	173.8	12.9	0.2	18.4	1.0	256.0
Delay (s)	162.2	33.1	32.4	66.2	159.0	30.6	239.3	67.0	0.2	79.8	45.1	308.4
Level of Service	F	C	C	E	F	C	F	E	A	E	D	F
Approach Delay (s)		52.5			144.4			137.7			154.5	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	121.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	120.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	1534	246	776	2745	258	69	248	419	267	189	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	3.0	3.0	3.0	2.7	4.7	3.0	2.7	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	98	1615	259	817	2889	272	73	261	441	281	199	45
RTOR Reduction (vph)	0	0	228	0	0	65	0	0	317	0	0	17
Lane Group Flow (vph)	98	1615	31	817	2889	207	73	261	124	281	199	28
Turn Type	Prot	NA	custom	Prot	NA	custom	Prot	NA	Perm	Prot	NA	custom
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			6			4			2			8
Actuated Green, G (s)	10.3	63.6	15.1	37.5	90.8	63.6	14.1	17.1	17.1	12.1	15.1	90.8
Effective Green, g (s)	11.3	66.6	18.1	38.5	93.8	66.6	15.1	20.1	18.1	13.1	18.1	93.8
Actuated g/C Ratio	0.08	0.44	0.12	0.26	0.63	0.44	0.10	0.13	0.12	0.09	0.12	0.63
Clearance Time (s)	4.0	6.0	5.7	4.0	6.0	6.0	4.0	5.7	5.7	4.0	5.7	6.0
Vehicle Extension (s)	2.0	5.6	3.8	2.0	5.6	5.6	2.0	3.8	3.8	2.0	3.8	5.6
Lane Grp Cap (vph)	258	2257	191	881	3179	702	345	474	191	299	427	989
v/s Ratio Prot	0.03	0.32		c0.24	c0.57		0.02	0.07		c0.08	0.06	
v/s Ratio Perm			0.02			0.13			c0.08			0.02
v/c Ratio	0.38	0.72	0.16	0.93	0.91	0.29	0.21	0.55	0.65	0.94	0.47	0.03
Uniform Delay, d1	66.0	34.0	59.2	54.4	24.4	26.7	62.0	60.7	62.9	68.1	61.4	10.7
Progression Factor	0.92	0.64	2.03	1.11	1.14	1.41	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.2	0.4	9.2	2.8	0.3	0.1	1.6	7.9	35.5	1.0	0.1
Delay (s)	61.0	23.0	120.8	69.6	30.5	37.8	62.1	62.4	70.8	103.6	62.5	10.8
Level of Service	E	C	F	E	C	D	E	E	E	F	E	B
Approach Delay (s)		37.7			39.0			67.2			80.1	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	379	730	527	538	778	60	710	1205	160	210	1496	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3496		3433	3539	1549	3433	5085	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3496		3433	3539	1549	3433	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	399	768	555	566	819	63	747	1268	168	221	1575	217
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	70	0	0	81
Lane Group Flow (vph)	399	768	555	566	878	0	747	1268	98	221	1575	136
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot	NA	Free	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	17.0	30.4	150.0	23.0	36.8		31.0	66.2	66.2	11.0	46.6	46.6
Effective Green, g (s)	18.0	31.9	150.0	24.0	38.3		32.0	67.7	67.2	12.0	48.1	47.6
Actuated g/C Ratio	0.12	0.21	1.00	0.16	0.26		0.21	0.45	0.45	0.08	0.32	0.32
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	411	752	1561	549	892		732	1597	693	274	1630	491
v/s Ratio Prot	0.12	c0.22		0.16	c0.25		c0.22	0.36		0.06	c0.31	
v/s Ratio Perm			0.36						0.06			0.09
v/c Ratio	0.97	1.02	0.36	1.03	0.98		1.02	0.79	0.14	0.81	0.97	0.28
Uniform Delay, d1	65.7	59.0	0.0	63.0	55.6		59.0	35.2	24.4	67.9	50.2	38.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.63	0.58	1.00	1.00	1.00
Incremental Delay, d2	36.5	38.3	0.6	46.6	26.2		33.9	3.1	0.3	15.0	15.0	0.4
Delay (s)	102.2	97.3	0.6	109.6	81.8		90.9	25.1	14.6	82.8	65.2	38.7
Level of Service	F	F	A	F	F		F	C	B	F	E	D
Approach Delay (s)		67.3			92.6			46.8			64.3	
Approach LOS		E			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	65.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	839	2360	629	559	1888	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	6.0	5.3	5.3	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	1863
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	856	2408	642	570	1927	490
RTOR Reduction (vph)	0	4	0	241	0	0
Lane Group Flow (vph)	856	2404	642	329	1927	490
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	21.7	79.4	24.0	24.0	57.7	87.0
Effective Green, g (s)	21.7	79.4	24.0	24.0	57.7	87.0
Actuated g/C Ratio	0.18	0.66	0.20	0.20	0.48	0.72
Clearance Time (s)	5.3	6.0	5.3	5.3	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	620	1126	707	316	1650	1350
v/s Ratio Prot	0.25	c1.03	0.18		0.56	0.26
v/s Ratio Perm		0.49		c0.21		
v/c Ratio	1.38	2.13	0.91	1.04	1.17	0.36
Uniform Delay, d1	49.1	20.3	46.9	48.0	31.1	6.2
Progression Factor	1.22	1.60	1.00	1.00	1.00	1.00
Incremental Delay, d2	172.2	510.9	15.4	61.9	82.5	0.2
Delay (s)	232.4	543.3	62.3	109.9	113.6	6.3
Level of Service	F	F	E	F	F	A
Approach Delay (s)	461.8		84.7			91.9
Approach LOS	F		F			F

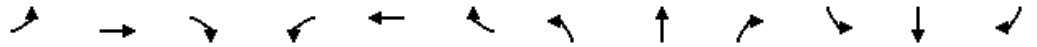
Intersection Summary			
HCM 2000 Control Delay	265.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	172.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2267	17	351	2778	0	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0	5.3		6.0
Lane Util. Factor	0.91		0.97	0.91		1.00
Frt	1.00		1.00	1.00		0.86
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5080		3433	5085		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5080		3433	5085		1611
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	2313	17	358	2835	0	258
RTOR Reduction (vph)	1	0	0	0	0	1
Lane Group Flow (vph)	2329	0	358	2835	0	257
Turn Type	NA		Prot	NA		Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	33.2		13.5	60.0		13.5
Effective Green, g (s)	33.2		13.5	60.0		13.5
Actuated g/C Ratio	0.55		0.22	1.00		0.22
Clearance Time (s)	7.3		6.0	5.3		6.0
Vehicle Extension (s)	3.5		2.0	3.5		2.0
Lane Grp Cap (vph)	2810		772	5085		362
v/s Ratio Prot	c0.46		0.10	c0.56		0.16
v/s Ratio Perm						
v/c Ratio	0.83		0.46	0.56		0.71
Uniform Delay, d1	11.1		20.1	0.0		21.4
Progression Factor	1.00		1.14	1.00		1.00
Incremental Delay, d2	3.0		0.0	0.0		5.4
Delay (s)	14.0		23.0	0.0		26.8
Level of Service	B		C	A		C
Approach Delay (s)	14.0			2.6	26.8	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	2238	26	11	2697	3	3	0	23	35	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (prot)	1770	3533		1770	3539			1631			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97			0.74	1.00
Satd. Flow (perm)	1770	3533		1770	3539			1590			1379	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	16	2284	27	11	2752	3	3	0	23	36	0	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	24	0	0	0	22
Lane Group Flow (vph)	16	2311	0	11	2755	0	0	2	0	0	36	2
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			2	
Permitted Phases							2			2		2
Actuated Green, G (s)	2.6	75.5		1.3	74.2			8.2			8.2	8.2
Effective Green, g (s)	2.6	75.5		1.3	74.2			8.2			8.2	8.2
Actuated g/C Ratio	0.03	0.77		0.01	0.75			0.08			0.08	0.08
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.9			2.0			2.0	2.0
Lane Grp Cap (vph)	46	2713		23	2671			132			115	132
v/s Ratio Prot	c0.01	0.65		0.01	c0.78							
v/s Ratio Perm								0.00			c0.03	0.00
v/c Ratio	0.35	0.85		0.48	1.03			0.02			0.31	0.02
Uniform Delay, d1	47.0	7.6		48.2	12.0			41.3			42.4	41.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.7	3.6		5.6	26.1			0.0			0.6	0.0
Delay (s)	48.7	11.3		53.8	38.2			41.4			43.0	41.4
Level of Service	D	B		D	D			D			D	D
Approach Delay (s)		11.5			38.2			41.4			42.3	
Approach LOS		B			D			D			D	

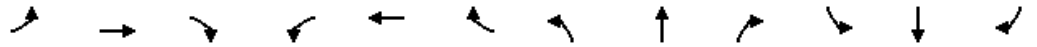
Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	98.3	Sum of lost time (s)	13.3
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	1098	11	138	1194	10	10	11	39	14	257	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		1.00	1.00
Satd. Flow (prot)	1770	3533		1770	3534			1819	1551		1858	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00		1.00	1.00
Satd. Flow (perm)	1770	3533		1770	3534			1819	1551		1858	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1156	12	145	1257	11	11	12	41	15	271	244
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	38	0	0	200
Lane Group Flow (vph)	57	1167	0	145	1268	0	0	23	3	0	286	44
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	5.3	41.1		10.8	46.6			5.5	5.5		15.3	15.3
Effective Green, g (s)	6.3	43.1		11.8	48.6			6.5	6.5		16.3	16.3
Actuated g/C Ratio	0.07	0.48		0.13	0.54			0.07	0.07		0.18	0.18
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	123	1691		232	1908			131	112		336	286
v/s Ratio Prot	0.03	0.33		c0.08	c0.36			c0.01			c0.15	
v/s Ratio Perm									0.00			0.03
v/c Ratio	0.46	0.69		0.62	0.66			0.18	0.03		0.85	0.15
Uniform Delay, d1	40.2	18.3		37.0	14.8			39.2	38.8		35.7	31.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	2.3		3.7	1.1			0.2	0.0		17.7	0.1
Delay (s)	41.2	20.6		40.8	16.0			39.5	38.8		53.4	31.1
Level of Service	D	C		D	B			D	D		D	C
Approach Delay (s)		21.6			18.5			39.1			43.1	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	1600	133	276	1516	4	21	2	442	7	5	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (prot)	1762	3603		1711	3538			1781	1583		1810	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (perm)	1762	3603		1711	3538			1781	1583		1810	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	1684	140	291	1596	4	22	2	465	7	5	8
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	53	0	0	8
Lane Group Flow (vph)	54	1819	0	291	1600	0	0	24	412	0	12	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	6.5	66.2		27.2	88.6			5.6	32.8		1.6	1.6
Effective Green, g (s)	7.5	68.7		28.2	91.1			7.1	35.8		3.1	3.1
Actuated g/C Ratio	0.06	0.57		0.23	0.76			0.06	0.30		0.03	0.03
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	110	2062		402	2685			105	505		46	38
v/s Ratio Prot	0.03	c0.50		0.17	0.45			0.01	c0.19		c0.01	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.49	0.88		0.72	0.60			0.23	0.82		0.26	0.01
Uniform Delay, d1	54.4	22.2		42.3	6.4			53.8	39.0		57.3	56.9
Progression Factor	1.00	1.00		1.17	0.71			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	5.0		4.4	0.8			0.4	9.3		1.1	0.0
Delay (s)	55.7	27.1		53.9	5.3			54.2	48.3		58.4	57.0
Level of Service	E	C		D	A			D	D		E	E
Approach Delay (s)		27.9			12.8			48.6			57.8	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	1093	0	15	1385	13	12	0	5	31	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.8		2.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3534			1730			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.75	1.00
Satd. Flow (perm)	1770	3539		1770	3534			1460			1389	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	1151	0	16	1458	14	13	0	5	33	0	26
RTOR Reduction (vph)	0	0	0	0	0	0	0	16	0	0	0	24
Lane Group Flow (vph)	29	1151	0	16	1472	0	0	2	0	0	33	2
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	2.1	69.7		0.8	68.4			7.2			7.2	7.2
Effective Green, g (s)	3.1	72.2		1.8	70.9			8.2			8.2	8.2
Actuated g/C Ratio	0.03	0.80		0.02	0.79			0.09			0.09	0.09
Clearance Time (s)	3.0	5.3		3.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	60	2839		35	2784			133			126	144
v/s Ratio Prot	c0.02	0.33		0.01	c0.42							
v/s Ratio Perm								0.00			c0.02	0.00
v/c Ratio	0.48	0.41		0.46	0.53			0.01			0.26	0.02
Uniform Delay, d1	42.7	2.6		43.6	3.5			37.2			38.1	37.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	2.2	0.4		3.4	0.7			0.0			0.8	0.0
Delay (s)	44.9	3.0		47.0	4.2			37.2			38.9	37.3
Level of Service	D	A		D	A			D			D	D
Approach Delay (s)		4.1			4.7			37.2			38.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.8
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	248	1090	1182	37	1474	136	1406	674	270	310	715	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	4.0	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4916	2787	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4916	2787	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	253	1112	1206	38	1504	139	1435	688	276	316	730	254
RTOR Reduction (vph)	0	0	0	0	0	67	0	0	103	0	0	135
Lane Group Flow (vph)	253	1112	1206	38	1504	72	1435	688	173	316	730	119
Parking (#/hr)		0										
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			2			6
Actuated Green, G (s)	7.6	48.7	120.0	3.0	43.7	43.7	33.0	34.4	34.4	15.3	16.7	16.7
Effective Green, g (s)	7.6	48.7	120.0	3.0	43.7	43.7	33.0	34.4	34.4	15.3	16.7	16.7
Actuated g/C Ratio	0.06	0.41	1.00	0.02	0.36	0.36	0.28	0.29	0.29	0.13	0.14	0.14
Clearance Time (s)	4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	217	1995	2787	85	1288	576	944	1014	453	437	707	220
v/s Ratio Prot	c0.07	0.23		0.01	c0.42		c0.42	0.19		0.09	c0.14	
v/s Ratio Perm			c0.43			0.05			0.11			0.08
v/c Ratio	1.17	0.56	0.43	0.45	1.17	0.13	1.52	0.68	0.38	0.72	1.03	0.54
Uniform Delay, d1	56.2	27.4	0.0	57.7	38.1	25.4	43.5	37.9	34.3	50.3	51.6	48.1
Progression Factor	0.91	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	99.7	0.2	0.3	3.7	84.2	0.4	239.5	1.8	0.5	5.8	42.5	2.7
Delay (s)	150.9	25.4	0.3	61.4	122.3	25.9	283.0	39.7	34.8	56.2	94.1	50.8
Level of Service	F	C	A	E	F	C	F	D	C	E	F	D
Approach Delay (s)		26.0			113.0			184.7			76.4	
Approach LOS		C			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	100.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	117.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	597	404	739	214	788	625
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	0.98	1.00		0.95	1.00
Satd. Flow (prot)	1610	3324	3420		3433	1583
Flt Permitted	0.95	0.98	1.00		0.95	1.00
Satd. Flow (perm)	1610	3324	3420		3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	628	425	778	225	829	658
RTOR Reduction (vph)	0	0	29	0	0	15
Lane Group Flow (vph)	345	708	974	0	829	643
Turn Type	Split	NA	NA		Prot	pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	27.0	27.0	25.9		23.8	50.8
Effective Green, g (s)	29.5	29.5	28.4		24.8	55.8
Actuated g/C Ratio	0.33	0.33	0.32		0.28	0.62
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	527	1089	1079		945	1030
v/s Ratio Prot	c0.21	0.21	c0.28		c0.24	0.20
v/s Ratio Perm						0.20
v/c Ratio	0.65	0.65	0.90		0.88	0.62
Uniform Delay, d1	25.9	25.8	29.5		31.1	10.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.2	3.0	10.2		9.0	0.9
Delay (s)	32.1	28.9	39.7		40.1	11.5
Level of Service	C	C	D		D	B
Approach Delay (s)		29.9	39.7		27.4	
Approach LOS		C	D		C	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.3
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1574	418	82	1654	132	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3428		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3428		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1657	440	86	1741	139	21
RTOR Reduction (vph)	20	0	0	0	0	18
Lane Group Flow (vph)	2077	0	86	1741	139	3
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	80.9		8.0	92.9	12.8	12.8
Effective Green, g (s)	82.9		10.0	94.9	14.8	14.8
Actuated g/C Ratio	0.69		0.08	0.79	0.12	0.12
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2368		147	2798	218	195
v/s Ratio Prot	c0.61		0.05	c0.49	c0.08	
v/s Ratio Perm						0.00
v/c Ratio	0.88		0.59	0.62	0.64	0.01
Uniform Delay, d1	14.6		53.0	5.2	50.0	46.2
Progression Factor	0.43		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3		3.8	1.1	5.3	0.0
Delay (s)	8.5		56.8	6.2	55.3	46.2
Level of Service	A		E	A	E	D
Approach Delay (s)	8.5			8.6	54.1	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	367	2059	21	91	2471	39	16	52	111	62	66	712
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3534		3433	3539	1583	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3534		3433	3539	1583	1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	374	2101	21	93	2521	40	16	53	113	63	67	727
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	98	0	0	352
Lane Group Flow (vph)	374	2122	0	93	2521	22	16	53	15	63	67	375
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	15.4	63.3		17.0	64.9	64.9	2.7	16.1	16.1	5.7	18.0	18.0
Effective Green, g (s)	15.4	63.3		17.0	64.9	64.9	2.7	16.1	16.1	5.7	18.0	18.0
Actuated g/C Ratio	0.13	0.53		0.14	0.54	0.54	0.02	0.13	0.13	0.05	0.15	0.15
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.9		2.0	3.9	3.9	2.0	4.4	4.4	2.0	3.6	3.6
Lane Grp Cap (vph)	440	1864		486	1914	856	39	249	212	163	279	237
v/s Ratio Prot	0.11	c0.60		0.03	c0.71		0.01	0.03		c0.02	0.04	
v/s Ratio Perm						0.01			0.01			c0.24
v/c Ratio	0.85	1.14		0.19	1.32	0.03	0.41	0.21	0.07	0.39	0.24	1.58
Uniform Delay, d1	51.2	28.4		45.4	27.5	12.8	57.9	46.3	45.4	55.5	45.0	51.0
Progression Factor	0.66	1.35		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	62.9		0.1	146.5	0.0	2.5	0.7	0.2	0.6	0.5	281.4
Delay (s)	35.0	101.1		45.5	174.1	12.8	60.4	47.0	45.7	56.0	45.5	332.4
Level of Service	C	F		D	F	B	E	D	D	E	D	F
Approach Delay (s)		91.2			167.1			47.3			289.7	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	149.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	128.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	157	1299	429	64	1621	567	545	614	20	923	775	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	6.0		4.0	6.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91		0.94	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5061		4990	5084	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5061		4990	5084	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	165	1367	452	67	1706	597	574	646	21	972	816	1
RTOR Reduction (vph)	0	0	184	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	165	1367	268	67	1706	597	574	664	0	972	817	0
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free						
Actuated Green, G (s)	16.1	50.5	50.5	5.8	40.2	120.0	24.7	19.7		24.0	19.0	
Effective Green, g (s)	16.1	50.5	50.5	5.8	40.2	120.0	24.7	19.7		24.0	19.0	
Actuated g/C Ratio	0.13	0.42	0.42	0.05	0.34	1.00	0.21	0.16		0.20	0.16	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	460	2139	666	165	1703	1583	706	830		998	804	
v/s Ratio Prot	0.05	c0.27		0.02	c0.34		c0.17	0.13		c0.19	0.16	
v/s Ratio Perm			0.17			c0.38						
v/c Ratio	0.36	0.64	0.40	0.41	1.00	0.38	0.81	0.80		0.97	1.02	
Uniform Delay, d1	47.3	27.5	24.2	55.4	39.9	0.0	45.4	48.3		47.7	50.5	
Progression Factor	0.73	0.71	0.78	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.6	0.5	0.6	22.2	0.7	6.8	5.9		22.1	35.8	
Delay (s)	34.7	20.1	19.3	56.0	62.1	0.7	52.2	54.1		69.8	86.3	
Level of Service	C	C	B	E	E	A	D	D		E	F	
Approach Delay (s)		21.1			46.5			53.2			77.4	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	48.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	1425	152	167	1812	173	294	486	262	249	1132	493
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.0	4.0	4.9	4.0	5.0	6.7	6.7	5.0	6.3	6.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1562	3433	5085	1553	3433	5085	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1562	3433	5085	1553	3433	5085	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	133	1500	160	176	1907	182	309	512	276	262	1192	519
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	233	0	0	218
Lane Group Flow (vph)	133	1500	160	176	1907	182	309	512	43	262	1192	301
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			8			4
Actuated Green, G (s)	10.5	49.9	120.0	10.5	49.9	120.0	14.7	18.7	18.7	20.3	24.7	24.7
Effective Green, g (s)	10.5	49.9	120.0	10.5	49.9	120.0	14.7	18.7	18.7	20.3	24.7	24.7
Actuated g/C Ratio	0.09	0.42	1.00	0.09	0.42	1.00	0.12	0.16	0.16	0.17	0.21	0.21
Clearance Time (s)	4.0	4.9		4.0	4.9		5.0	6.7	6.7	5.0	6.3	6.3
Vehicle Extension (s)	2.0	5.6		2.0	5.6		2.0	2.7	2.7	2.0	3.1	3.1
Lane Grp Cap (vph)	300	2114	1562	300	2114	1562	420	792	242	580	1046	319
v/s Ratio Prot	0.04	0.29		c0.05	c0.38		c0.09	0.10		c0.08	c0.23	
v/s Ratio Perm			0.10			0.12			0.03			0.19
v/c Ratio	0.44	0.71	0.10	0.59	0.90	0.12	0.74	0.65	0.18	0.45	1.14	0.94
Uniform Delay, d1	52.0	29.0	0.0	52.7	32.8	0.0	50.8	47.5	44.0	44.8	47.6	46.9
Progression Factor	0.69	0.26	1.00	0.52	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.7	0.1	0.7	2.4	0.1	5.7	1.7	0.3	0.2	74.6	35.4
Delay (s)	36.3	9.3	0.1	28.2	18.9	0.1	56.5	49.2	44.3	45.0	122.3	82.3
Level of Service	D	A	A	C	B	A	E	D	D	D	F	F
Approach Delay (s)		10.5			18.1			50.0			101.5	
Approach LOS		B			B			D			F	

Intersection Summary			
HCM 2000 Control Delay	44.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	141	1653	42	167	2358	41	83	33	114	168	90	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5062		1770	5085	1523	1770	1863	1583	1681	1743	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (perm)	1770	5062		1770	5085	1523	1770	1863	1583	1681	1743	1555
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	148	1740	44	176	2482	43	87	35	120	177	95	134
RTOR Reduction (vph)	0	2	0	0	0	21	0	0	109	0	0	116
Lane Group Flow (vph)	148	1783	0	176	2482	22	87	35	11	135	137	18
Confl. Peds. (#/hr)			5			5						5
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	14.4	60.0		16.0	61.6	61.6	10.8	10.8	10.8	16.3	16.3	16.3
Effective Green, g (s)	14.4	60.0		16.0	61.6	61.6	10.8	10.8	10.8	16.3	16.3	16.3
Actuated g/C Ratio	0.12	0.50		0.13	0.51	0.51	0.09	0.09	0.09	0.14	0.14	0.14
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.7		2.0	5.6	5.6	2.5	2.5	2.5	2.0	2.0	2.0
Lane Grp Cap (vph)	212	2531		236	2610	781	159	167	142	228	236	211
v/s Ratio Prot	0.08	c0.35		0.10	c0.49		c0.05	0.02		c0.08	0.08	
v/s Ratio Perm						0.01			0.01			0.01
v/c Ratio	0.70	0.70		0.75	0.95	0.03	0.55	0.21	0.08	0.59	0.58	0.09
Uniform Delay, d1	50.7	23.2		50.0	27.8	14.4	52.3	50.6	50.0	48.7	48.6	45.3
Progression Factor	0.97	0.35		0.62	0.31	0.94	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	1.2		1.0	1.1	0.0	3.0	0.5	0.2	2.7	2.3	0.1
Delay (s)	54.8	9.4		32.2	9.8	13.5	55.3	51.1	50.2	51.5	51.0	45.4
Level of Service	D	A		C	A	B	E	D	D	D	D	D
Approach Delay (s)		12.9			11.3			52.2			49.3	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	1698	39	27	2492	46	167	39	32	229	50	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	4.0		4.6	4.6	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00	0.90	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98		0.95	0.98	
Satd. Flow (prot)	1770	5085	1435	1770	5085	1428	1681	1664		1681	1654	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98		0.95	0.98	
Satd. Flow (perm)	1770	5085	1435	1770	5085	1428	1681	1664		1681	1654	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	48	1787	41	28	2623	48	176	41	34	241	53	41
RTOR Reduction (vph)	0	0	20	0	0	27	0	12	0	0	10	0
Lane Group Flow (vph)	48	1787	21	28	2623	21	127	112	0	169	156	0
Confl. Peds. (#/hr)			20			20						20
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	13.6	61.3	61.3	4.5	52.2	52.2	13.1	13.1		23.6	23.6	
Effective Green, g (s)	13.6	61.3	61.3	4.5	52.2	52.2	13.1	13.1		23.6	23.6	
Actuated g/C Ratio	0.11	0.51	0.51	0.04	0.44	0.44	0.11	0.11		0.20	0.20	
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	4.0		4.6	4.6	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.5	2.5		2.0	2.0	
Lane Grp Cap (vph)	200	2597	733	66	2211	621	183	181		330	325	
v/s Ratio Prot	0.03	c0.35		0.02	c0.52		c0.08	0.07		c0.10	0.09	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.24	0.69	0.03	0.42	1.19	0.03	0.69	0.62		0.51	0.48	
Uniform Delay, d1	48.5	22.1	14.6	56.5	33.9	19.4	51.5	51.1		43.1	42.7	
Progression Factor	0.61	0.43	1.00	0.93	0.58	6.63	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.8	0.0	0.7	86.2	0.0	10.0	5.6		0.6	0.4	
Delay (s)	29.6	10.5	14.6	53.1	105.8	128.9	61.5	56.7		43.6	43.2	
Level of Service	C	B	B	D	F	F	E	E		D	D	
Approach Delay (s)		11.0			105.7			59.1			43.4	
Approach LOS		B			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	65.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	1600	187	206	2224	145	391	498	165	181	794	464
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9	4.9	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1554	3433	6342		3433	3539	1554	3433	5085	1551
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1554	3433	6342		3433	3539	1554	3433	5085	1551
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	453	1684	197	217	2341	153	412	524	174	191	836	488
RTOR Reduction (vph)	0	0	21	0	8	0	0	0	135	0	0	87
Lane Group Flow (vph)	453	1684	176	217	2486	0	412	524	39	191	836	401
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot	NA	custom	Prot	NA		Prot	NA	Perm	Prot	NA	custom
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2 3						8			4 5
Actuated Green, G (s)	16.0	55.1	75.0	11.0	50.1		15.0	26.6	26.6	9.5	20.7	36.7
Effective Green, g (s)	16.0	55.1	75.0	11.0	50.1		15.0	26.6	26.6	9.5	20.7	36.7
Actuated g/C Ratio	0.13	0.46	0.62	0.09	0.42		0.12	0.22	0.22	0.08	0.17	0.31
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.9	4.9	4.0	5.3	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5	4.5	2.0	5.1	
Lane Grp Cap (vph)	457	2334	971	314	2647		429	784	344	271	877	474
v/s Ratio Prot	c0.13	0.33		0.06	c0.39		c0.12	0.15		0.06	c0.16	
v/s Ratio Perm			0.11						0.02			0.26
v/c Ratio	0.99	0.72	0.18	0.69	0.94		0.96	0.67	0.11	0.70	0.95	0.85
Uniform Delay, d1	51.9	26.2	9.5	52.9	33.5		52.2	42.7	37.3	53.9	49.2	39.0
Progression Factor	1.14	1.29	1.01	0.85	0.74		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.2	1.7	0.0	2.3	3.6		33.1	2.6	0.3	6.6	20.3	14.3
Delay (s)	96.4	35.5	9.7	47.0	28.4		85.3	45.3	37.5	60.5	69.5	53.3
Level of Service	F	D	A	D	C		F	D	D	E	E	D
Approach Delay (s)		45.2			29.9			58.9			63.1	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	45.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	159	1579	62	68	2375	14	136	24	53	107	12	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.90		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5050		1770	5080		1770	1643		1770	1574	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5050		1770	5080		1770	1643		1770	1574	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	167	1662	65	72	2500	15	143	25	56	113	13	136
RTOR Reduction (vph)	0	3	0	0	0	0	0	52	0	0	125	0
Lane Group Flow (vph)	167	1724	0	72	2515	0	143	29	0	113	24	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	15.5	67.1		12.8	64.4		13.8	7.6		15.6	9.4	
Effective Green, g (s)	15.5	67.1		12.8	64.4		13.8	7.6		15.6	9.4	
Actuated g/C Ratio	0.13	0.56		0.11	0.54		0.12	0.06		0.13	0.08	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	5.8		2.0	5.8		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	228	2823		188	2726		203	104		230	123	
v/s Ratio Prot	c0.09	0.34		0.04	c0.50		c0.08	0.02		c0.06	0.02	
v/s Ratio Perm												
v/c Ratio	0.73	0.61		0.38	0.92		0.70	0.27		0.49	0.19	
Uniform Delay, d1	50.3	17.7		49.9	25.5		51.1	53.6		48.5	51.7	
Progression Factor	0.58	1.13		0.55	0.25		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.8	0.8		0.2	3.0		10.6	1.4		1.7	0.8	
Delay (s)	37.0	20.8		27.9	9.4		61.7	55.0		50.2	52.5	
Level of Service	D	C		C	A		E	E		D	D	
Approach Delay (s)		22.2			10.0			59.3			51.5	
Approach LOS		C			A			E			D	

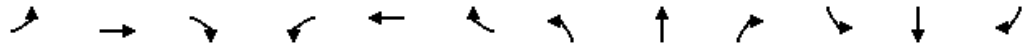
Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	214	1766	413	116	1604	881	255	696	54	814	1046	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	5.7	5.7	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.94	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1556	3433	5085	1562	3433	5085	1554	4990	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1556	3433	5085	1562	3433	5085	1554	4990	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	225	1859	435	122	1688	927	268	733	57	857	1101	145
RTOR Reduction (vph)	0	0	150	0	0	0	0	0	45	0	0	0
Lane Group Flow (vph)	225	1859	285	122	1688	927	268	733	12	857	1101	145
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			8			Free
Actuated Green, G (s)	11.3	50.5	50.5	9.0	48.2	129.0	13.5	26.7	26.7	23.1	36.3	129.0
Effective Green, g (s)	11.3	50.5	50.5	9.0	48.2	129.0	13.5	26.7	26.7	23.1	36.3	129.0
Actuated g/C Ratio	0.09	0.39	0.39	0.07	0.37	1.00	0.10	0.21	0.21	0.18	0.28	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	3.9	3.9	2.0	3.9		2.0	4.3	4.3	2.0	4.3	
Lane Grp Cap (vph)	300	1990	609	239	1899	1562	359	1052	321	893	1430	1562
v/s Ratio Prot	c0.07	c0.37		0.04	0.33		0.08	c0.14		c0.17	c0.22	
v/s Ratio Perm			0.18			c0.59			0.01			0.09
v/c Ratio	0.75	0.93	0.47	0.51	0.89	0.59	0.75	0.70	0.04	0.96	0.77	0.09
Uniform Delay, d1	57.5	37.7	29.2	57.9	37.9	0.0	56.1	47.4	40.9	52.5	42.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	9.7	2.6	0.8	5.7	1.7	7.2	2.3	0.1	20.5	2.8	0.1
Delay (s)	66.5	47.3	31.8	58.6	43.6	1.7	63.3	49.7	40.9	73.0	45.3	0.1
Level of Service	E	D	C	E	D	A	E	D	D	E	D	A
Approach Delay (s)		46.4			30.0			52.7			53.5	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	129.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

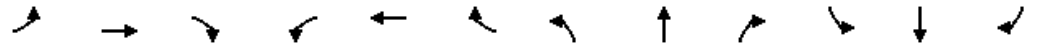


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	1153	4	13	1345	98	5	2	12	508	4	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3537		1770	3503			1678		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3537		1770	3503			1678		1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	103	1214	4	14	1416	103	5	2	13	535	4	95
RTOR Reduction (vph)	0	0	0	0	4	0	0	13	0	0	0	76
Lane Group Flow (vph)	103	1218	0	14	1515	0	0	7	0	267	272	19
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	9.6	76.6		1.2	68.2			1.6		23.1	23.1	23.1
Effective Green, g (s)	10.6	77.6		2.2	69.2			2.6		24.1	24.1	24.1
Actuated g/C Ratio	0.09	0.65		0.02	0.58			0.02		0.20	0.20	0.20
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	156	2287		32	2020			36		337	338	317
v/s Ratio Prot	c0.06	0.34		0.01	c0.43			c0.00		0.16	c0.16	
v/s Ratio Perm												0.01
v/c Ratio	0.66	0.53		0.44	0.75			0.20		0.79	0.80	0.06
Uniform Delay, d1	53.0	11.4		58.3	18.9			57.7		45.6	45.7	38.8
Progression Factor	0.81	1.18		0.65	0.53			1.00		1.00	1.00	1.00
Incremental Delay, d2	6.7	0.8		1.4	0.7			1.0		11.7	12.7	0.1
Delay (s)	49.4	14.2		39.4	10.8			58.7		57.2	58.4	38.8
Level of Service	D	B		D	B			E		E	E	D
Approach Delay (s)		16.9			11.0			58.7			55.0	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	375	1309	18	109	1094	583	48	61	114	997	12	333
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	395	1378	19	115	1152	614	51	64	120	1049	13	351
RTOR Reduction (vph)	0	1	0	0	0	213	0	0	116	0	0	220
Lane Group Flow (vph)	395	1396	0	115	1152	401	51	64	4	535	527	131
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	25.0	55.1		8.0	38.1	38.1	4.0	4.0	4.0	35.1	35.1	35.1
Effective Green, g (s)	25.0	55.1		8.0	38.1	38.1	4.0	4.0	4.0	35.1	35.1	35.1
Actuated g/C Ratio	0.21	0.46		0.07	0.32	0.32	0.03	0.03	0.03	0.29	0.29	0.29
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.3		2.0	3.5	3.5	2.0	2.0	2.0	2.3	2.3	2.3
Lane Grp Cap (vph)	368	1621		118	1123	502	59	62	52	491	493	463
v/s Ratio Prot	c0.22	0.40		0.06	c0.33		0.03	c0.03		c0.32	0.31	
v/s Ratio Perm						0.25			0.00			0.08
v/c Ratio	1.07	0.86		0.97	1.03	0.80	0.86	1.03	0.08	1.09	1.07	0.28
Uniform Delay, d1	47.5	29.0		55.9	41.0	37.4	57.7	58.0	56.2	42.5	42.5	32.7
Progression Factor	0.90	0.72		1.35	0.56	0.45	1.00	1.00	1.00	0.89	0.89	2.24
Incremental Delay, d2	64.1	5.4		18.8	15.8	0.9	68.5	123.6	0.2	61.8	54.7	0.1
Delay (s)	107.0	26.4		94.4	38.9	17.8	126.3	181.6	56.4	99.8	92.6	73.4
Level of Service	F	C		F	D	B	F	F	E	F	F	E
Approach Delay (s)		44.2			35.4			105.7			90.5	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	56.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	487	0	0	621	399	2	2	0	507	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0		3.0	3.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		0.95	0.95	
Frt		1.00			1.00	0.85		1.00		1.00	0.99	
Flt Protected		1.00			1.00	1.00		0.98		0.95	0.96	
Satd. Flow (prot)		3539			1863	1583		1817		1681	1670	
Flt Permitted		0.95			1.00	1.00		1.00		0.95	0.96	
Satd. Flow (perm)		3378			1863	1583		1863		1681	1670	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	513	0	0	654	420	2	2	0	534	0	24
RTOR Reduction (vph)	0	0	0	0	0	43	0	0	0	0	71	0
Lane Group Flow (vph)	0	514	0	0	654	377	0	4	0	283	204	0
Turn Type	Perm	NA			NA	pt+ov	Perm	NA		Split	NA	
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases	2						3					
Actuated Green, G (s)		81.5			76.9	106.6		0.8		24.8	24.8	
Effective Green, g (s)		82.5			77.9	107.6		1.8		25.8	25.8	
Actuated g/C Ratio		0.69			0.65	0.90		0.02		0.22	0.22	
Clearance Time (s)		4.9			4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1			3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		2322			1209	1419		27		361	359	
v/s Ratio Prot					c0.35	0.24				c0.17	0.12	
v/s Ratio Perm		c0.15						c0.00				
v/c Ratio		0.22			0.54	0.27		0.15		0.78	0.57	
Uniform Delay, d1		6.9			11.4	0.8		58.3		44.5	42.1	
Progression Factor		1.00			1.49	1.23		1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.5	0.1		0.9		9.9	1.2	
Delay (s)		7.1			17.4	1.1		59.3		54.3	43.4	
Level of Service		A			B	A		E		D	D	
Approach Delay (s)		7.1			11.0			59.3			48.9	
Approach LOS		A			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

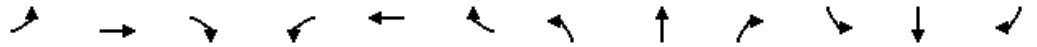
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1077	44	175	561	32	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		2.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3519		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3519		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1134	46	184	591	34	176
RTOR Reduction (vph)	4	0	0	0	0	158
Lane Group Flow (vph)	1176	0	184	591	34	18
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	33.2		9.7	45.9	5.2	5.2
Effective Green, g (s)	34.2		10.7	46.9	6.2	6.2
Actuated g/C Ratio	0.57		0.18	0.78	0.10	0.10
Clearance Time (s)	4.9		3.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	2005		315	2766	182	163
v/s Ratio Prot	c0.33		c0.10	0.17	c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.59		0.58	0.21	0.19	0.11
Uniform Delay, d1	8.3		22.6	1.7	24.6	24.4
Progression Factor	1.06		1.19	1.40	1.00	1.00
Incremental Delay, d2	0.4		1.3	0.1	0.2	0.1
Delay (s)	9.2		28.1	2.5	24.8	24.5
Level of Service	A		C	A	C	C
Approach Delay (s)	9.2			8.6	24.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

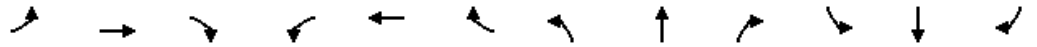
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	991	24	18	979	0	45	0	45	75	11	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9		2.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		1.00	1.00	
Frt		1.00		1.00	1.00			0.93		1.00	0.89	
Flt Protected		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3527		1770	3539			1695		1770	1660	
Flt Permitted		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3527		1770	3539			1695		1770	1660	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1043	25	19	1031	0	47	0	47	79	12	32
RTOR Reduction (vph)	0	1	0	0	0	0	0	75	0	0	29	0
Lane Group Flow (vph)	0	1067	0	19	1031	0	0	19	0	79	15	0
Turn Type		NA		Prot	NA		Split	NA		Split	NA	
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)		83.8		3.2	90.0			8.5		8.6	8.6	
Effective Green, g (s)		84.8		4.2	91.0			9.5		9.6	9.6	
Actuated g/C Ratio		0.71		0.04	0.76			0.08		0.08	0.08	
Clearance Time (s)		4.9		3.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1		2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		2492		61	2683			134		141	132	
v/s Ratio Prot		c0.30		0.01	c0.29			c0.01		c0.04	0.01	
v/s Ratio Perm												
v/c Ratio		0.43		0.31	0.38			0.14		0.56	0.11	
Uniform Delay, d1		7.4		56.5	4.9			51.5		53.2	51.2	
Progression Factor		0.64		1.18	0.49			1.00		1.00	1.00	
Incremental Delay, d2		0.1		1.1	0.4			0.2		3.0	0.1	
Delay (s)		4.8		67.6	2.8			51.6		56.2	51.4	
Level of Service		A		E	A			D		E	D	
Approach Delay (s)		4.8			4.0			51.6			54.5	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.9
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	341	1750	430	413	1763	209	316	941	255	226	927	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	3.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	4.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1538
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	359	1842	453	435	1856	220	333	991	268	238	976	67
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	54
Lane Group Flow (vph)	359	1842	453	435	1856	220	333	991	268	238	976	13
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			4
Actuated Green, G (s)	14.6	46.0	120.0	17.0	50.4	120.0	12.9	25.3	120.0	10.0	22.4	22.4
Effective Green, g (s)	15.6	49.0	120.0	18.0	53.4	120.0	13.9	28.3	120.0	11.0	25.4	23.4
Actuated g/C Ratio	0.13	0.41	1.00	0.15	0.44	1.00	0.12	0.24	1.00	0.09	0.21	0.19
Clearance Time (s)	4.0	6.0		6.0	6.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.1		2.0	3.3		2.0	4.2		2.0	4.5	4.5
Lane Grp Cap (vph)	431	2076	1560	497	2262	1560	384	1199	1560	304	1076	299
v/s Ratio Prot	0.11	c0.36		0.13	c0.36		c0.10	c0.19		0.07	0.19	
v/s Ratio Perm			c0.29			0.14			0.17			0.01
v/c Ratio	0.83	0.89	0.29	0.88	0.82	0.14	0.87	0.83	0.17	0.78	0.91	0.04
Uniform Delay, d1	50.9	32.9	0.0	49.9	29.1	0.0	52.1	43.5	0.0	53.3	46.1	39.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.4	6.1	0.5	15.3	2.6	0.2	17.7	5.1	0.2	11.5	11.3	0.1
Delay (s)	63.3	39.0	0.5	65.2	31.7	0.2	69.8	48.6	0.2	64.8	57.5	39.3
Level of Service	E	D	A	E	C	A	E	D	A	E	E	D
Approach Delay (s)		35.7			34.7			44.9			57.9	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



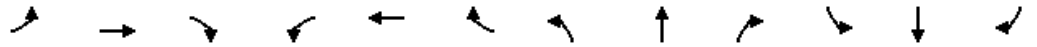
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	262	280	50	190	126	234	1414	91	105	1471	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	276	295	53	200	133	246	1488	96	111	1548	84
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	57	276	295	53	200	133	246	1488	96	111	1548	84
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.2	14.7	120.0	6.1	14.6	120.0	20.3	67.7	120.0	11.4	58.8	120.0
Effective Green, g (s)	7.2	17.2	120.0	7.1	17.1	120.0	21.3	70.2	120.0	12.4	61.3	120.0
Actuated g/C Ratio	0.06	0.14	1.00	0.06	0.14	1.00	0.18	0.59	1.00	0.10	0.51	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	106	507	1583	104	504	1583	314	2974	1583	182	2597	1583
v/s Ratio Prot	c0.03	c0.08		0.03	0.06		c0.14	0.29		0.06	c0.30	
v/s Ratio Perm			c0.19			0.08			0.06			0.05
v/c Ratio	0.54	0.54	0.19	0.51	0.40	0.08	0.78	0.50	0.06	0.61	0.60	0.05
Uniform Delay, d1	54.8	47.8	0.0	54.8	46.8	0.0	47.1	14.6	0.0	51.5	20.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	1.3	0.3	1.4	0.7	0.1	11.2	0.6	0.1	3.9	0.5	0.1
Delay (s)	57.4	49.1	0.3	56.2	47.4	0.1	58.3	15.2	0.1	55.4	21.1	0.1
Level of Service	E	D	A	E	D	A	E	B	A	E	C	A
Approach Delay (s)		26.9			32.3			20.2			22.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.1
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	221	1579	359	189	2430	92	533	529	204	174	480	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.3	4.0	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.94	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	6408	1562	4990	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	6408	1562	4990	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	233	1662	378	199	2558	97	561	557	215	183	505	271
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	233	1662	378	199	2558	97	561	557	215	183	505	271
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.1	57.0	120.0	11.5	54.4	120.0	17.8	21.1	120.0	11.4	14.3	120.0
Effective Green, g (s)	14.1	57.0	120.0	11.5	54.4	120.0	17.8	21.1	120.0	11.4	14.3	120.0
Actuated g/C Ratio	0.12	0.48	1.00	0.10	0.45	1.00	0.15	0.18	1.00	0.10	0.12	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	3.9		2.0	3.5	
Lane Grp Cap (vph)	403	2415	1562	328	2904	1562	740	894	1562	326	605	1562
v/s Ratio Prot	0.07	c0.33		0.06	c0.40		c0.11	c0.11		0.05	c0.10	
v/s Ratio Perm			0.24			0.06			0.14			0.17
v/c Ratio	0.58	0.69	0.24	0.61	0.88	0.06	0.76	0.62	0.14	0.56	0.83	0.17
Uniform Delay, d1	50.1	24.6	0.0	52.1	29.9	0.0	49.0	45.8	0.0	51.9	51.7	0.0
Progression Factor	0.88	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.7	0.3	2.2	4.2	0.1	4.0	1.5	0.2	1.3	9.9	0.2
Delay (s)	45.1	19.2	0.3	54.3	34.1	0.1	53.0	47.3	0.2	53.2	61.6	0.2
Level of Service	D	B	A	D	C	A	D	D	A	D	E	A
Approach Delay (s)		18.7			34.3			42.1			42.7	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	466	307	18	123	313	95	1	1503	11	104	1392	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.5	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	491	323	19	129	329	100	1	1582	12	109	1465	344
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	491	323	19	129	329	100	1	1582	12	109	1465	344
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	20.8	24.0	120.0	12.3	15.2	120.0	0.6	53.5	120.0	10.8	63.7	120.0
Effective Green, g (s)	21.8	26.5	120.0	13.3	17.7	120.0	1.6	56.0	120.0	11.8	66.2	120.0
Actuated g/C Ratio	0.18	0.22	1.00	0.11	0.15	1.00	0.01	0.47	1.00	0.10	0.55	1.00
Clearance Time (s)	4.0	5.7		4.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.3		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	623	781	1583	196	522	1583	23	2373	1583	174	2805	1583
v/s Ratio Prot	c0.14	0.09		0.07	c0.09		0.00	c0.31		c0.06	0.29	
v/s Ratio Perm			0.01			0.06			0.01			0.22
v/c Ratio	0.79	0.41	0.01	0.66	0.63	0.06	0.04	0.67	0.01	0.63	0.52	0.22
Uniform Delay, d1	46.9	40.1	0.0	51.2	48.1	0.0	58.4	24.8	0.0	52.0	16.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	0.6	0.0	6.0	2.7	0.1	0.3	1.5	0.0	5.0	0.7	0.3
Delay (s)	53.0	40.7	0.0	57.1	50.8	0.1	58.7	26.3	0.0	57.0	17.6	0.3
Level of Service	D	D	A	E	D	A	E	C	A	E	B	A
Approach Delay (s)		47.0			43.2			26.1			16.8	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.7
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	1158	52	50	733	8	40	2	27	12	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.97	1.00
Satd. Flow (prot)	1770	3516		1770	3539	1583		1778	1583		1807	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.97	1.00
Satd. Flow (perm)	1770	3516		1770	3539	1583		1778	1583		1807	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	1219	55	53	772	8	42	2	28	13	8	3
RTOR Reduction (vph)	0	3	0	0	0	3	0	0	25	0	0	3
Lane Group Flow (vph)	45	1271	0	53	772	5	0	44	3	0	21	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	1.9	36.0		2.7	36.8	36.8		5.9	5.9		4.7	4.7
Effective Green, g (s)	2.9	39.0		3.7	39.8	37.8		6.9	6.9		5.7	5.7
Actuated g/C Ratio	0.04	0.58		0.06	0.59	0.56		0.10	0.10		0.09	0.09
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	76	2046		97	2102	893		183	163		153	134
v/s Ratio Prot	0.03	c0.36		c0.03	0.22			c0.02			c0.01	
v/s Ratio Perm						0.00			0.00			0.00
v/c Ratio	0.59	0.62		0.55	0.37	0.01		0.24	0.02		0.14	0.00
Uniform Delay, d1	31.5	9.2		30.8	7.1	6.4		27.6	27.0		28.4	28.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	8.0	1.1		3.3	0.3	0.0		0.2	0.0		0.1	0.0
Delay (s)	39.4	10.2		34.2	7.4	6.4		27.9	27.0		28.5	28.0
Level of Service	D	B		C	A	A		C	C		C	C
Approach Delay (s)		11.2			9.1			27.6			28.5	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	0	0	14	2	45	7	825	11	51	1189	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0				3.0	3.0	2.0	4.7		3.0	4.7	
Lane Util. Factor	1.00				1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00				1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770				1784	1583	1770	3532		1770	3534	
Flt Permitted	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770				1784	1583	1770	3532		1770	3534	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	0	0	15	2	47	7	868	12	54	1252	12
RTOR Reduction (vph)	0	0	0	0	0	41	0	1	0	0	0	0
Lane Group Flow (vph)	18	0	0	0	17	6	7	879	0	54	1264	0
Turn Type	Split			Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						4						
Actuated Green, G (s)	1.2				6.5	6.5	0.9	34.5		3.7	38.3	
Effective Green, g (s)	2.2				7.5	7.5	1.9	35.5		4.7	39.3	
Actuated g/C Ratio	0.03				0.12	0.12	0.03	0.56		0.07	0.62	
Clearance Time (s)	4.0				4.0	4.0	3.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0				2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	61				210	186	52	1971		130	2183	
v/s Ratio Prot	c0.01				c0.01		0.00	0.25		c0.03	c0.36	
v/s Ratio Perm						0.00						
v/c Ratio	0.30				0.08	0.03	0.13	0.45		0.42	0.58	
Uniform Delay, d1	29.9				25.0	24.8	30.0	8.3		28.1	7.2	
Progression Factor	1.00				1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0				0.1	0.0	0.4	0.3		0.8	0.5	
Delay (s)	30.9				25.0	24.9	30.5	8.5		28.9	7.8	
Level of Service	C				C	C	C	A		C	A	
Approach Delay (s)		30.9			24.9			8.7			8.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	13.7
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	849	221	177	895	38	228	45	115	20	36	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1712	1478	1770	1863	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1712	1478	1770	1863	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	83	894	233	186	942	40	240	47	121	21	38	69
RTOR Reduction (vph)	0	0	134	0	0	21	0	0	109	0	0	60
Lane Group Flow (vph)	83	894	99	186	942	19	142	145	12	21	38	9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	3.0	20.0	20.0	6.1	23.1	23.1	4.1	4.1	4.1	5.0	5.0	5.0
Effective Green, g (s)	4.0	22.7	22.7	7.1	25.8	25.8	5.1	5.1	5.1	6.0	6.9	6.9
Actuated g/C Ratio	0.07	0.42	0.42	0.13	0.48	0.48	0.10	0.10	0.10	0.11	0.13	0.13
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	132	1501	627	234	1706	712	160	163	140	198	240	190
v/s Ratio Prot	0.05	c0.25		c0.11	c0.27		0.08	c0.08		0.01	c0.02	
v/s Ratio Perm			0.07			0.01			0.01			0.01
v/c Ratio	0.63	0.60	0.16	0.79	0.55	0.03	0.89	0.89	0.08	0.11	0.16	0.05
Uniform Delay, d1	24.0	11.9	9.5	22.5	9.8	7.3	23.9	23.9	22.1	21.3	20.7	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	0.7	0.2	15.8	0.5	0.0	39.2	39.1	0.1	0.3	0.4	0.1
Delay (s)	30.6	12.6	9.7	38.3	10.3	7.3	63.1	63.0	22.2	21.7	21.1	20.6
Level of Service	C	B	A	D	B	A	E	E	C	C	C	C
Approach Delay (s)		13.3			14.6			50.9			20.9	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	12.6
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	2	105	22	1	26	84	820	25	72	1015	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1770	1593		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1770	1593		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	187	2	111	23	1	27	88	863	26	76	1068	115
RTOR Reduction (vph)	0	0	94	0	25	0	0	0	14	0	0	63
Lane Group Flow (vph)	95	94	17	23	3	0	88	863	12	76	1068	52
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.4	11.4	11.4	4.6	4.6		6.9	33.6	33.6	6.4	33.1	33.1
Effective Green, g (s)	11.4	11.4	11.4	4.6	4.6		6.9	33.6	33.6	6.4	33.1	33.1
Actuated g/C Ratio	0.16	0.16	0.16	0.06	0.06		0.09	0.46	0.46	0.09	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	261	262	246	111	99		166	1622	725	154	1598	714
v/s Ratio Prot	c0.06	0.06		c0.01	0.00		c0.05	0.24		0.04	c0.30	
v/s Ratio Perm			0.01						0.01			0.03
v/c Ratio	0.36	0.36	0.07	0.21	0.03		0.53	0.53	0.02	0.49	0.67	0.07
Uniform Delay, d1	27.7	27.7	26.4	32.6	32.2		31.7	14.2	10.8	31.9	15.8	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.0	0.3	0.0		1.6	0.4	0.0	0.9	1.2	0.1
Delay (s)	28.0	28.0	26.5	33.0	32.3		33.3	14.6	10.8	32.8	17.0	11.5
Level of Service	C	C	C	C	C		C	B	B	C	B	B
Approach Delay (s)		27.4			32.6			16.2			17.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	17.3
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	541	378	57	448	66	420	70	42	60	44	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1708	1583		1810	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1708	1583		1810	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	569	398	60	472	69	442	74	44	63	46	19
RTOR Reduction (vph)	0	0	130	0	0	36	0	0	33	0	0	17
Lane Group Flow (vph)	42	569	268	60	472	33	256	260	11	0	109	2
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	3.0	37.7	58.6	6.2	40.9	40.9	20.9	20.9	20.9		8.2	8.2
Effective Green, g (s)	4.0	39.7	60.6	7.2	42.9	42.9	21.9	21.9	21.9		9.2	9.2
Actuated g/C Ratio	0.04	0.44	0.67	0.08	0.48	0.48	0.24	0.24	0.24		0.10	0.10
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	78	1561	1065	141	1686	754	409	415	385		185	161
v/s Ratio Prot	0.02	c0.16	0.06	c0.03	0.13		c0.15	0.15			c0.06	
v/s Ratio Perm			0.11			0.02			0.01			0.00
v/c Ratio	0.54	0.36	0.25	0.43	0.28	0.04	0.63	0.63	0.03		0.59	0.01
Uniform Delay, d1	42.1	16.7	5.8	39.4	14.2	12.6	30.4	30.4	25.9		38.6	36.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.5	0.2	0.1	0.8	0.4	0.1	3.1	3.1	0.0		3.1	0.0
Delay (s)	45.6	17.0	5.9	40.2	14.6	12.7	33.5	33.5	26.0		41.7	36.3
Level of Service	D	B	A	D	B	B	C	C	C		D	D
Approach Delay (s)		13.8			17.0			32.9			40.9	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	82	910	84	66	814	2	142	40	10	3	17	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		2.0	2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1793	1583		1850	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1793	1583		1850	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	86	958	88	69	857	2	149	42	11	3	18	97
RTOR Reduction (vph)	0	0	56	0	0	1	0	0	7	0	0	91
Lane Group Flow (vph)	86	958	32	69	857	1	0	191	4	0	21	6
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	7.1	31.1	31.1	6.5	30.5	30.5		31.7	31.7		4.7	4.7
Effective Green, g (s)	8.1	33.1	33.1	7.5	32.5	32.5		32.7	32.7		5.7	5.7
Actuated g/C Ratio	0.09	0.37	0.37	0.08	0.36	0.36		0.36	0.36		0.06	0.06
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.0	4.0		3.0	3.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3		3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	159	1301	582	147	1277	571		651	575		117	100
v/s Ratio Prot	0.05	c0.27		0.04	c0.24			c0.11			c0.01	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.54	0.74	0.06	0.47	0.67	0.00		0.29	0.01		0.18	0.06
Uniform Delay, d1	39.2	24.7	18.4	39.4	24.2	18.4		20.4	18.3		39.9	39.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	2.4	0.1	0.9	1.6	0.0		1.1	0.0		0.3	0.1
Delay (s)	41.2	27.1	18.4	40.2	25.9	18.4		21.6	18.3		40.2	39.7
Level of Service	D	C	B	D	C	B		C	B		D	D
Approach Delay (s)		27.5			26.9			21.4			39.8	
Approach LOS		C			C			C			D	

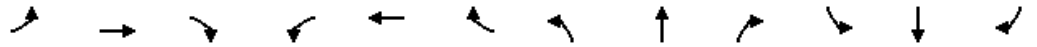
Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	1092	64	95	867	29	132	32	20	3	34	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1717	1583		1791	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1717	1583		1791	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1149	67	100	913	31	139	34	21	3	36	14
RTOR Reduction (vph)	0	0	33	0	0	14	0	0	18	0	13	0
Lane Group Flow (vph)	57	1149	34	100	913	17	86	87	3	0	40	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	2.0	28.3	28.3	4.4	30.7	30.7	6.6	6.6	6.6		2.0	
Effective Green, g (s)	4.0	30.3	30.3	5.4	32.7	32.7	7.6	7.6	7.6		4.0	
Actuated g/C Ratio	0.07	0.51	0.51	0.09	0.55	0.55	0.13	0.13	0.13		0.07	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	120	1817	812	162	1961	877	216	221	203		121	
v/s Ratio Prot	0.03	c0.32		c0.06	0.26		c0.05	0.05			c0.02	
v/s Ratio Perm			0.02			0.01			0.00			
v/c Ratio	0.47	0.63	0.04	0.62	0.47	0.02	0.40	0.39	0.01		0.33	
Uniform Delay, d1	26.5	10.3	7.1	25.8	7.9	5.9	23.6	23.6	22.4		26.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.1	0.8	0.0	4.8	0.2	0.0	0.4	0.4	0.0		0.6	
Delay (s)	27.6	11.2	7.2	30.7	8.1	5.9	24.0	24.0	22.4		26.8	
Level of Service	C	B	A	C	A	A	C	C	C		C	
Approach Delay (s)		11.7			10.2			23.9			26.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	35	12	64	134	121	26	1239	38	34	1022	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9	3.7	3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	124	37	13	67	141	127	27	1304	40	36	1076	311
RTOR Reduction (vph)	0	0	11	0	0	111	0	0	20	0	0	151
Lane Group Flow (vph)	124	37	2	67	141	16	27	1304	20	36	1076	160
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	9.6	9.6	9.6	8.4	8.4	8.4	2.8	35.2	35.2	4.2	36.6	36.6
Effective Green, g (s)	11.2	11.2	10.6	10.0	10.0	10.0	3.8	38.6	38.6	5.2	40.0	40.0
Actuated g/C Ratio	0.14	0.14	0.14	0.13	0.13	0.13	0.05	0.50	0.50	0.07	0.52	0.52
Clearance Time (s)	4.9	4.9	4.9	5.3	5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1	2.0	2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	255	268	216	228	240	203	86	1760	787	118	1824	815
v/s Ratio Prot	c0.07	0.02		0.04	c0.08		0.02	c0.37		c0.02	0.30	
v/s Ratio Perm			0.00			0.01			0.01			0.10
v/c Ratio	0.49	0.14	0.01	0.29	0.59	0.08	0.31	0.74	0.03	0.31	0.59	0.20
Uniform Delay, d1	30.6	29.0	29.0	30.6	31.9	29.8	35.6	15.5	9.9	34.5	13.1	10.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.2	0.0	0.3	2.4	0.1	0.8	2.0	0.0	0.5	0.7	0.2
Delay (s)	32.1	29.2	29.0	30.9	34.2	29.8	36.4	17.5	10.0	35.0	13.8	10.4
Level of Service	C	C	C	C	C	C	D	B	A	D	B	B
Approach Delay (s)		31.2			31.9			17.7			13.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	12.6
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

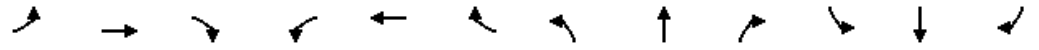


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	15	48	117	9	0	131	1016	106	0	1335	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	4.0	4.0		3.0	5.0	6.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00		0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1593	1676	1425	1593	1676		1593	3185	1425		3185	1425
Flt Permitted	0.95	1.00	1.00	0.75	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1593	1676	1425	1252	1676		1593	3185	1425		3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	67	16	51	123	9	0	138	1069	112	0	1405	96
RTOR Reduction (vph)	0	0	37	0	0	0	0	0	39	0	0	36
Lane Group Flow (vph)	67	16	14	123	9	0	138	1069	73	0	1405	60
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Actuated Green, G (s)	7.0	28.4	28.4	17.4	17.4		10.1	70.5	70.5		56.4	56.4
Effective Green, g (s)	8.0	28.4	29.4	17.4	17.4		11.1	71.5	70.5		57.4	57.4
Actuated g/C Ratio	0.07	0.26	0.27	0.16	0.16		0.10	0.66	0.65		0.53	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.7	4.7		4.7	4.7
Lane Grp Cap (vph)	117	437	384	200	267		162	2091	922		1678	751
v/s Ratio Prot	c0.04	0.01			0.01		c0.09	0.34			c0.44	
v/s Ratio Perm			0.01	c0.10					0.05			0.04
v/c Ratio	0.57	0.04	0.04	0.61	0.03		0.85	0.51	0.08		0.84	0.08
Uniform Delay, d1	48.8	30.0	29.3	42.6	38.6		48.1	9.7	7.1		21.8	12.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.2	0.0	0.0	3.9	0.0		31.6	0.4	0.1		4.2	0.1
Delay (s)	53.0	30.1	29.3	46.5	38.7		79.7	10.0	7.2		26.0	12.8
Level of Service	D	C	C	D	D		E	B	A		C	B
Approach Delay (s)		41.2			46.0			17.1			25.2	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	118	117	208	1259	1258	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	124	123	219	1325	1324	191
RTOR Reduction (vph)	0	100	0	0	0	95
Lane Group Flow (vph)	124	23	219	1325	1324	96
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	11.3	11.3	10.9	44.7	29.8	29.8
Effective Green, g (s)	12.3	12.3	11.9	48.1	33.2	33.2
Actuated g/C Ratio	0.19	0.19	0.18	0.73	0.50	0.50
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	329	295	319	2579	1780	796
v/s Ratio Prot	c0.07		c0.12	0.37	c0.37	
v/s Ratio Perm		0.01				0.06
v/c Ratio	0.38	0.08	0.69	0.51	0.74	0.12
Uniform Delay, d1	23.5	22.2	25.3	3.9	13.0	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	4.8	0.3	2.0	0.1
Delay (s)	23.8	22.2	30.1	4.2	15.0	8.8
Level of Service	C	C	C	A	B	A
Approach Delay (s)	23.0			7.9	14.3	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	335	474	89	610	142	834	1507	89	149	1753	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	263	353	499	94	642	149	878	1586	94	157	1845	282
RTOR Reduction (vph)	0	0	365	0	0	113	0	0	46	0	0	0
Lane Group Flow (vph)	263	353	134	94	642	36	878	1586	48	157	1845	282
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	10.8	20.3	20.3	7.7	18.2	18.2	33.0	57.9	57.9	14.1	39.0	120.0
Effective Green, g (s)	11.8	23.3	23.3	8.7	20.7	20.7	34.0	60.9	60.9	15.1	42.0	120.0
Actuated g/C Ratio	0.10	0.19	0.19	0.07	0.17	0.17	0.28	0.51	0.51	0.13	0.35	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	337	687	307	128	877	273	972	2580	803	222	2242	1583
v/s Ratio Prot	c0.08	0.10		0.05	c0.13		c0.26	0.31		0.09	c0.29	
v/s Ratio Perm			0.08			0.02			0.03			0.18
v/c Ratio	0.78	0.51	0.44	0.73	0.73	0.13	0.90	0.61	0.06	0.71	0.82	0.18
Uniform Delay, d1	52.8	43.3	42.6	54.5	47.0	42.1	41.4	21.2	15.0	50.3	35.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.3	1.1	1.7	17.0	3.9	0.5	11.5	1.1	0.1	8.1	2.7	0.2
Delay (s)	63.1	44.4	44.3	71.5	50.9	42.5	52.9	22.3	15.1	58.4	38.3	0.2
Level of Service	E	D	D	E	D	D	D	C	B	E	D	A
Approach Delay (s)		48.8			51.7			32.5			35.0	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	38.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	9	60	126	3	18	17	796	333	14	1966	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	2.6		2.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1583	1681	1689	1583	1770	4860		1770	5071	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1793	1583	1681	1689	1583	1770	4860		1770	5071	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	9	63	133	3	19	18	838	351	15	2069	39
RTOR Reduction (vph)	0	0	56	0	0	17	0	64	0	0	2	0
Lane Group Flow (vph)	0	41	7	68	68	2	18	1125	0	15	2106	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4						
Actuated Green, G (s)		7.5	7.5	8.4	8.4	8.4	0.9	40.1		0.8	39.0	
Effective Green, g (s)		8.5	8.5	9.4	9.4	9.4	1.9	43.5		1.8	42.4	
Actuated g/C Ratio		0.12	0.12	0.13	0.13	0.13	0.03	0.59		0.02	0.57	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	6.0		3.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2	0.2	2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)		206	182	214	215	201	45	2864		43	2913	
v/s Ratio Prot		c0.02		c0.04	0.04		c0.01	0.23		0.01	c0.42	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.20	0.04	0.32	0.32	0.01	0.40	0.39		0.35	0.72	
Uniform Delay, d1		29.6	29.0	29.3	29.3	28.1	35.4	8.1		35.4	11.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0	0.3	0.3	0.0	2.1	0.1		1.8	1.0	
Delay (s)		29.7	29.1	29.6	29.6	28.2	37.5	8.2		37.2	12.4	
Level of Service		C	C	C	C	C	D	A		D	B	
Approach Delay (s)		29.3			29.4			8.6			12.6	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	11.6
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	525	6	321	188	6	92	104	1135	59	35	1114	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	553	6	338	198	6	97	109	1195	62	37	1173	176
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	105
Lane Group Flow (vph)	282	277	338	198	6	97	109	1195	62	37	1173	71
Turn Type	Split	NA	Free	Split	NA	Free	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	16.1	16.1	76.4	9.9	9.9	76.4	5.0	28.4	76.4	4.0	27.4	27.4
Effective Green, g (s)	17.1	17.1	76.4	10.9	10.9	76.4	6.0	31.8	76.4	5.0	30.8	30.8
Actuated g/C Ratio	0.22	0.22	1.00	0.14	0.14	1.00	0.08	0.42	1.00	0.07	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	376	377	1583	252	265	1583	139	2116	1583	115	2049	638
v/s Ratio Prot	c0.17	0.16		c0.11	0.00		c0.06	c0.23		0.02	0.23	
v/s Ratio Perm			c0.21			0.06			0.04			0.04
v/c Ratio	0.75	0.73	0.21	0.79	0.02	0.06	0.78	0.56	0.04	0.32	0.57	0.11
Uniform Delay, d1	27.7	27.5	0.0	31.6	28.2	0.0	34.6	17.0	0.0	34.1	17.7	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	6.9	0.3	14.8	0.0	0.1	22.9	0.5	0.0	1.6	0.6	0.1
Delay (s)	35.4	34.4	0.3	46.4	28.2	0.1	57.4	17.5	0.0	35.7	18.3	14.4
Level of Service	D	C	A	D	C	A	E	B	A	D	B	B
Approach Delay (s)		21.9			31.1			19.9			18.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	76.4	Sum of lost time (s)	11.6
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	37	268	2456	205	279	2026
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	2.0	2.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	39	282	2585	216	294	2133
RTOR Reduction (vph)	0	0	0	29	0	0
Lane Group Flow (vph)	39	282	2585	187	294	2133
Turn Type	Prot	Free	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	7.4	93.9	54.3	54.3	17.2	76.5
Effective Green, g (s)	8.4	93.9	56.3	56.3	18.2	78.5
Actuated g/C Ratio	0.09	1.00	0.60	0.60	0.19	0.84
Clearance Time (s)	6.0		6.0	6.0	3.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	158	1583	3048	949	343	4251
v/s Ratio Prot	0.02		c0.51		c0.17	0.42
v/s Ratio Perm		c0.18		0.12		
v/c Ratio	0.25	0.18	0.85	0.20	0.86	0.50
Uniform Delay, d1	39.8	0.0	15.3	8.5	36.6	2.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.2	2.4	0.1	18.0	0.1
Delay (s)	40.6	0.2	17.7	8.7	54.6	2.3
Level of Service	D	A	B	A	D	A
Approach Delay (s)	5.2		17.0			8.6
Approach LOS	A		B			A

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	376	190	611	124	636	65	776	400	448	1210	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0	5.0	3.0	2.6	5.0	5.0	2.6	3.0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1562	3433	1863	1558	1770	3539	1570	3433	3539	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1562	3433	1863	1558	1770	3539	1570	3433	3539	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	396	200	643	131	669	68	817	421	472	1274	6
RTOR Reduction (vph)	0	0	0	0	0	99	0	0	60	0	0	0
Lane Group Flow (vph)	54	396	200	643	131	570	68	817	361	472	1274	6
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot	NA	Free	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Free
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			Free			8			2			Free
Actuated Green, G (s)	7.5	24.8	110.8	23.3	40.6	56.6	4.8	26.7	50.0	16.0	38.9	110.8
Effective Green, g (s)	8.5	24.8	110.8	23.3	40.6	56.6	5.8	30.1	50.0	16.0	42.3	110.8
Actuated g/C Ratio	0.08	0.22	1.00	0.21	0.37	0.51	0.05	0.27	0.45	0.14	0.38	1.00
Clearance Time (s)	4.0	4.0		5.0	5.0	5.0	4.0	6.0	5.0	5.0	6.0	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	3.9	3.0	3.0	3.9	
Lane Grp Cap (vph)	135	416	1562	721	682	866	92	961	708	495	1351	1548
v/s Ratio Prot	0.03	c0.21		c0.19	0.07	0.09	0.04	0.23	0.11	c0.14	c0.36	
v/s Ratio Perm			0.13			0.27			0.12			0.00
v/c Ratio	0.40	0.95	0.13	0.89	0.19	0.66	0.74	0.85	0.51	0.95	0.94	0.00
Uniform Delay, d1	48.7	42.4	0.0	42.5	23.9	20.0	51.8	38.2	21.7	47.0	33.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	31.7	0.2	13.3	0.1	1.8	23.2	7.5	0.6	28.8	13.3	0.0
Delay (s)	49.4	74.1	0.2	55.8	24.1	21.8	74.9	45.7	22.3	75.9	46.4	0.0
Level of Service	D	E	A	E	C	C	E	D	C	E	D	A
Approach Delay (s)		49.3			37.2			39.7			54.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	16.6
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	3	1	139	3	188	5	920	37	67	1966	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0		3.0	-0.4	3.0	4.0	0.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1688	1583	1770	1588		1770	3539	1583	1770	5085	
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.24	1.00	
Satd. Flow (perm)	1681	1688	1583	1770	1588		1770	3539	1583	443	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	3	1	146	3	198	5	968	39	71	2069	1
RTOR Reduction (vph)	0	0	1	0	71	0	0	0	18	0	0	0
Lane Group Flow (vph)	88	88	0	146	130	0	5	968	21	71	2070	0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Perm	NA	
Protected Phases	4	4		8	8		5	2			6	
Permitted Phases			4						2	6		
Actuated Green, G (s)	7.8	7.8	7.8	10.6	10.6		1.0	37.0	37.0	31.0	31.0	
Effective Green, g (s)	8.8	7.8	8.8	10.6	10.6		2.0	40.4	37.0	31.0	34.4	
Actuated g/C Ratio	0.13	0.12	0.13	0.16	0.16		0.03	0.60	0.55	0.46	0.51	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0		4.0	3.0	3.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	219	195	206	278	249		52	2121	869	203	2595	
v/s Ratio Prot	c0.05	0.05		c0.08	0.08		0.00	c0.27			c0.41	
v/s Ratio Perm			0.00						0.01	0.16		
v/c Ratio	0.40	0.45	0.00	0.53	0.52		0.10	0.46	0.02	0.35	0.80	
Uniform Delay, d1	26.9	27.8	25.5	26.1	26.1		31.8	7.4	6.9	11.7	13.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	1.7	0.0	1.8	2.0		0.8	0.2	0.0	1.0	1.8	
Delay (s)	28.1	29.5	25.5	27.9	28.1		32.6	7.6	7.0	12.8	15.4	
Level of Service	C	C	C	C	C		C	A	A	B	B	
Approach Delay (s)		28.8			28.0			7.7			15.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	12.6
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	383	138	404	1078	178	186	1529	189	256	1649	434
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1532	1770	5085	1534	3433	5085	1560	3433	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1532	1770	5085	1534	3433	5085	1560	3433	5085	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	152	403	145	425	1135	187	196	1609	199	269	1736	457
RTOR Reduction (vph)	0	0	121	0	0	105	0	0	0	0	0	0
Lane Group Flow (vph)	152	403	24	425	1135	82	196	1609	199	269	1736	457
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	8.7	16.8	16.8	30.8	38.9	38.9	8.4	41.9	120.0	11.1	44.3	120.0
Effective Green, g (s)	9.7	19.8	19.8	31.8	41.9	41.9	9.4	44.9	120.0	12.1	47.3	120.0
Actuated g/C Ratio	0.08	0.17	0.17	0.27	0.35	0.35	0.08	0.37	1.00	0.10	0.39	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	277	583	252	469	1775	535	268	1902	1560	346	2004	1560
v/s Ratio Prot	0.04	0.11		c0.24	c0.22		0.06	0.32		c0.08	c0.34	
v/s Ratio Perm			0.02			0.05			0.13			c0.29
v/c Ratio	0.55	0.69	0.09	0.91	0.64	0.15	0.73	0.85	0.13	0.78	0.87	0.29
Uniform Delay, d1	53.0	47.2	42.5	42.7	32.7	26.8	54.1	34.4	0.0	52.6	33.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	3.7	0.2	20.5	0.8	0.2	8.5	4.9	0.2	9.6	5.3	0.5
Delay (s)	54.2	50.9	42.7	63.1	33.5	27.0	62.6	39.2	0.2	62.3	38.8	0.5
Level of Service	D	D	D	E	C	C	E	D	A	E	D	A
Approach Delay (s)		49.9			40.0			37.6			34.2	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	23	193	71	12	35	315	1366	12	9	2190	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.96		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	1526		1787	1583	1770	5076		1770	5043	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1785	1526		1787	1583	1770	5076		1770	5043	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	157	24	203	75	13	37	332	1438	13	9	2305	96
RTOR Reduction (vph)	0	0	176	0	0	35	0	1	0	0	3	0
Lane Group Flow (vph)	0	181	27	0	88	2	332	1450	0	9	2398	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		13.7	13.7		5.0	5.0	24.0	81.4		0.6	59.0	
Effective Green, g (s)		16.0	16.0		7.3	7.3	25.0	84.4		1.6	62.0	
Actuated g/C Ratio		0.13	0.13		0.06	0.06	0.21	0.70		0.01	0.52	
Clearance Time (s)		5.3	5.3		4.0	4.0	3.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		238	203		108	96	368	3570		23	2605	
v/s Ratio Prot		c0.10			c0.05		c0.19	0.29		0.01	c0.48	
v/s Ratio Perm			0.02			0.00						
v/c Ratio		0.76	0.13		0.81	0.02	0.90	0.41		0.39	0.92	
Uniform Delay, d1		50.2	45.9		55.7	53.0	46.3	7.4		58.7	26.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		12.1	0.1		34.2	0.0	24.0	0.2		4.0	6.7	
Delay (s)		62.2	46.0		89.9	53.0	70.3	7.6		62.7	33.5	
Level of Service		E	D		F	D	E	A		E	C	
Approach Delay (s)		53.7			79.0			19.2			33.6	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	406	1475	96	796	1997	85	312	713	474	137	1528	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	6.0	5.7	4.0	6.0	6.0	4.0	4.0	6.4	4.0
Lane Util. Factor	0.97	0.91	1.00	0.94	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	427	1553	101	838	2102	89	328	751	499	144	1608	614
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	427	1553	101	838	2102	89	328	751	499	144	1608	614
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.3	42.3	120.0	19.0	48.3	120.0	9.0	28.7	120.0	8.3	25.6	120.0
Effective Green, g (s)	13.3	42.3	120.0	19.0	48.3	120.0	9.0	28.7	120.0	8.3	25.6	120.0
Actuated g/C Ratio	0.11	0.35	1.00	0.16	0.40	1.00	0.08	0.24	1.00	0.07	0.21	1.00
Clearance Time (s)	5.7	5.7		6.0	5.7		6.0	6.0		4.0	6.4	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	3.7	
Lane Grp Cap (vph)	380	1792	1583	790	2046	1583	257	1216	1583	237	1367	1583
v/s Ratio Prot	c0.12	0.31		0.17	c0.41		c0.10	0.15		0.04	c0.25	
v/s Ratio Perm			0.06			0.06			0.32			c0.39
v/c Ratio	1.12	0.87	0.06	1.06	1.03	0.06	1.28	0.62	0.32	0.61	1.18	0.39
Uniform Delay, d1	53.4	36.2	0.0	50.5	35.9	0.0	55.5	40.8	0.0	54.3	47.2	0.0
Progression Factor	1.00	1.00	1.00	0.85	0.56	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	84.1	5.0	0.1	44.5	24.1	0.0	151.0	1.1	0.5	3.0	87.3	0.7
Delay (s)	137.5	41.2	0.1	87.7	44.1	0.0	206.5	41.9	0.5	57.3	134.5	0.7
Level of Service	F	D	A	F	D	A	F	D	A	E	F	A
Approach Delay (s)		59.0			54.9			63.0			95.1	
Approach LOS		E			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	67.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.1
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1	25	28	1	19	30	1909	41	34	2148	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0	4.7	2.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.91	
Frt		0.93			0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1698			1712		1770	3539	1583	1770	5081	
Flt Permitted		0.88			0.88		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1533			1544		1770	3539	1583	1770	5081	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	1	26	29	1	20	32	2009	43	36	2261	14
RTOR Reduction (vph)	0	23	0	0	18	0	0	0	12	0	1	0
Lane Group Flow (vph)	0	30	0	0	32	0	32	2009	31	36	2274	0
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		6.5			6.5		1.5	48.5	48.5	1.5	47.5	
Effective Green, g (s)		7.5			7.5		2.5	51.2	49.5	2.5	50.2	
Actuated g/C Ratio		0.11			0.11		0.04	0.74	0.72	0.04	0.73	
Clearance Time (s)		4.0			4.0		4.0	5.7	5.7	3.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8	3.8	2.0	3.8	
Lane Grp Cap (vph)		166			167		63	2618	1132	63	3685	
v/s Ratio Prot							0.02	c0.57		c0.02	0.45	
v/s Ratio Perm		0.02			c0.02				0.02			
v/c Ratio		0.18			0.19		0.51	0.77	0.03	0.57	0.62	
Uniform Delay, d1		28.1			28.1		32.7	5.4	2.9	32.8	4.7	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5			0.6		2.3	1.5	0.0	7.6	0.3	
Delay (s)		28.6			28.7		35.1	6.9	2.9	40.4	5.1	
Level of Service		C			C		D	A	A	D	A	
Approach Delay (s)		28.6			28.7			7.2			5.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	72	154	137	346	105	387	2218	85	95	2073	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5069	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5069	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	91	76	162	144	364	111	407	2335	89	100	2182	42
RTOR Reduction (vph)	0	0	138	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	91	76	24	144	364	111	407	2335	89	100	2223	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	8.4	14.9	14.9	7.7	14.2	120.0	16.8	71.8	120.0	5.9	60.9	
Effective Green, g (s)	9.4	17.9	17.9	8.7	17.2	120.0	17.8	74.8	120.0	6.9	63.9	
Actuated g/C Ratio	0.08	0.15	0.15	0.07	0.14	1.00	0.15	0.62	1.00	0.06	0.53	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	138	527	230	248	507	1562	509	3169	1562	197	2699	
v/s Ratio Prot	c0.05	0.02		0.04	c0.10		c0.12	0.46		0.03	c0.44	
v/s Ratio Perm			0.02			c0.07			0.06			
v/c Ratio	0.66	0.14	0.11	0.58	0.72	0.07	0.80	0.74	0.06	0.51	0.82	
Uniform Delay, d1	53.7	44.4	44.1	53.9	49.1	0.0	49.4	15.7	0.0	54.9	23.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.4	0.2	0.3	2.2	5.1	0.1	8.0	1.6	0.1	0.8	2.2	
Delay (s)	62.1	44.6	44.4	56.1	54.2	0.1	57.4	17.3	0.1	55.7	25.6	
Level of Service	E	D	D	E	D	A	E	B	A	E	C	
Approach Delay (s)		49.3			44.9			22.5			26.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	518	69	106	466	93	318	103	1886	190	269	1792	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.4	3.4	3.0	2.5	3.2	3.0	2.5	3.2	3.2
Lane Util. Factor	0.86	0.86	1.00	0.86	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3044	3094	1583	3044	3107	1583	3335	4940	1538	3335	4940	1495
Flt Permitted	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3044	3094	1583	3044	3107	1583	3335	4940	1538	3335	4940	1495
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	545	73	112	491	98	335	108	1985	200	283	1886	172
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	77
Lane Group Flow (vph)	365	253	112	329	260	335	108	1985	200	283	1886	95
Confl. Peds. (#/hr)												10
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Split	NA	Free	Split	NA	Free	Prot	NA	Free	Prot	NA	Perm
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	18.4	18.4	120.0	17.8	17.8	120.0	21.0	50.7	120.0	14.5	44.2	44.2
Effective Green, g (s)	19.9	19.9	120.0	19.3	19.3	120.0	22.5	53.2	120.0	16.0	46.7	46.7
Actuated g/C Ratio	0.17	0.17	1.00	0.16	0.16	1.00	0.19	0.44	1.00	0.13	0.39	0.39
Clearance Time (s)	4.0	4.0		4.9	4.9		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.9	3.9		2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	504	513	1583	489	499	1583	625	2190	1538	444	1922	581
v/s Ratio Prot	c0.12	0.08		c0.11	0.08		0.03	c0.40		0.08	c0.38	
v/s Ratio Perm			0.07			0.21			0.13			0.06
v/c Ratio	0.72	0.49	0.07	0.67	0.52	0.21	0.17	0.91	0.13	0.64	0.98	0.16
Uniform Delay, d1	47.4	45.5	0.0	47.4	46.1	0.0	40.9	31.1	0.0	49.3	36.2	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.61	1.00	0.88	1.12	1.32
Incremental Delay, d2	5.1	0.7	0.1	3.9	1.2	0.3	0.0	2.5	0.1	0.2	3.2	0.1
Delay (s)	52.6	46.2	0.1	51.3	47.4	0.3	28.9	21.5	0.1	43.6	43.9	31.7
Level of Service	D	D	A	D	D	A	C	C	A	D	D	C
Approach Delay (s)		42.3			31.7			20.0			43.0	
Approach LOS		D			C			C			D	

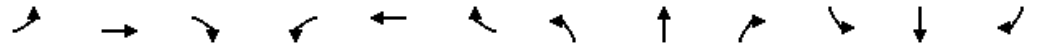
Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	0	87	5	1	6	170	1571	5	54	2092	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1788	1583	1770	3538		1770	3539	1583
Flt Permitted		0.95	1.00		0.85	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1588	1583	1770	3538		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	0	92	5	1	6	179	1654	5	57	2202	277
RTOR Reduction (vph)	0	0	82	0	0	6	0	0	0	0	0	37
Lane Group Flow (vph)	0	105	10	0	6	0	179	1659	0	57	2202	240
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4			3		5	2		1	6	
Permitted Phases			4	3		3						6
Actuated Green, G (s)		13.1	13.1		3.3	3.3	11.1	91.9		6.6	87.4	87.4
Effective Green, g (s)		14.1	14.1		4.3	4.3	14.1	93.9		7.6	90.4	90.4
Actuated g/C Ratio		0.11	0.11		0.03	0.03	0.11	0.70		0.06	0.68	0.68
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		186	166		51	50	186	2482		100	2391	1069
v/s Ratio Prot		c0.06					c0.10	0.47		0.03	c0.62	
v/s Ratio Perm			0.01		c0.00	0.00						0.15
v/c Ratio		0.56	0.06		0.12	0.00	0.96	0.67		0.57	0.92	0.22
Uniform Delay, d1		56.9	53.9		62.9	62.7	59.6	11.2		61.5	18.6	8.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.3	0.1		0.4	0.0	54.5	0.8		4.4	6.6	0.2
Delay (s)		59.3	53.9		63.3	62.7	114.1	12.0		65.9	25.2	8.5
Level of Service		E	D		E	E	F	B		E	C	A
Approach Delay (s)		56.8			63.0			21.9			24.3	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	133.8	Sum of lost time (s)	13.9
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

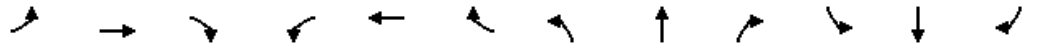
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	697	1815	1064	329	1875	670	657	850	78	828	987	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4	4.0	4.0	6.4	4.0	4.0	6.0	4.0	7.7	6.7	4.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.97	0.91	1.00	0.94	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	3433	5085	1583	4990	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	3433	5085	1583	4990	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	734	1911	1120	346	1974	705	692	895	82	872	1039	479
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	734	1911	1120	346	1974	705	692	895	82	872	1039	479
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	17.6	36.7	120.0	14.9	31.6	120.0	20.0	24.8	120.0	19.5	27.3	120.0
Effective Green, g (s)	17.6	36.7	120.0	14.9	31.6	120.0	20.0	24.8	120.0	19.5	27.3	120.0
Actuated g/C Ratio	0.15	0.31	1.00	0.12	0.26	1.00	0.17	0.21	1.00	0.16	0.23	1.00
Clearance Time (s)	6.4	6.4		4.0	6.4		4.0	6.0		7.7	6.7	
Vehicle Extension (s)	2.0	3.7		2.0	4.1		2.0	4.1		3.0	4.5	
Lane Grp Cap (vph)	503	1959	1583	426	1687	1583	572	1050	1583	810	1156	1583
v/s Ratio Prot	c0.21	0.30		0.10	c0.31		c0.20	0.18		0.17	c0.20	
v/s Ratio Perm			c0.71			0.45			0.05			0.30
v/c Ratio	1.46	0.98	0.71	0.81	1.17	0.45	1.21	0.85	0.05	1.08	0.90	0.30
Uniform Delay, d1	51.2	41.2	0.0	51.2	44.2	0.0	50.0	45.8	0.0	50.2	45.0	0.0
Progression Factor	0.51	0.38	1.00	0.90	0.61	1.00	1.00	1.00	1.00	0.58	0.96	1.00
Incremental Delay, d2	207.7	2.6	0.2	6.2	80.4	0.5	110.0	7.1	0.1	45.9	5.3	0.2
Delay (s)	234.0	18.3	0.2	52.3	107.3	0.5	160.0	53.0	0.1	75.3	48.5	0.2
Level of Service	F	B	A	D	F	A	F	D	A	E	D	A
Approach Delay (s)		55.0			76.1			94.7			48.6	
Approach LOS		D			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	65.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	7	201	14	16	40	219	1433	5	5	1544	617
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	3.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	0.85		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1592		1770	1863	1583	3433	3537		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1592		1770	1863	1583	3433	3537		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	314	7	212	15	17	42	231	1508	5	5	1625	649
RTOR Reduction (vph)	0	109	0	0	0	41	0	0	0	0	0	145
Lane Group Flow (vph)	314	110	0	15	17	1	231	1513	0	5	1625	504
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						6
Actuated Green, G (s)	15.0	15.0		1.7	1.7	1.7	6.1	53.1		0.7	46.7	46.7
Effective Green, g (s)	16.0	16.0		2.7	2.7	2.7	7.1	55.6		1.7	49.2	49.2
Actuated g/C Ratio	0.18	0.18		0.03	0.03	0.03	0.08	0.64		0.02	0.57	0.57
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		3.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0		2.0	2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	631	292		54	57	49	280	2260		34	2001	895
v/s Ratio Prot	c0.09	0.07		0.01	c0.01		c0.07	0.43		0.00	c0.46	
v/s Ratio Perm						0.00						0.32
v/c Ratio	0.50	0.38		0.28	0.30	0.03	0.82	0.67		0.15	0.81	0.56
Uniform Delay, d1	31.9	31.1		41.2	41.2	40.9	39.3	9.9		41.9	15.2	12.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.8		1.0	1.1	0.1	16.9	1.0		0.7	3.0	1.4
Delay (s)	32.5	31.9		42.2	42.3	41.0	56.2	10.9		42.7	18.2	13.4
Level of Service	C	C		D	D	D	E	B		D	B	B
Approach Delay (s)		32.3			41.5			16.9			16.9	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	304	14	27	25	11	55	45	921	0	71	1337	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.92		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1665			1688		1770	3539		1770	3473	
Flt Permitted	0.95	0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1665			1688		1770	3539		1770	3473	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	320	15	28	26	12	58	47	969	0	75	1407	200
RTOR Reduction (vph)	0	6	0	0	46	0	0	0	0	0	9	0
Lane Group Flow (vph)	182	175	0	0	50	0	47	969	0	75	1598	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	16.5	16.5			6.9		7.2	71.8		7.9	72.1	
Effective Green, g (s)	16.5	16.5			6.9		7.2	71.8		7.9	72.1	
Actuated g/C Ratio	0.14	0.14			0.06		0.06	0.60		0.07	0.60	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Vehicle Extension (s)	2.0	2.0			2.0		2.0	4.2		2.0	3.2	
Lane Grp Cap (vph)	231	228			97		106	2117		116	2086	
v/s Ratio Prot	c0.11	0.11			c0.03		0.03	c0.27		0.04	c0.46	
v/s Ratio Perm												
v/c Ratio	0.79	0.77			0.51		0.44	0.46		0.65	0.77	
Uniform Delay, d1	50.1	49.9			54.9		54.5	13.3		54.7	17.7	
Progression Factor	1.00	1.00			1.00		0.75	0.33		1.00	1.00	
Incremental Delay, d2	15.0	13.0			1.9		1.0	0.7		8.9	1.8	
Delay (s)	65.1	62.9			56.8		41.6	5.0		63.6	19.5	
Level of Service	E	E			E		D	A		E	B	
Approach Delay (s)		64.0			56.8			6.7			21.4	
Approach LOS		E			E			A			C	

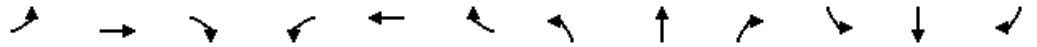
Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.3
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	786	743	832	460	1016	821
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	2.0
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	827	782	876	484	1069	864
RTOR Reduction (vph)	0	11	0	328	0	0
Lane Group Flow (vph)	827	771	876	156	1069	864
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	23.3	50.0	26.7	26.7	26.7	59.7
Effective Green, g (s)	24.3	54.6	29.0	29.0	29.0	60.7
Actuated g/C Ratio	0.27	0.61	0.32	0.32	0.32	0.67
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	3.0
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	926	990	1140	510	1106	2386
v/s Ratio Prot	c0.24	0.25	c0.25		c0.31	0.24
v/s Ratio Perm		0.24		0.10		
v/c Ratio	0.89	0.78	0.77	0.31	0.97	0.36
Uniform Delay, d1	31.6	13.2	27.5	22.9	30.0	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.7	3.6	3.4	0.5	19.2	0.4
Delay (s)	42.3	16.8	30.8	23.4	49.2	6.7
Level of Service	D	B	C	C	D	A
Approach Delay (s)	29.9		28.2			30.2
Approach LOS	C		C			C

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.7
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	20	128	130	7	48	130	789	20	25	1163	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1783	1583		1778	1583	1770	3526		1770	3522	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1783	1583		1778	1583	1770	3526		1770	3522	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	21	135	137	7	51	137	831	21	26	1224	40
RTOR Reduction (vph)	0	0	117	0	0	46	0	1	0	0	1	0
Lane Group Flow (vph)	0	189	18	0	144	5	137	851	0	26	1263	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		16.4	16.4		12.9	12.9	12.6	70.2		3.6	61.2	
Effective Green, g (s)		16.4	16.4		12.9	12.9	12.6	70.2		3.6	61.2	
Actuated g/C Ratio		0.14	0.14		0.11	0.11	0.10	0.59		0.03	0.51	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)		243	216		191	170	185	2062		53	1796	
v/s Ratio Prot		c0.11			c0.08		c0.08	0.24		0.01	c0.36	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.78	0.09		0.75	0.03	0.74	0.41		0.49	0.70	
Uniform Delay, d1		50.0	45.2		52.0	48.0	52.1	13.6		57.3	22.5	
Progression Factor		1.00	1.00		1.00	1.00	1.26	0.82		0.64	0.33	
Incremental Delay, d2		13.3	0.1		13.9	0.0	4.6	0.2		1.7	0.9	
Delay (s)		63.3	45.3		65.9	48.0	70.2	11.4		38.3	8.4	
Level of Service		E	D		E	D	E	B		D	A	
Approach Delay (s)		55.8			61.2			19.6			9.0	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	353	6	6	730	667	2	13	5	207	9	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1851	1583		1777	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1851	1583		1777	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	87	372	6	6	768	702	2	14	5	218	9	59
RTOR Reduction (vph)	0	0	3	0	0	413	0	0	5	0	0	45
Lane Group Flow (vph)	87	372	3	6	768	289	0	16	0	0	227	14
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	4.0	26.0	26.0	0.7	21.7	21.7		3.0	3.0		13.2	13.2
Effective Green, g (s)	5.0	29.0	29.0	1.7	24.7	24.7		4.0	4.0		14.2	14.2
Actuated g/C Ratio	0.08	0.48	0.48	0.03	0.41	0.41		0.07	0.07		0.24	0.24
Clearance Time (s)	4.0	6.0	6.0	3.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	147	1713	766	50	1459	652		123	105		421	375
v/s Ratio Prot	c0.05	0.11		0.00	c0.22			c0.01			c0.13	
v/s Ratio Perm			0.00			0.18			0.00			0.01
v/c Ratio	0.59	0.22	0.00	0.12	0.53	0.44		0.13	0.00		0.54	0.04
Uniform Delay, d1	26.5	8.9	8.0	28.4	13.2	12.7		26.3	26.1		20.0	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	4.2	0.1	0.0	0.4	0.4	0.6		0.2	0.0		0.7	0.0
Delay (s)	30.7	9.0	8.0	28.8	13.6	13.2		26.5	26.1		20.7	17.6
Level of Service	C	A	A	C	B	B		C	C		C	B
Approach Delay (s)		13.0			13.5			26.4			20.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	600	56	158	1585	0	68	0	59	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7	4.7	2.0	2.7			2.0	2.0			
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00			
Frt		1.00	0.85	1.00	1.00			1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3539	1583	1770	3539			1770	1583			
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (perm)		3539	1583	1770	3539			1770	1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	632	59	166	1668	0	72	0	62	0	0	0
RTOR Reduction (vph)	0	0	32	0	0	0	0	0	51	0	0	0
Lane Group Flow (vph)	0	632	27	166	1668	0	0	72	11	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm			
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2						3			
Actuated Green, G (s)		26.0	26.0	10.2	40.2			8.9	8.9			
Effective Green, g (s)		29.0	27.0	12.2	43.2			10.9	10.9			
Actuated g/C Ratio		0.49	0.46	0.21	0.73			0.19	0.19			
Clearance Time (s)		5.7	5.7	4.0	5.7			4.0	4.0			
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		1745	726	367	2600			328	293			
v/s Ratio Prot		0.18		0.09	c0.47			c0.04				
v/s Ratio Perm			0.02						0.01			
v/c Ratio		0.36	0.04	0.45	0.64			0.22	0.04			
Uniform Delay, d1		9.2	8.7	20.4	3.9			20.3	19.7			
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.1	0.0	0.9	0.5			0.3	0.1			
Delay (s)		9.3	8.8	21.3	4.5			20.7	19.7			
Level of Service		A	A	C	A			C	B			
Approach Delay (s)		9.3			6.0			20.2			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	8.7
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	368	1416	1424	113	55	697
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1478	1770	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	387	1491	1499	119	58	734
RTOR Reduction (vph)	0	0	0	61	0	159
Lane Group Flow (vph)	387	1491	1499	58	58	575
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	8.6	39.8	27.2	27.2	4.7	13.3
Effective Green, g (s)	9.6	42.8	30.2	30.2	5.7	15.3
Actuated g/C Ratio	0.16	0.69	0.49	0.49	0.09	0.25
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	534	2454	1732	723	163	826
v/s Ratio Prot	0.11	0.42	c0.42		0.03	c0.11
v/s Ratio Perm				0.04		0.10
v/c Ratio	0.72	0.61	0.87	0.08	0.36	0.70
Uniform Delay, d1	24.8	5.0	14.0	8.4	26.3	21.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.5	5.0	0.1	0.5	2.1
Delay (s)	28.9	5.5	19.0	8.4	26.8	23.2
Level of Service	C	A	B	A	C	C
Approach Delay (s)		10.3	18.2		23.4	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

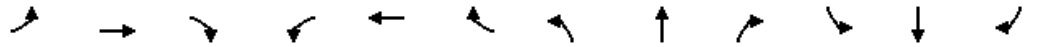
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	495	105	277	1103	50	243	225	19	60	84	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3446		1770	3516		1770	1841		1770	1758	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3446		1770	3516		1770	1841		1770	1758	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	521	111	292	1161	53	256	237	20	63	88	53
RTOR Reduction (vph)	0	20	0	0	3	0	0	4	0	0	25	0
Lane Group Flow (vph)	41	612	0	292	1211	0	256	253	0	63	116	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.3	22.8		14.2	33.7		12.2	20.9		6.2	14.9	
Effective Green, g (s)	4.3	25.5		15.2	36.4		13.2	23.2		7.2	17.2	
Actuated g/C Ratio	0.05	0.31		0.18	0.44		0.16	0.28		0.09	0.21	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	92	1062		325	1547		282	516		154	365	
v/s Ratio Prot	0.02	0.18		c0.17	c0.34		c0.14	c0.14		0.04	0.07	
v/s Ratio Perm												
v/c Ratio	0.45	0.58		0.90	0.78		0.91	0.49		0.41	0.32	
Uniform Delay, d1	38.0	24.1		33.0	19.8		34.2	24.8		35.7	27.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.9		25.3	2.8		29.9	1.0		0.6	0.7	
Delay (s)	39.3	24.9		58.3	22.6		64.1	25.8		36.4	28.4	
Level of Service	D	C		E	C		E	C		D	C	
Approach Delay (s)		25.8			29.5			44.9			30.9	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	11.6
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	536	10	88	1386	62	7	5	43	44	4	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	564	11	93	1459	65	7	5	45	46	4	21
RTOR Reduction (vph)	0	0	6	0	0	33	0	0	38	0	0	17
Lane Group Flow (vph)	33	564	5	93	1459	32	7	5	7	46	4	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.6	31.0	31.0	5.3	33.7	33.7	1.0	10.3	10.3	4.4	11.7	11.7
Effective Green, g (s)	2.6	31.0	31.0	5.3	33.7	33.7	1.0	10.3	10.3	4.4	11.7	11.7
Actuated g/C Ratio	0.04	0.45	0.45	0.08	0.49	0.49	0.01	0.15	0.15	0.06	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	66	1589	711	135	1728	773	25	278	236	112	315	268
v/s Ratio Prot	0.02	0.16		c0.05	c0.41		0.00	0.00		c0.03	0.00	
v/s Ratio Perm			0.00			0.02			c0.00			c0.00
v/c Ratio	0.50	0.35	0.01	0.69	0.84	0.04	0.28	0.02	0.03	0.41	0.01	0.01
Uniform Delay, d1	32.6	12.4	10.5	31.0	15.4	9.2	33.6	25.0	25.1	31.1	23.8	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	0.1	0.0	13.7	4.0	0.0	6.0	0.0	0.0	2.4	0.0	0.0
Delay (s)	38.4	12.6	10.5	44.7	19.3	9.2	39.7	25.1	25.1	33.5	23.9	23.9
Level of Service	D	B	B	D	B	A	D	C	C	C	C	C
Approach Delay (s)		13.9			20.4			26.9			30.1	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	655	38	102	1612	4	24	15	106	24	15	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3510		1770	3538			1808	1583		1808	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.84	1.00		0.84	1.00
Satd. Flow (perm)	1770	3510		1770	3538			1566	1583		1566	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	689	40	107	1697	4	25	16	112	25	16	25
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	94	0	0	21
Lane Group Flow (vph)	44	725	0	107	1701	0	0	41	18	0	41	4
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	3.3	36.1		6.2	39.0			9.3	9.3		9.3	9.3
Effective Green, g (s)	4.3	38.8		7.2	41.7			10.3	10.3		10.3	10.3
Actuated g/C Ratio	0.07	0.59		0.11	0.64			0.16	0.16		0.16	0.16
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	116	2085		195	2259			247	249		247	249
v/s Ratio Prot	0.02	0.21		c0.06	c0.48							
v/s Ratio Perm								c0.03	0.01		0.03	0.00
v/c Ratio	0.38	0.35		0.55	0.75			0.17	0.07		0.17	0.02
Uniform Delay, d1	29.2	6.8		27.5	8.2			23.8	23.4		23.8	23.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	0.1		1.7	1.5			0.1	0.0		0.1	0.0
Delay (s)	30.0	6.9		29.2	9.8			23.9	23.5		23.9	23.2
Level of Service	C	A		C	A			C	C		C	C
Approach Delay (s)		8.2			10.9			23.6			23.6	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	559	1554	30	112	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3529		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3529		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	588	1636	32	118	6
RTOR Reduction (vph)	0	0	1	0	0	5
Lane Group Flow (vph)	12	588	1667	0	118	1
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	1.0	45.8	40.8		8.2	8.2
Effective Green, g (s)	2.0	48.5	43.5		9.2	9.2
Actuated g/C Ratio	0.03	0.76	0.68		0.14	0.14
Clearance Time (s)	4.0	5.7	5.7		4.0	4.0
Vehicle Extension (s)	2.0	3.8	3.8		2.0	2.0
Lane Grp Cap (vph)	55	2694	2409		255	228
v/s Ratio Prot	0.01	c0.17	c0.47		c0.07	
v/s Ratio Perm						0.00
v/c Ratio	0.22	0.22	0.69		0.46	0.00
Uniform Delay, d1	30.1	2.2	6.1		25.0	23.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.1	0.9		0.5	0.0
Delay (s)	30.8	2.2	7.0		25.5	23.3
Level of Service	C	A	A		C	C
Approach Delay (s)		2.8	7.0		25.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	257	0	445	12	4	2	875	718	0	4	1016	809
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1770		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1770		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	271	0	468	13	4	2	921	756	0	4	1069	852
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	360
Lane Group Flow (vph)	135	136	468	13	4	0	921	756	0	4	1069	492
Turn Type	Split	NA	Free	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	11.2	11.2	90.0	4.2	4.2		26.7	55.5		1.4	32.2	32.2
Effective Green, g (s)	13.2	13.2	90.0	6.2	6.2		28.7	57.5		3.4	34.2	34.2
Actuated g/C Ratio	0.15	0.15	1.00	0.07	0.07		0.32	0.64		0.04	0.38	0.38
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	246	246	1478	121	121		1094	2261		66	1344	561
v/s Ratio Prot	0.08	c0.08		0.01	0.00		c0.27	0.21		0.00	0.30	
v/s Ratio Perm			c0.32									c0.33
v/c Ratio	0.55	0.55	0.32	0.11	0.03		0.84	0.33		0.06	0.80	0.88
Uniform Delay, d1	35.6	35.7	0.0	39.3	39.1		28.5	7.5		41.8	24.8	26.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.5	2.7	0.6	0.4	0.1		6.0	0.4		0.4	3.3	14.4
Delay (s)	38.1	38.3	0.6	39.7	39.2		34.5	7.9		42.1	28.1	40.4
Level of Service	D	D	A	D	D		C	A		D	C	D
Approach Delay (s)		14.4			39.5			22.5			33.6	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	383	302	25	207	974	150	35	626	137	192	663	685
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	2.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	403	318	26	218	1025	158	37	659	144	202	698	721
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	403	318	26	218	1025	158	37	659	144	202	698	721
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.0	29.1	85.3	8.7	26.8	85.3	4.7	20.8	85.3	8.0	24.4	85.3
Effective Green, g (s)	11.0	32.1	85.3	9.7	29.8	85.3	5.7	23.5	85.3	9.0	27.1	85.3
Actuated g/C Ratio	0.13	0.38	1.00	0.11	0.35	1.00	0.07	0.28	1.00	0.11	0.32	1.00
Clearance Time (s)	4.0	5.7		3.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	442	1331	1583	390	1236	1583	229	974	1583	362	1124	1583
v/s Ratio Prot	c0.12	0.09		0.06	c0.29		0.01	0.19		c0.06	c0.20	
v/s Ratio Perm			0.02			0.10			0.09			c0.46
v/c Ratio	0.91	0.24	0.02	0.56	0.83	0.10	0.16	0.68	0.09	0.56	0.62	0.46
Uniform Delay, d1	36.7	18.2	0.0	35.8	25.4	0.0	37.5	27.5	0.0	36.3	24.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.5	0.2	0.0	1.0	5.2	0.1	0.1	2.1	0.1	1.1	1.4	0.9
Delay (s)	59.2	18.4	0.0	36.8	30.6	0.1	37.7	29.6	0.1	37.3	26.1	0.9
Level of Service	E	B	A	D	C	A	D	C	A	D	C	A
Approach Delay (s)		39.8			28.1			24.9			16.3	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	85.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	638	550	81	592	181	487	682	57	162	638	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	218	672	579	85	623	191	513	718	60	171	672	335
RTOR Reduction (vph)	0	0	211	0	0	133	0	0	43	0	0	189
Lane Group Flow (vph)	218	672	368	85	623	58	513	718	17	171	672	146
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.2	22.7	22.7	6.1	20.2	20.2	10.2	20.5	20.5	8.2	18.5	18.5
Effective Green, g (s)	9.2	24.7	24.7	7.1	22.9	22.9	11.2	22.8	21.5	9.2	20.8	20.8
Actuated g/C Ratio	0.12	0.33	0.33	0.09	0.30	0.30	0.15	0.30	0.28	0.12	0.27	0.27
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	215	1154	516	166	1070	478	507	1531	449	431	1446	450
v/s Ratio Prot	c0.12	0.19		0.05	0.18		c0.15	c0.14		0.05	0.13	
v/s Ratio Perm			c0.23			0.04			0.01			0.09
v/c Ratio	1.01	0.58	0.71	0.51	0.58	0.12	1.01	0.47	0.04	0.40	0.46	0.32
Uniform Delay, d1	33.2	21.2	22.4	32.7	22.4	19.1	32.2	21.5	19.6	30.7	22.8	21.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	65.0	1.1	5.6	1.1	1.1	0.2	43.0	0.4	0.1	0.2	0.4	0.7
Delay (s)	98.3	22.3	28.0	33.8	23.4	19.3	75.2	21.9	19.7	30.9	23.2	22.5
Level of Service	F	C	C	C	C	B	E	C	B	C	C	C
Approach Delay (s)		35.9			23.5			43.0			24.1	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	11.9
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

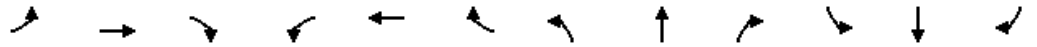
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	404	473	163	310	139	397	519	168	33	503	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4987	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4987	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	425	498	172	326	146	418	546	177	35	529	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	22	0
Lane Group Flow (vph)	46	425	498	172	326	146	418	546	177	35	585	0
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			
Actuated Green, G (s)	3.4	17.8	84.6	8.1	22.9	84.6	20.1	35.7	84.6	4.0	19.6	
Effective Green, g (s)	4.4	20.5	84.6	9.1	25.6	84.6	21.1	38.0	84.6	5.0	21.9	
Actuated g/C Ratio	0.05	0.24	1.00	0.11	0.30	1.00	0.25	0.45	1.00	0.06	0.26	
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	92	857	1583	190	1070	1583	441	1589	1583	104	1290	
v/s Ratio Prot	0.03	c0.12		c0.10	0.09		c0.24	0.15		0.02	c0.12	
v/s Ratio Perm			0.31			0.09			0.11			
v/c Ratio	0.50	0.50	0.31	0.91	0.30	0.09	0.95	0.34	0.11	0.34	0.45	
Uniform Delay, d1	39.0	27.6	0.0	37.3	22.7	0.0	31.2	15.2	0.0	38.2	26.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.7	0.5	38.8	0.3	0.1	29.4	0.3	0.1	0.7	0.5	
Delay (s)	40.6	28.3	0.5	76.2	23.0	0.1	60.6	15.4	0.1	38.9	26.8	
Level of Service	D	C	A	E	C	A	E	B	A	D	C	
Approach Delay (s)		14.6			32.0			29.6			27.5	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	822	131	133	642	141	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	865	138	140	676	148	76
RTOR Reduction (vph)	0	70	0	0	0	61
Lane Group Flow (vph)	865	68	140	676	148	15
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	20.6	20.6	4.5	30.8	8.5	8.5
Effective Green, g (s)	24.0	24.0	5.5	34.2	9.5	9.5
Actuated g/C Ratio	0.49	0.49	0.11	0.70	0.19	0.19
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1733	775	198	2470	343	306
v/s Ratio Prot	c0.24		c0.08	0.19	c0.08	
v/s Ratio Perm		0.04				0.01
v/c Ratio	0.50	0.09	0.71	0.27	0.43	0.05
Uniform Delay, d1	8.4	6.7	21.0	2.8	17.4	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	9.0	0.1	0.3	0.0
Delay (s)	8.8	6.7	30.0	2.9	17.7	16.1
Level of Service	A	A	C	A	B	B
Approach Delay (s)	8.5			7.5	17.2	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	736	29	141	758	124	102	17	488	248	6	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5056		1770	5085	1583		1786	1583	1681	1689	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5056		1770	5085	1583		1786	1583	1681	1689	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	775	31	148	798	131	107	18	514	261	6	92
RTOR Reduction (vph)	0	4	0	0	0	85	0	0	183	0	0	77
Lane Group Flow (vph)	73	802	0	148	798	46	0	125	331	133	134	15
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	6.1	24.4		8.2	26.5	26.5		19.9	19.9	12.6	12.6	12.6
Effective Green, g (s)	7.1	26.7		9.2	28.8	28.8		20.9	20.9	13.6	13.6	13.6
Actuated g/C Ratio	0.09	0.32		0.11	0.35	0.35		0.25	0.25	0.17	0.17	0.17
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	152	1638		197	1777	553		453	401	277	278	261
v/s Ratio Prot	0.04	c0.16		c0.08	0.16			0.07		0.08	c0.08	
v/s Ratio Perm						0.03			c0.21			0.01
v/c Ratio	0.48	0.49		0.75	0.45	0.08		0.28	0.83	0.48	0.48	0.06
Uniform Delay, d1	35.9	22.4		35.5	20.7	18.0		24.7	29.0	31.2	31.2	29.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.5		13.3	0.4	0.1		0.1	12.4	0.5	0.5	0.0
Delay (s)	36.8	22.8		48.8	21.0	18.1		24.8	41.4	31.7	31.7	29.0
Level of Service	D	C		D	C	B		C	D	C	C	C
Approach Delay (s)		24.0			24.5			38.2			31.0	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	72	277	706	49	364	745
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	292	743	52	383	784
RTOR Reduction (vph)	0	220	0	36	0	0
Lane Group Flow (vph)	76	72	743	16	383	784
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	11.8	11.8	14.3	14.3	16.3	34.6
Effective Green, g (s)	13.8	13.8	17.0	17.0	18.3	37.3
Actuated g/C Ratio	0.25	0.25	0.30	0.30	0.33	0.66
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	844	389	1540	479	577	3380
v/s Ratio Prot	0.02		c0.15		c0.22	0.15
v/s Ratio Perm		c0.05		0.01		
v/c Ratio	0.09	0.18	0.48	0.03	0.66	0.23
Uniform Delay, d1	16.3	16.7	16.0	13.8	16.3	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	0.4	0.0	2.2	0.1
Delay (s)	16.3	16.8	16.4	13.8	18.5	3.8
Level of Service	B	B	B	B	B	A
Approach Delay (s)	16.7		16.2			8.6
Approach LOS	B		B			A

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	7.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	23	99	154	13	392	96	781	45	290	916	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.91	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1795	1583		1808	1597	1770	3732		1832	5790	1639
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1795	1583		1808	1597	1770	3732		1832	5790	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	24	104	162	14	413	101	822	47	305	964	76
RTOR Reduction (vph)	0	0	94	0	0	93	0	5	0	0	0	47
Lane Group Flow (vph)	0	100	10	0	176	320	101	864	0	305	964	29
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		6.7	6.7		12.1	24.5	6.5	20.1		12.4	26.0	26.0
Effective Green, g (s)		6.7	6.7		12.1	26.5	6.5	22.4		13.4	28.3	26.0
Actuated g/C Ratio		0.10	0.10		0.18	0.39	0.09	0.33		0.20	0.41	0.38
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		175	154		318	686	167	1218		357	2388	621
v/s Ratio Prot		c0.06			c0.10	0.09	0.06	c0.23		c0.17	0.17	
v/s Ratio Perm			0.01			0.11						0.02
v/c Ratio		0.57	0.07		0.55	0.47	0.60	0.71		0.85	0.40	0.05
Uniform Delay, d1		29.6	28.1		25.8	15.8	29.8	20.2		26.7	14.2	13.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.8	0.1		1.2	0.2	4.2	2.5		17.1	0.2	0.1
Delay (s)		32.4	28.2		27.0	15.9	34.0	22.7		43.8	14.4	13.5
Level of Service		C	C		C	B	C	C		D	B	B
Approach Delay (s)		30.2			19.2			23.9			21.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	539	17	14	259	8	14	2	15	7	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	3523		1770	3524			1702			1708	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (perm)	1770	3523		1770	3524			1702			1708	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	567	18	15	273	8	15	2	16	7	0	5
RTOR Reduction (vph)	0	2	0	0	2	0	0	14	0	0	12	0
Lane Group Flow (vph)	6	583	0	15	279	0	0	19	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.8	25.4		0.6	25.2			4.2			0.9	
Effective Green, g (s)	1.8	28.1		1.6	27.9			5.2			1.9	
Actuated g/C Ratio	0.04	0.58		0.03	0.57			0.11			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	65	2028		58	2014			181			66	
v/s Ratio Prot	0.00	c0.17		c0.01	0.08			c0.01			c0.00	
v/s Ratio Perm												
v/c Ratio	0.09	0.29		0.26	0.14			0.10			0.01	
Uniform Delay, d1	22.7	5.3		23.0	4.9			19.7			22.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.1		0.9	0.1			0.1			0.0	
Delay (s)	22.9	5.4		23.9	4.9			19.8			22.6	
Level of Service	C	A		C	A			B			C	
Approach Delay (s)		5.6			5.9			19.8			22.6	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	415	6	2	680	77	2	0	2	139	0	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98			0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3532		1770	3485			1695		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)	1770	3532		1770	3485			1695		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	107	437	6	2	716	81	2	0	2	146	0	223
RTOR Reduction (vph)	0	1	0	0	9	0	0	4	0	0	176	0
Lane Group Flow (vph)	107	442	0	2	788	0	0	0	0	146	47	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	6.8	27.7		0.9	21.8			1.0		11.4	11.4	
Effective Green, g (s)	7.8	30.4		1.9	24.5			2.0		12.4	12.4	
Actuated g/C Ratio	0.13	0.52		0.03	0.42			0.03		0.21	0.21	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	235	1829		57	1454			57		373	334	
v/s Ratio Prot	c0.06	0.13		0.00	c0.23			c0.00		c0.08	0.03	
v/s Ratio Perm												
v/c Ratio	0.46	0.24		0.04	0.54			0.00		0.39	0.14	
Uniform Delay, d1	23.5	7.8		27.5	12.9			27.4		19.9	18.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		0.1	0.5			0.0		0.2	0.1	
Delay (s)	24.0	7.9		27.6	13.4			27.4		20.2	18.9	
Level of Service	C	A		C	B			C		C	B	
Approach Delay (s)		11.0			13.4			27.4			19.4	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

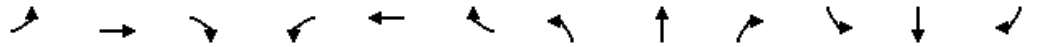
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	293	527	534	648	503	202	593	1320	568	127	1008	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-5%			0%	
Total Lost time (s)	4.0	5.7	5.7	4.0	5.3	5.3	5.7	5.7	4.0	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	308	555	562	682	529	213	624	1389	598	134	1061	184
RTOR Reduction (vph)	0	0	294	0	0	123	0	0	26	0	0	140
Lane Group Flow (vph)	308	555	268	682	529	90	624	1389	572	134	1061	44
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.2	23.2	23.2	24.9	34.3	34.3	22.3	44.3	69.2	8.2	28.5	28.5
Effective Green, g (s)	14.2	23.2	23.2	24.9	34.3	34.3	22.3	44.3	69.2	8.2	28.5	28.5
Actuated g/C Ratio	0.12	0.19	0.19	0.21	0.29	0.29	0.19	0.37	0.58	0.07	0.24	0.24
Clearance Time (s)	4.0	5.7	5.7	4.0	5.3	5.3	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	4.3	4.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	406	684	306	712	1011	452	653	1924	935	234	1207	375
v/s Ratio Prot	0.09	0.16		c0.20	0.15		c0.18	0.27	0.13	0.04	c0.21	
v/s Ratio Perm			c0.17			0.06			0.23			0.03
v/c Ratio	0.76	0.81	0.88	0.96	0.52	0.20	0.96	0.72	0.61	0.57	0.88	0.12
Uniform Delay, d1	51.2	46.3	47.0	47.0	36.0	32.5	48.4	32.6	16.6	54.2	44.1	35.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.66	0.84	1.00	1.00	1.00
Incremental Delay, d2	7.1	7.6	23.9	23.4	0.7	0.3	21.6	1.3	0.7	2.1	9.3	0.6
Delay (s)	58.3	53.9	70.9	70.4	36.7	32.8	57.8	22.8	14.6	56.3	53.4	36.5
Level of Service	E	D	E	E	D	C	E	C	B	E	D	D
Approach Delay (s)		61.5			52.3			29.3			51.4	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	45.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.1
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	598	403	968	986	52	585	1137	533	62	1001	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.94	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	4990	3513		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	4990	3513		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	103	629	424	1019	1038	55	616	1197	561	65	1054	57
RTOR Reduction (vph)	0	0	225	0	3	0	0	0	300	0	0	40
Lane Group Flow (vph)	103	629	199	1019	1090	0	616	1197	261	65	1054	17
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	10.0	21.5	21.5	24.8	36.0		21.8	47.4	47.4	6.3	31.9	31.9
Effective Green, g (s)	11.0	24.0	24.0	25.8	38.5		22.8	50.8	50.8	7.3	35.3	35.3
Actuated g/C Ratio	0.09	0.20	0.20	0.22	0.32		0.19	0.42	0.42	0.06	0.29	0.29
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	315	709	317	1075	1129		653	2158	671	209	1499	466
v/s Ratio Prot	0.03	0.18		c0.20	c0.31		c0.18	0.24		0.02	c0.21	
v/s Ratio Perm			0.13						0.16			0.01
v/c Ratio	0.33	0.89	0.63	0.95	0.97		0.94	0.55	0.39	0.31	0.70	0.04
Uniform Delay, d1	50.9	46.5	43.8	46.3	39.9		47.8	25.9	23.8	53.8	37.5	30.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	13.5	4.9	16.1	18.9		22.0	0.5	0.7	0.3	1.8	0.1
Delay (s)	51.1	60.0	48.7	62.4	58.9		69.8	26.4	24.5	54.1	39.4	30.1
Level of Service	D	E	D	E	E		E	C	C	D	D	C
Approach Delay (s)		55.1			60.6			37.2			39.7	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	47.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	119.7	Sum of lost time (s)	12.1
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	2158	30	93	2376	95	328	55	25	108	10	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	2272	32	98	2501	100	345	58	26	114	11	14
RTOR Reduction (vph)	0	0	15	0	0	38	0	0	22	0	0	13
Lane Group Flow (vph)	11	2272	17	98	2501	62	345	58	4	114	11	1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.2	82.0	82.0	12.4	93.2	93.2	31.3	20.9	20.9	17.0	5.7	5.7
Effective Green, g (s)	1.2	82.0	82.0	12.4	93.2	93.2	31.3	20.9	20.9	17.0	5.7	5.7
Actuated g/C Ratio	0.01	0.55	0.55	0.08	0.62	0.62	0.21	0.14	0.14	0.11	0.04	0.04
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.5	2.5	2.0	3.1	3.1
Lane Grp Cap (vph)	14	2779	865	146	3159	983	369	259	220	200	70	60
v/s Ratio Prot	0.01	c0.45		0.06	c0.49		c0.19	c0.03		0.06	0.01	
v/s Ratio Perm			0.01			0.04			0.00			0.00
v/c Ratio	0.79	0.82	0.02	0.67	0.79	0.06	0.93	0.22	0.02	0.57	0.16	0.01
Uniform Delay, d1	74.3	27.9	15.6	66.8	21.2	11.2	58.3	57.3	55.7	63.0	69.8	69.4
Progression Factor	1.00	1.00	1.00	0.78	0.70	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	123.8	2.8	0.0	0.9	0.1	0.0	30.2	0.3	0.0	2.2	1.1	0.1
Delay (s)	198.1	30.7	15.6	53.3	14.9	10.6	88.5	57.7	55.7	65.3	70.9	69.5
Level of Service	F	C	B	D	B	B	F	E	E	E	E	E
Approach Delay (s)		31.3			16.2			82.4			66.1	
Approach LOS		C			B			F			E	

Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	12	35	277	26	71	88	1419	194	98	1015	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	1490		1593	1492		1593	4577	1425	1593	3185	1425
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1593	1490		1593	1492		1593	4577	1425	1593	3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	13	37	292	27	75	93	1494	204	103	1068	1
RTOR Reduction (vph)	0	33	0	0	54	0	0	0	107	0	0	1
Lane Group Flow (vph)	6	17	0	292	48	0	93	1494	97	103	1068	0
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	0.6	8.1		18.7	26.2		9.5	44.6	44.6	10.6	44.7	44.7
Effective Green, g (s)	1.6	9.6		19.7	27.7		10.5	47.6	47.6	11.6	47.7	47.7
Actuated g/C Ratio	0.02	0.10		0.20	0.28		0.10	0.48	0.48	0.12	0.48	0.48
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	25	143		313	413		167	2178	678	184	1519	679
v/s Ratio Prot	0.00	0.01		c0.18	c0.03		0.06	0.33		c0.06	c0.34	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.24	0.12		0.93	0.12		0.56	0.69	0.14	0.56	0.70	0.00
Uniform Delay, d1	48.6	41.3		39.5	27.0		42.5	20.4	14.7	41.8	20.6	13.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.3		33.3	0.1		2.3	1.8	0.4	2.1	1.7	0.0
Delay (s)	50.4	41.6		72.8	27.1		44.8	22.2	15.2	43.9	22.3	13.7
Level of Service	D	D		E	C		D	C	B	D	C	B
Approach Delay (s)		42.6			60.9			22.5			24.2	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	604	13	256	1168	81	13	151	189	13	245	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	3.0	4.7	4.7	4.3	4.3	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	636	14	269	1229	85	14	159	199	14	258	120
RTOR Reduction (vph)	0	0	10	0	0	46	0	0	154	0	0	93
Lane Group Flow (vph)	56	636	4	269	1229	39	14	159	45	14	258	27
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	20.2	20.2	15.0	31.2	31.2	1.6	15.2	15.2	1.6	15.2	15.2
Effective Green, g (s)	5.0	21.2	21.2	16.0	32.2	32.2	2.6	16.2	16.2	2.6	16.2	16.2
Actuated g/C Ratio	0.07	0.30	0.30	0.23	0.45	0.45	0.04	0.23	0.23	0.04	0.23	0.23
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	5.3	5.3	5.3	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	124	1056	472	398	1605	717	64	425	361	64	425	361
v/s Ratio Prot	0.03	0.18		c0.15	c0.35		c0.01	0.09		0.01	c0.14	
v/s Ratio Perm			0.00			0.02			0.03			0.02
v/c Ratio	0.45	0.60	0.01	0.68	0.77	0.05	0.22	0.37	0.13	0.22	0.61	0.08
Uniform Delay, d1	31.7	21.3	17.5	25.1	16.2	10.9	33.2	23.1	21.8	33.2	24.5	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	1.3	0.0	3.6	2.5	0.1	0.6	0.2	0.1	0.6	1.7	0.0
Delay (s)	32.6	22.6	17.5	28.7	18.8	10.9	33.8	23.3	21.8	33.8	26.2	21.6
Level of Service	C	C	B	C	B	B	C	C	C	C	C	C
Approach Delay (s)		23.3			20.0			22.9			25.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	44	1323	2044	1	34	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	5.7	3.0	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1517	1770	1543
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1517	1770	1543
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	1393	2152	1	36	38
RTOR Reduction (vph)	0	0	0	0	0	34
Lane Group Flow (vph)	46	1393	2152	1	36	4
Confl. Peds. (#/hr)				10		10
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.1	73.2	65.1	65.1	9.0	9.0
Effective Green, g (s)	5.1	75.9	67.8	66.1	10.0	10.0
Actuated g/C Ratio	0.05	0.82	0.73	0.71	0.11	0.11
Clearance Time (s)	4.0	6.7	6.7	6.7	4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	4.3	2.0	2.0
Lane Grp Cap (vph)	97	2891	2582	1079	190	166
v/s Ratio Prot	0.03	c0.39	c0.61		c0.02	
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.47	0.48	0.83	0.00	0.19	0.02
Uniform Delay, d1	42.6	2.6	8.7	3.9	37.8	37.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.2	2.6	0.0	0.2	0.0
Delay (s)	43.9	2.8	11.3	3.9	37.9	37.1
Level of Service	D	A	B	A	D	D
Approach Delay (s)		4.1	11.3		37.5	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	92.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

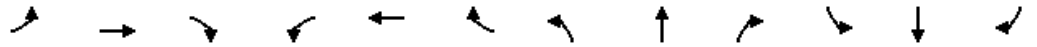
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	891	13	96	1380	56	20	18	16	33	33	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	5.7	4.0	4.7	4.7	4.9	4.9	4.9	3.9	4.9	3.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	938	14	101	1453	59	21	19	17	35	35	36
RTOR Reduction (vph)	0	0	7	0	0	24	0	0	16	0	0	32
Lane Group Flow (vph)	17	938	7	101	1453	35	21	19	1	35	35	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	0.6	38.6	38.6	6.3	44.3	44.3	5.1	5.1	5.1	6.6	6.6	6.6
Effective Green, g (s)	1.6	39.6	38.6	6.3	45.3	45.3	5.1	5.1	5.1	7.6	6.6	7.6
Actuated g/C Ratio	0.02	0.52	0.51	0.08	0.60	0.60	0.07	0.07	0.07	0.10	0.09	0.10
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.9	4.9	4.9	4.9	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	37	1841	802	146	2106	942	118	124	106	176	161	158
v/s Ratio Prot	0.01	0.27		c0.06	c0.41		c0.01	0.01		c0.02	0.02	
v/s Ratio Perm			0.00			0.02			0.00			0.00
v/c Ratio	0.46	0.51	0.01	0.69	0.69	0.04	0.18	0.15	0.01	0.20	0.22	0.02
Uniform Delay, d1	36.8	11.9	9.3	34.0	10.6	6.4	33.5	33.5	33.1	31.5	32.3	30.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.4	0.0	10.8	1.1	0.0	0.3	0.2	0.0	0.2	0.2	0.0
Delay (s)	40.1	12.3	9.3	44.8	11.7	6.4	33.8	33.7	33.2	31.7	32.6	30.9
Level of Service	D	B	A	D	B	A	C	C	C	C	C	C
Approach Delay (s)		12.7			13.6			33.6			31.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	18.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	1227	2014	21	47	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.98	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3534		1755	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3534		1755	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1292	2120	22	49	7
RTOR Reduction (vph)	0	0	0	0	6	0
Lane Group Flow (vph)	16	1292	2142	0	50	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.2	66.8	61.6		7.0	
Effective Green, g (s)	2.2	69.5	64.3		8.0	
Actuated g/C Ratio	0.03	0.83	0.77		0.10	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	46	2945	2721		168	
v/s Ratio Prot	0.01	c0.37	c0.61		c0.03	
v/s Ratio Perm						
v/c Ratio	0.35	0.44	0.79		0.30	
Uniform Delay, d1	39.9	1.8	5.6		35.1	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.7	0.2	1.8		0.4	
Delay (s)	41.6	2.0	7.4		35.5	
Level of Service	D	A	A		D	
Approach Delay (s)		2.5	7.4		35.5	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	1299	798	953	1722	253	961	1297	1190	285	1105	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.7	3.0	2.0	4.6	3.0	4.7	-0.4	3.0
Lane Util. Factor	0.94	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4990	3539	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4990	3539	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	1367	840	1003	1813	266	1012	1365	1253	300	1163	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	65	1367	840	1003	1813	266	1012	1365	1253	300	1163	24
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	23.2	51.0	150.0	10.0	38.1	150.0	39.0	51.0	150.0	14.3	34.0	150.0
Effective Green, g (s)	24.2	54.0	150.0	11.0	41.1	150.0	40.0	54.4	150.0	15.3	37.4	150.0
Actuated g/C Ratio	0.16	0.36	1.00	0.07	0.27	1.00	0.27	0.36	1.00	0.10	0.25	1.00
Clearance Time (s)	4.0	6.0		4.0	5.7		3.0	8.0		5.7	3.0	
Vehicle Extension (s)	2.0	4.1		3.0	4.5		4.1	4.1		4.1	4.1	
Lane Grp Cap (vph)	805	1274	1583	251	1393	1583	915	1844	1583	350	1267	1583
v/s Ratio Prot	0.01	c0.39		c0.29	c0.36		c0.29	0.27		0.09	c0.23	
v/s Ratio Perm			0.53			0.17			0.79			0.02
v/c Ratio	0.08	1.07	0.53	4.00	1.30	0.17	1.11	0.74	0.79	0.86	0.92	0.02
Uniform Delay, d1	53.4	48.0	0.0	69.5	54.4	0.0	55.0	41.6	0.0	66.3	54.8	0.0
Progression Factor	0.68	0.63	1.00	1.00	1.00	1.00	0.73	0.77	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	42.9	0.8	1357.7	141.0	0.2	58.7	1.2	2.8	19.0	10.8	0.0
Delay (s)	36.1	73.1	0.8	1427.2	195.5	0.2	98.6	33.2	2.8	85.2	65.6	0.0
Level of Service	D	E	A	F	F	A	F	C	A	F	E	A
Approach Delay (s)		45.3			579.5			40.9			68.5	
Approach LOS		D			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	204.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	125.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	14	1170	1747	242	115	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	1232	1839	255	121	8
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	15	1232	1839	255	121	8
Turn Type	Prot	NA	NA	Free	Prot	Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.3	55.7	50.7	75.7	10.0	75.7
Effective Green, g (s)	2.3	58.7	53.7	75.7	11.5	75.7
Actuated g/C Ratio	0.03	0.78	0.71	1.00	0.15	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	53	2744	2510	1583	268	1583
v/s Ratio Prot	0.01	c0.35	c0.52		c0.07	
v/s Ratio Perm				0.16		0.01
v/c Ratio	0.28	0.45	0.73	0.16	0.45	0.01
Uniform Delay, d1	35.9	2.9	6.7	0.0	29.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.2	1.3	0.2	0.4	0.0
Delay (s)	37.0	3.1	7.9	0.2	29.7	0.0
Level of Service	D	A	A	A	C	A
Approach Delay (s)		3.5	7.0		27.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	8.2
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	651	6	449	245	25	301	395	2402	40	174	2165	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	2.0	3.0	3.0	3.0	3.0	2.6		9.0	2.6	2.6
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.86		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	6392		3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	6392		3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	685	6	473	258	26	317	416	2528	42	183	2279	309
RTOR Reduction (vph)	0	0	188	0	0	173	0	2	0	0	0	119
Lane Group Flow (vph)	685	6	285	258	26	144	416	2568	0	183	2279	190
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8						6
Actuated Green, G (s)	22.0	22.0	22.0	14.2	14.2	14.2	13.0	50.8		7.0	51.8	51.8
Effective Green, g (s)	23.0	24.0	24.0	16.2	16.2	16.2	14.0	54.2		9.0	55.2	55.2
Actuated g/C Ratio	0.19	0.20	0.20	0.13	0.13	0.13	0.12	0.45		0.08	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	6.0		11.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	657	372	316	463	251	213	400	2887		257	2339	728
v/s Ratio Prot	c0.20	0.00		0.08	0.01		c0.12	0.40		0.05	c0.45	
v/s Ratio Perm			0.18			c0.09						0.12
v/c Ratio	1.04	0.02	0.90	0.56	0.10	0.68	1.04	0.89		0.71	0.97	0.26
Uniform Delay, d1	48.5	38.5	46.9	48.5	45.5	49.4	53.0	30.2		54.2	31.7	19.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.92	0.78	0.65
Incremental Delay, d2	46.7	0.0	27.2	1.5	0.2	8.2	55.8	4.6		7.0	11.0	0.1
Delay (s)	95.2	38.5	74.1	50.0	45.7	57.6	108.8	34.8		56.8	35.8	13.1
Level of Service	F	D	E	D	D	E	F	C		E	D	B
Approach Delay (s)		86.3			53.8			45.1			34.7	
Approach LOS		F			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	48.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	1724	119	520	2111	78	274	662	298	212	1236	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0	3.4	3.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	156	1815	125	547	2222	82	288	697	314	223	1301	332
RTOR Reduction (vph)	0	0	77	0	0	0	0	0	0	0	0	130
Lane Group Flow (vph)	156	1815	48	547	2222	82	288	697	314	223	1301	202
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			Free			6
Actuated Green, G (s)	8.4	43.0	43.0	16.0	52.6	120.0	10.0	29.6	120.0	9.0	28.6	28.6
Effective Green, g (s)	9.4	46.0	46.0	19.4	56.0	120.0	11.0	33.0	120.0	10.0	31.6	31.6
Actuated g/C Ratio	0.08	0.38	0.38	0.16	0.47	1.00	0.09	0.28	1.00	0.08	0.26	0.26
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1		2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	268	1949	606	555	2990	1583	314	973	1583	286	1339	416
v/s Ratio Prot	0.05	c0.36		c0.16	0.35		c0.08	0.20		0.06	c0.26	
v/s Ratio Perm			0.03			0.05			0.20			0.13
v/c Ratio	0.58	0.93	0.08	0.99	0.74	0.05	0.92	0.72	0.20	0.78	0.97	0.49
Uniform Delay, d1	53.4	35.5	23.5	50.2	26.1	0.0	54.0	39.3	0.0	53.9	43.8	37.3
Progression Factor	1.40	0.37	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	6.9	0.2	34.1	1.7	0.1	29.6	2.8	0.3	11.6	18.2	1.4
Delay (s)	76.3	20.0	2.2	84.3	27.8	0.1	83.7	42.1	0.3	65.5	62.0	38.8
Level of Service	E	C	A	F	C	A	F	D	A	E	E	D
Approach Delay (s)		23.2			37.9			41.2			58.3	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1779	229	180	2865	6	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	1.7	1.7
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4969		1770	5085	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4969		1770	5085	1770	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1873	241	189	3016	6	213
RTOR Reduction (vph)	9	0	0	0	0	194
Lane Group Flow (vph)	2105	0	189	3016	6	19
Confl. Peds. (#/hr)		10				10
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	81.2		16.7	101.9	9.4	9.4
Effective Green, g (s)	83.2		16.7	103.9	10.7	10.7
Actuated g/C Ratio	0.69		0.14	0.87	0.09	0.09
Clearance Time (s)	5.7		4.0	5.7	3.0	3.0
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	3445		246	4402	157	137
v/s Ratio Prot	0.42		c0.11	c0.59	0.00	
v/s Ratio Perm						c0.01
v/c Ratio	0.61		0.77	0.69	0.04	0.14
Uniform Delay, d1	9.8		49.8	2.7	49.9	50.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		12.2	0.9	0.0	0.2
Delay (s)	10.6		62.0	3.5	50.0	50.6
Level of Service	B		E	A	D	D
Approach Delay (s)	10.6			7.0	50.6	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	1035	152	724	1618	297	248	665	586	385	652	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	2.0	2.7	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	1089	160	762	1703	313	261	700	617	405	686	259
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	77	1089	160	762	1703	313	261	700	617	405	686	259
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	4.8	28.5	120.0	31.2	54.9	120.0	11.7	25.9	120.0	16.0	29.2	120.0
Effective Green, g (s)	5.8	31.5	120.0	32.2	57.9	120.0	12.7	28.9	120.0	17.0	32.2	120.0
Actuated g/C Ratio	0.05	0.26	1.00	0.27	0.48	1.00	0.11	0.24	1.00	0.14	0.27	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		3.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	149	1201	1400	829	2208	1400	327	767	1400	437	854	1400
v/s Ratio Prot	0.02	c0.24		c0.25	0.37		0.08	c0.22		c0.13	0.22	
v/s Ratio Perm			0.11			0.22			0.44			0.19
v/c Ratio	0.52	0.91	0.11	0.92	0.77	0.22	0.80	0.91	0.44	0.93	0.80	0.18
Uniform Delay, d1	55.7	42.8	0.0	42.6	25.6	0.0	52.4	44.3	0.0	50.9	40.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	11.4	0.2	14.7	1.9	0.4	11.9	15.6	1.0	25.3	6.1	0.3
Delay (s)	57.0	54.3	0.2	57.4	27.5	0.4	64.3	60.0	1.0	76.1	47.1	0.3
Level of Service	E	D	A	E	C	A	E	E	A	E	D	A
Approach Delay (s)		47.9			32.7			37.6			46.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

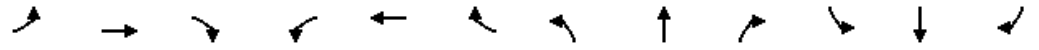
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2	1	53	5	55	1	902	27	95	1559	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1583		1781	1583	1770	3524		1770	3537	
Flt Permitted		0.86	1.00		0.76	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1596	1583		1417	1583	1770	3524		1770	3537	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	2	1	56	5	58	1	949	28	100	1641	6
RTOR Reduction (vph)	0	0	1	0	0	50	0	2	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	61	8	1	975	0	100	1647	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4		4						
Actuated Green, G (s)		12.1	12.1		12.1	12.1	0.6	56.0		8.2	63.6	
Effective Green, g (s)		13.1	13.1		13.1	13.1	1.6	59.0		9.2	66.6	
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.02	0.66		0.10	0.74	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	4.3		3.0	4.3	
Lane Grp Cap (vph)		232	230		206	230	31	2310		180	2617	
v/s Ratio Prot							0.00	c0.28		0.06	c0.47	
v/s Ratio Perm		0.01	0.00		c0.04	0.01						
v/c Ratio		0.04	0.00		0.30	0.04	0.03	0.42		0.56	0.63	
Uniform Delay, d1		33.0	32.9		34.3	33.0	43.4	7.4		38.5	5.7	
Progression Factor		1.00	1.00		1.00	1.00	0.83	0.11		1.00	1.00	
Incremental Delay, d2		0.1	0.0		0.8	0.1	0.1	0.2		3.7	1.2	
Delay (s)		33.1	32.9		35.1	33.1	36.2	1.0		42.1	6.9	
Level of Service		C	C		D	C	D	A		D	A	
Approach Delay (s)		33.1			34.1			1.0			8.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	6	100	867	62	126	1490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3504		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3504		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	105	913	65	133	1568
RTOR Reduction (vph)	0	92	5	0	0	0
Lane Group Flow (vph)	6	13	973	0	133	1568
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	9.8	9.8	47.8		18.7	70.5
Effective Green, g (s)	10.8	10.8	50.8		19.7	73.5
Actuated g/C Ratio	0.12	0.12	0.56		0.22	0.82
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	212	189	1977		387	2890
v/s Ratio Prot	0.00		0.28		0.08	c0.44
v/s Ratio Perm		c0.01				
v/c Ratio	0.03	0.07	0.49		0.34	0.54
Uniform Delay, d1	35.0	35.1	11.8		29.7	2.7
Progression Factor	1.00	1.00	1.00		0.78	0.09
Incremental Delay, d2	0.0	0.1	0.2		0.2	0.6
Delay (s)	35.0	35.2	12.1		23.3	0.9
Level of Service	C	D	B		C	A
Approach Delay (s)	35.2		12.1			2.6
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	26	106	162	33	127	45	832	29	63	1372	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1789	1583	1770	3521		1770	3526	
Flt Permitted		0.93	1.00		0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1734	1583		1376	1583	1770	3521		1770	3526	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	27	112	171	35	134	47	876	31	66	1444	37
RTOR Reduction (vph)	0	0	87	0	0	104	0	4	0	0	3	0
Lane Group Flow (vph)	0	34	25	0	206	30	47	903	0	66	1478	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		11.7	11.7		11.7	11.7	2.8	30.7		3.0	31.9	
Effective Green, g (s)		13.3	13.3		13.3	13.3	3.8	33.4		4.0	34.6	
Actuated g/C Ratio		0.22	0.22		0.22	0.22	0.06	0.56		0.07	0.58	
Clearance Time (s)		4.9	4.9		4.9	4.9	3.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		384	350		305	350	112	1960		118	2033	
v/s Ratio Prot							0.03	c0.26		0.04	c0.42	
v/s Ratio Perm		0.02	0.02		c0.15	0.02						
v/c Ratio		0.09	0.07		0.68	0.08	0.42	0.46		0.56	0.73	
Uniform Delay, d1		18.5	18.5		21.4	18.5	27.0	7.9		27.1	9.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.1		5.3	0.1	0.9	0.2		3.2	2.3	
Delay (s)		18.6	18.5		26.7	18.6	28.0	8.2		30.4	11.6	
Level of Service		B	B		C	B	C	A		C	B	
Approach Delay (s)		18.5			23.5			9.1			12.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	4	315	342	51	202	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	3.9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	332	360	54	213	32
RTOR Reduction (vph)	0	0	0	32	0	23
Lane Group Flow (vph)	4	332	360	22	213	9
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.6	20.9	16.3	16.3	10.4	10.4
Effective Green, g (s)	1.6	21.9	17.3	17.3	11.4	11.4
Actuated g/C Ratio	0.04	0.52	0.41	0.41	0.27	0.27
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	2.0
Lane Grp Cap (vph)	67	1849	1461	653	481	430
v/s Ratio Prot	0.00	c0.09	c0.10		c0.12	
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.06	0.18	0.25	0.03	0.44	0.02
Uniform Delay, d1	19.4	5.3	8.0	7.3	12.6	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.2	0.0	0.2	0.0
Delay (s)	19.6	5.3	8.2	7.4	12.9	11.2
Level of Service	B	A	A	A	B	B
Approach Delay (s)		5.5	8.1		12.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	41.9	Sum of lost time (s)	11.6
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰	↑↑↑	↰	↱
Volume (vph)	2280	161	423	2287	77	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.0	3.0	3.0	3.6	3.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1548	1770	4916	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1548	1770	4916	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2400	169	445	2407	81	76
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2400	169	445	2407	81	76
Confl. Peds. (#/hr)		5				5
Parking (#/hr)				0		
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	4		3	8	2	
Permitted Phases		Free				Free
Actuated Green, G (s)	65.0	120.0	29.0	98.0	11.4	120.0
Effective Green, g (s)	68.0	120.0	30.0	101.0	12.4	120.0
Actuated g/C Ratio	0.57	1.00	0.25	0.84	0.10	1.00
Clearance Time (s)	6.0		4.0	6.0	4.6	
Vehicle Extension (s)	4.1		2.0	4.1	2.0	
Lane Grp Cap (vph)	2881	1548	442	4137	182	1562
v/s Ratio Prot	c0.47		c0.25	0.49	c0.05	
v/s Ratio Perm		0.11				0.05
v/c Ratio	0.83	0.11	1.01	0.58	0.45	0.05
Uniform Delay, d1	21.3	0.0	45.0	2.9	50.6	0.0
Progression Factor	1.00	1.00	0.90	0.75	1.00	1.00
Incremental Delay, d2	3.0	0.1	36.8	0.4	0.6	0.1
Delay (s)	24.3	0.1	77.2	2.6	51.2	0.1
Level of Service	C	A	E	A	D	A
Approach Delay (s)	22.7			14.3	26.4	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	2603	10	40	2650	211	58	1	69	291	4	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	1531	1770	5085	1531	1681	1688	1517	1681	1687	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	1531	1770	5085	1531	1681	1688	1517	1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	101	2740	11	42	2789	222	61	1	73	306	4	300
RTOR Reduction (vph)	0	0	4	0	0	51	0	0	69	0	0	257
Lane Group Flow (vph)	101	2740	7	42	2789	171	31	31	4	156	154	43
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	11.2	72.0	72.0	6.4	67.2	67.2	5.9	5.9	5.9	17.1	17.1	17.1
Effective Green, g (s)	11.2	72.0	72.0	6.4	67.2	67.2	5.9	5.9	5.9	17.1	17.1	17.1
Actuated g/C Ratio	0.09	0.60	0.60	0.05	0.56	0.56	0.05	0.05	0.05	0.14	0.14	0.14
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	2.0	2.0	3.6	3.6	3.6
Lane Grp Cap (vph)	165	3051	918	94	2847	857	82	82	74	239	240	225
v/s Ratio Prot	c0.06	c0.54		0.02	c0.55		c0.02	0.02		c0.09	0.09	
v/s Ratio Perm			0.00			0.11			0.00			0.03
v/c Ratio	0.61	0.90	0.01	0.45	0.98	0.20	0.38	0.38	0.05	0.65	0.64	0.19
Uniform Delay, d1	52.3	20.8	9.6	55.1	25.7	13.1	55.3	55.3	54.4	48.6	48.6	45.3
Progression Factor	0.71	1.42	1.00	1.10	0.35	0.18	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	1.6	0.0	0.1	2.2	0.0	1.1	1.1	0.1	6.6	6.1	0.5
Delay (s)	38.9	31.1	9.6	60.9	11.2	2.4	56.3	56.3	54.5	55.2	54.6	45.8
Level of Service	D	C	A	E	B	A	E	E	D	E	D	D
Approach Delay (s)		31.3			11.3			55.3			50.5	
Approach LOS		C			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	2145	0	61	2348	632	2	5	46	1138	6	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.3		3.0	2.3	3.0		3.0	6.3	5.0	5.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99		1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085		1770	5085	1562		1837	1547	3221	1616	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085		1770	5085	1562		1837	1547	3221	1616	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	218	2258	0	64	2472	665	2	5	48	1198	6	379
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	41	0	0	0
Lane Group Flow (vph)	218	2258	0	64	2472	665	0	7	7	803	401	379
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot	NA	Perm	Prot	NA	Free	Split	NA	custom	Split	NA	Free
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			Free			1			Free
Actuated Green, G (s)	15.6	74.5		7.6	66.5	120.0		1.2	15.7	15.7	15.7	120.0
Effective Green, g (s)	16.6	77.9		8.6	69.9	120.0		2.2	16.7	18.0	18.0	120.0
Actuated g/C Ratio	0.14	0.65		0.07	0.58	1.00		0.02	0.14	0.15	0.15	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	7.3	7.3	7.3	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0	3.2	3.2	3.2	
Lane Grp Cap (vph)	244	3301		126	2962	1562		33	215	483	242	1583
v/s Ratio Prot	c0.12	0.44		0.04	c0.49			0.00		c0.25	0.25	
v/s Ratio Perm						c0.43			0.00			0.24
v/c Ratio	0.89	0.68		0.51	0.83	0.43		0.21	0.03	1.66	1.66	0.24
Uniform Delay, d1	50.8	13.3		53.7	20.4	0.0		58.0	44.7	51.0	51.0	0.0
Progression Factor	0.64	2.38		0.70	1.27	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.1	0.7		0.9	1.9	0.7		1.2	0.1	307.2	313.4	0.4
Delay (s)	52.5	32.3		38.4	27.8	0.7		59.2	44.7	358.2	364.4	0.4
Level of Service	D	C		D	C	A		E	D	F	F	A
Approach Delay (s)		34.1			22.4			46.6			274.1	
Approach LOS		C			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	81.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	2437	668	270	2541	24	680	62	269	14	198	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	6.7	5.7	4.0	4.0	4.6	4.6
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1555	4990	1863	1562	1770	1863	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1555	4990	1863	1562	1770	1863	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	2565	703	284	2675	25	716	65	283	15	208	369
RTOR Reduction (vph)	0	0	0	0	0	13	0	0	0	0	0	318
Lane Group Flow (vph)	100	2565	703	284	2675	12	716	65	283	15	208	51
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Actuated Green, G (s)	7.9	51.0	120.0	13.8	56.9	56.9	17.3	32.8	120.0	2.7	16.6	16.6
Effective Green, g (s)	7.9	51.0	120.0	13.8	56.9	56.9	17.3	32.8	120.0	2.7	16.6	16.6
Actuated g/C Ratio	0.07	0.42	1.00	0.12	0.47	0.47	0.14	0.27	1.00	0.02	0.14	0.14
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	6.7	5.7		4.0	4.6	4.6
Vehicle Extension (s)	2.0	4.1		2.0	4.1	4.1	2.0	4.3		2.0	2.0	2.0
Lane Grp Cap (vph)	226	2161	1562	394	2411	737	719	509	1562	39	257	385
v/s Ratio Prot	0.03	c0.50		c0.08	c0.53		c0.14	0.03		0.01	c0.11	
v/s Ratio Perm			0.45			0.01			0.18			0.02
v/c Ratio	0.44	1.19	0.45	0.72	1.11	0.02	1.00	0.13	0.18	0.38	0.81	0.13
Uniform Delay, d1	53.9	34.5	0.0	51.2	31.6	16.7	51.3	32.8	0.0	57.8	50.2	45.4
Progression Factor	1.18	0.42	1.00	1.20	0.59	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	86.3	0.4	3.4	53.5	0.0	32.3	0.2	0.3	2.3	16.0	0.1
Delay (s)	63.9	101.0	0.4	64.9	72.1	16.7	83.6	33.0	0.3	60.1	66.2	45.4
Level of Service	E	F	A	E	E	B	F	C	A	E	E	D
Approach Delay (s)		78.9			71.0			58.3			53.1	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	71.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	2917	227	338	2483	252	354	90	449	290	204	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	6408	1543	3433	6408	1560	1681	1718	1583	1681	1753	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	6408	1543	3433	6408	1560	1681	1718	1583	1681	1753	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	3071	239	356	2614	265	373	95	473	305	215	84
RTOR Reduction (vph)	0	0	95	0	0	0	0	0	230	0	0	0
Lane Group Flow (vph)	33	3071	144	356	2614	265	231	237	243	256	264	84
Confl. Peds. (#/hr)			10			10						10
Turn Type	Prot	NA	Perm	Prot	NA	Free	Split	NA	Perm	Split	NA	Free
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	10.9	45.9	45.9	17.9	52.9	120.0	18.9	18.9	18.9	18.9	18.9	120.0
Effective Green, g (s)	11.9	49.3	46.9	18.9	56.3	120.0	19.9	19.9	19.9	19.9	19.9	120.0
Actuated g/C Ratio	0.10	0.41	0.39	0.16	0.47	1.00	0.17	0.17	0.17	0.17	0.17	1.00
Clearance Time (s)	4.0	6.4	6.4	4.0	6.4		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.0	3.7	3.7	2.0	3.7		2.5	2.5	2.5	3.0	3.0	
Lane Grp Cap (vph)	340	2632	603	540	3006	1560	278	284	262	278	290	1560
v/s Ratio Prot	0.01	c0.48		c0.10	c0.41		0.14	0.14		c0.15	0.15	
v/s Ratio Perm			0.09			0.17			c0.15			0.05
v/c Ratio	0.10	1.17	0.24	0.66	0.87	0.17	0.83	0.83	0.93	0.92	0.91	0.05
Uniform Delay, d1	49.2	35.4	24.6	47.5	28.6	0.0	48.4	48.5	49.3	49.3	49.2	0.0
Progression Factor	0.62	0.73	0.95	0.58	0.48	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	78.7	0.8	0.2	0.3	0.0	18.3	18.3	36.1	33.7	30.7	0.1
Delay (s)	30.3	104.7	24.0	27.8	14.0	0.0	66.7	66.8	85.5	83.0	79.8	0.1
Level of Service	C	F	C	C	B	A	E	E	F	F	E	A
Approach Delay (s)		98.2			14.4			76.2			70.1	
Approach LOS		F			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	60.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	636	1921	4	14	2183	146	0	0	0	154	0	504
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4				6.0	6.0	6.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98				1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)	3433	5084		1770	5085	1557				1681	1681	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)	3433	5084		1770	5085	1557				1681	1681	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	669	2022	4	15	2298	154	0	0	0	162	0	531
RTOR Reduction (vph)	0	0	0	0	0	79	0	0	0	0	0	486
Lane Group Flow (vph)	669	2026	0	15	2298	75	0	0	0	81	81	45
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot	NA		Prot	NA	Perm	Split		Perm	Split	NA	Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	28.1	83.9		2.7	58.5	58.5				10.2	10.2	10.2
Effective Green, g (s)	28.1	83.9		2.7	58.5	58.5				10.2	10.2	10.2
Actuated g/C Ratio	0.23	0.70		0.02	0.49	0.49				0.08	0.08	0.08
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4				6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.7		2.0	3.7	3.7				2.0	2.0	2.0
Lane Grp Cap (vph)	803	3554		39	2478	759				142	142	236
v/s Ratio Prot	c0.19	0.40		0.01	c0.45					c0.05	0.05	
v/s Ratio Perm						0.05						0.02
v/c Ratio	0.83	0.57		0.38	0.93	0.10				0.57	0.57	0.19
Uniform Delay, d1	43.7	9.0		57.8	28.8	16.6				52.8	52.8	51.1
Progression Factor	0.35	0.42		1.34	0.94	1.79				1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0		2.0	6.6	0.2				3.4	3.4	0.1
Delay (s)	16.0	3.8		79.3	33.6	29.9				56.2	56.2	51.2
Level of Service	B	A		E	C	C				E	E	D
Approach Delay (s)		6.8			33.6			0.0			52.4	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	277	2471	156	184	2415	988	342	396	225	446	252	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3485	6504	1587	3433	5085	1556	3433	5085	1546	3433	5085	1544
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3485	6504	1587	3433	5085	1556	3433	5085	1546	3433	5085	1544
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	292	2601	164	194	2542	1040	360	417	237	469	265	205
RTOR Reduction (vph)	0	0	41	0	0	203	0	0	185	0	0	185
Lane Group Flow (vph)	292	2601	123	194	2542	837	360	417	52	469	265	21
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.3	51.1	72.0	16.0	52.8	52.8	20.9	14.4	14.4	18.5	12.0	12.0
Effective Green, g (s)	14.3	51.1	72.0	16.0	52.8	52.8	20.9	14.4	14.4	18.5	12.0	12.0
Actuated g/C Ratio	0.12	0.43	0.60	0.13	0.44	0.44	0.17	0.12	0.12	0.15	0.10	0.10
Clearance Time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.8	4.8	2.5	2.5	4.8	4.8	2.5	3.4	3.4	2.5	3.4	3.4
Lane Grp Cap (vph)	415	2769	1005	457	2237	684	597	610	185	529	508	154
v/s Ratio Prot	0.08	c0.40	0.02	0.06	0.50		c0.10	0.08		c0.14	0.05	
v/s Ratio Perm			0.06			c0.54			0.03			0.01
v/c Ratio	0.70	0.94	0.12	0.42	1.14	1.22	0.60	0.68	0.28	0.89	0.52	0.13
Uniform Delay, d1	50.8	33.0	10.4	47.8	33.6	33.6	45.7	50.6	48.1	49.7	51.3	49.3
Progression Factor	0.76	1.04	0.33	0.74	0.64	0.43	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	4.6	0.0	0.0	62.0	101.8	1.5	3.3	1.0	16.2	1.1	0.5
Delay (s)	41.6	38.7	3.5	35.6	83.5	116.3	47.2	53.9	49.1	65.9	52.4	49.7
Level of Service	D	D	A	D	F	F	D	D	D	E	D	D
Approach Delay (s)		37.1			90.1			50.4			58.6	
Approach LOS		D			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	63.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	3	23	128	2	316	32	2704	97	304	2991	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.86	1.00	0.97	0.86	1.00
Frpb, ped/bikes		1.00	0.94	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1784	1482	1681	1688	1583	1770	6408	1553	3433	6408	1550
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1784	1482	1681	1688	1583	1770	6408	1553	3433	6408	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	3	24	135	2	333	34	2846	102	320	3148	36
RTOR Reduction (vph)	0	0	23	0	0	0	0	0	36	0	0	9
Lane Group Flow (vph)	0	25	1	69	68	333	34	2846	66	320	3148	27
Confl. Peds. (#/hr)			5						5			5
Turn Type	Split	NA	Perm	Split	NA	Free	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	1		2	2		3	8		7	4	
Permitted Phases			1			Free			8			4
Actuated Green, G (s)		2.4	2.4	10.2	10.2	120.0	3.0	74.6	74.6	14.4	86.0	86.0
Effective Green, g (s)		3.4	3.4	11.2	11.2	120.0	4.0	78.0	78.0	15.4	89.4	89.4
Actuated g/C Ratio		0.03	0.03	0.09	0.09	1.00	0.03	0.65	0.65	0.13	0.75	0.75
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0	2.8	2.8		2.0	3.7	3.7	2.0	3.7	3.7
Lane Grp Cap (vph)		50	41	156	157	1583	59	4165	1009	440	4773	1154
v/s Ratio Prot		c0.01		c0.04	0.04		0.02	c0.44		c0.09	0.49	
v/s Ratio Perm			0.00			0.21			0.04			0.02
v/c Ratio		0.50	0.02	0.44	0.43	0.21	0.58	0.68	0.07	0.73	0.66	0.02
Uniform Delay, d1		57.5	56.7	51.4	51.4	0.0	57.2	13.2	7.7	50.3	7.7	4.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	0.99	0.38	0.05	1.08	1.28	1.00
Incremental Delay, d2		2.8	0.1	1.8	1.7	0.3	4.6	0.3	0.0	1.3	0.2	0.0
Delay (s)		60.3	56.7	53.2	53.1	0.3	61.2	5.3	0.4	55.6	10.0	4.0
Level of Service		E	E	D	D	A	E	A	A	E	B	A
Approach Delay (s)		58.6			15.7			5.8			14.1	
Approach LOS		E			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	65	78	2047	164	80	1918
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	82	2155	173	84	2019
RTOR Reduction (vph)	0	74	0	46	0	0
Lane Group Flow (vph)	68	8	2155	127	84	2019
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	11.7	11.7	83.8	83.8	8.4	96.2
Effective Green, g (s)	11.7	11.7	83.8	83.8	8.4	96.2
Actuated g/C Ratio	0.10	0.10	0.70	0.70	0.07	0.80
Clearance Time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Vehicle Extension (s)	2.5	2.5	3.5	3.5	2.0	3.7
Lane Grp Cap (vph)	172	154	3551	1105	123	4076
v/s Ratio Prot	c0.04		c0.42		c0.05	0.40
v/s Ratio Perm		0.01		0.08		
v/c Ratio	0.40	0.05	0.61	0.12	0.68	0.50
Uniform Delay, d1	50.8	49.1	9.5	5.9	54.5	3.9
Progression Factor	1.00	1.00	0.71	0.83	1.18	1.05
Incremental Delay, d2	1.1	0.1	0.3	0.0	10.2	0.4
Delay (s)	51.9	49.2	7.0	5.0	74.5	4.5
Level of Service	D	D	A	A	E	A
Approach Delay (s)	50.4		6.8			7.3
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	585	553	183	501	103	308	581	100	571	806	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1484	1856	3592	1471	3601	3592	1476	3565	5110	1461
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1484	1856	3592	1471	3601	3592	1476	3565	5110	1461
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	616	582	193	527	108	324	612	105	601	848	31
RTOR Reduction (vph)	0	0	41	0	0	73	0	0	74	0	0	21
Lane Group Flow (vph)	34	616	541	193	527	35	324	612	31	601	848	10
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.6	21.0	38.1	12.5	27.9	27.9	17.1	26.2	26.2	19.1	28.2	28.2
Effective Green, g (s)	6.6	24.0	40.1	13.5	30.9	30.9	18.1	29.2	29.2	20.1	31.2	31.2
Actuated g/C Ratio	0.07	0.24	0.41	0.14	0.31	0.31	0.18	0.30	0.30	0.20	0.32	0.32
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	124	877	605	255	1130	462	663	1068	438	729	1623	464
v/s Ratio Prot	0.02	0.17	c0.16	c0.10	0.15		0.09	c0.17		0.17	0.17	
v/s Ratio Perm			0.20			0.02			0.02			0.01
v/c Ratio	0.27	0.70	0.89	0.76	0.47	0.08	0.49	0.57	0.07	0.82	0.52	0.02
Uniform Delay, d1	43.5	33.8	27.1	40.8	27.0	23.6	35.9	29.2	24.8	37.4	27.4	23.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.9	15.2	10.8	0.5	0.1	0.2	1.0	0.1	7.2	0.5	0.0
Delay (s)	44.0	36.8	42.3	51.6	27.6	23.8	36.1	30.3	24.9	44.5	27.9	23.0
Level of Service	D	D	D	D	C	C	D	C	C	D	C	C
Approach Delay (s)		39.6			32.7			31.5			34.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	98.2	Sum of lost time (s)	11.4
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	254	31	224	7	20	14	186	1800	8	15	1977	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1703	1583	1770	1746		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1703	1583	1770	1746		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	267	33	236	7	21	15	196	1895	8	16	2081	73
RTOR Reduction (vph)	0	0	211	0	14	0	0	0	3	0	0	33
Lane Group Flow (vph)	150	150	25	7	22	0	196	1895	5	16	2081	40
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	12.8	12.8	12.8	6.0	6.0		15.3	79.5	79.5	2.0	66.2	66.2
Effective Green, g (s)	12.8	12.8	12.8	6.0	6.0		15.3	79.5	79.5	2.0	66.2	66.2
Actuated g/C Ratio	0.11	0.11	0.11	0.05	0.05		0.13	0.66	0.66	0.02	0.55	0.55
Clearance Time (s)	6.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	3.8	3.8	3.8	2.5	2.5		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	179	181	168	88	87		225	3368	1048	29	2805	873
v/s Ratio Prot	c0.09	0.09		0.00	c0.01		c0.11	0.37		0.01	c0.41	
v/s Ratio Perm			0.02						0.00			0.03
v/c Ratio	0.84	0.83	0.15	0.08	0.25		0.87	0.56	0.01	0.55	0.74	0.05
Uniform Delay, d1	52.6	52.5	48.7	54.4	54.8		51.4	10.9	6.9	58.6	20.4	12.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.82	1.31	1.00	1.22	0.30	1.00
Incremental Delay, d2	28.3	26.5	0.5	0.3	1.1		24.5	0.6	0.0	10.2	1.0	0.0
Delay (s)	80.9	79.1	49.2	54.6	55.9		66.8	14.8	6.9	81.8	7.3	12.4
Level of Service	F	E	D	D	E		E	B	A	F	A	B
Approach Delay (s)		66.4			55.7			19.7			8.0	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1260	90	113	873	64	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	3.0	1.3	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1326	95	119	919	67	32
RTOR Reduction (vph)	0	43	0	0	0	27
Lane Group Flow (vph)	1326	52	119	919	67	5
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	30.7	30.7	6.0	42.4	7.1	7.1
Effective Green, g (s)	33.4	31.7	7.0	45.1	8.1	8.1
Actuated g/C Ratio	0.58	0.55	0.12	0.78	0.14	0.14
Clearance Time (s)	5.7	5.7	4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2055	872	215	2775	249	222
v/s Ratio Prot	c0.37		c0.07	0.26	c0.04	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.65	0.06	0.55	0.33	0.27	0.02
Uniform Delay, d1	8.1	6.0	23.8	1.8	22.1	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	1.7	0.1	0.2	0.0
Delay (s)	8.9	6.0	25.5	1.9	22.3	21.3
Level of Service	A	A	C	A	C	C
Approach Delay (s)	8.8			4.6	22.0	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	197	94	37	98	200	19	1627	135	333	1830	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5071	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5071	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	207	99	39	103	211	20	1713	142	351	1926	38
RTOR Reduction (vph)	0	0	82	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	74	207	17	39	103	211	20	1713	142	351	1963	0
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	7.4	20.3	20.3	3.6	15.7	120.0	2.0	61.4	120.0	16.1	75.5	
Effective Green, g (s)	7.4	20.3	20.3	3.6	15.7	120.0	2.0	61.4	120.0	16.1	75.5	
Actuated g/C Ratio	0.06	0.17	0.17	0.03	0.13	1.00	0.02	0.51	1.00	0.13	0.63	
Clearance Time (s)	4.0	4.9	4.9	4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	4.3		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	109	315	267	53	463	1583	29	2601	1583	460	3190	
v/s Ratio Prot	c0.04	c0.11		0.02	0.03		0.01	c0.34		c0.10	0.39	
v/s Ratio Perm			0.01			0.13			0.09			
v/c Ratio	0.68	0.66	0.06	0.74	0.22	0.13	0.69	0.66	0.09	0.76	0.62	
Uniform Delay, d1	55.1	46.6	41.9	57.7	46.7	0.0	58.7	21.6	0.0	50.1	13.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.37	
Incremental Delay, d2	12.4	7.2	0.3	36.2	0.4	0.2	42.7	0.7	0.1	4.7	0.6	
Delay (s)	67.5	53.8	42.1	94.0	47.1	0.2	101.4	22.3	0.1	61.4	5.6	
Level of Service	E	D	D	F	D	A	F	C	A	E	A	
Approach Delay (s)		53.5			24.2			21.5			14.0	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	312	252	107	1939	1787	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	5085	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	328	265	113	2041	1881	248
RTOR Reduction (vph)	0	226	0	0	0	46
Lane Group Flow (vph)	328	39	113	2041	1881	202
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Actuated Green, G (s)	17.6	17.6	11.8	91.0	74.9	74.9
Effective Green, g (s)	17.6	17.6	11.8	91.0	74.9	74.9
Actuated g/C Ratio	0.15	0.15	0.10	0.76	0.62	0.62
Clearance Time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.1	4.1	4.1
Lane Grp Cap (vph)	503	232	337	3856	3173	988
v/s Ratio Prot	c0.10		0.03	c0.40	c0.37	
v/s Ratio Perm		0.02				0.13
v/c Ratio	0.65	0.17	0.34	0.53	0.59	0.20
Uniform Delay, d1	48.3	44.8	50.4	5.9	13.5	9.7
Progression Factor	1.00	1.00	1.23	0.47	0.26	0.07
Incremental Delay, d2	2.3	0.1	0.2	0.4	0.7	0.4
Delay (s)	50.6	44.9	62.0	3.2	4.2	1.1
Level of Service	D	D	E	A	A	A
Approach Delay (s)	48.1			6.3	3.9	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	381	769	58	207	83	646	1082	59	277	1695	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	133	401	809	61	218	87	680	1139	62	292	1784	95
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	133	401	809	61	218	87	680	1139	62	292	1784	95
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.0	21.9	120.0	8.0	21.3	120.0	31.0	55.3	120.0	15.1	39.4	120.0
Effective Green, g (s)	10.0	24.6	120.0	9.0	24.0	120.0	32.0	58.3	120.0	16.1	42.4	120.0
Actuated g/C Ratio	0.08	0.21	1.00	0.08	0.20	1.00	0.27	0.49	1.00	0.13	0.35	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	286	725	1562	257	707	1562	915	2470	1562	460	1796	1562
v/s Ratio Prot	0.04	0.11		0.02	0.06		c0.20	0.22		0.09	c0.35	
v/s Ratio Perm			c0.52			0.06			0.04			0.06
v/c Ratio	0.47	0.55	0.52	0.24	0.31	0.06	0.74	0.46	0.04	0.63	0.99	0.06
Uniform Delay, d1	52.4	42.8	0.0	52.3	40.9	0.0	40.2	20.4	0.0	49.2	38.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.3	1.2	0.2	0.4	0.1	2.9	0.6	0.0	2.1	19.6	0.1
Delay (s)	52.9	44.1	1.2	52.4	41.4	0.1	43.1	21.1	0.0	51.3	58.2	0.1
Level of Service	D	D	A	D	D	A	D	C	A	D	E	A
Approach Delay (s)		19.2			33.4			28.3			54.8	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	4	75	32	7	2	129	1249	22	0	1190	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00		0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85		1.00	
Flt Protected		0.97	1.00		0.96		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1800	1478		1781		1770	3539	1583		3539	
Flt Permitted		0.97	1.00		0.96		0.95	1.00	1.00		1.00	
Satd. Flow (perm)		1800	1478		1781		1770	3539	1583		3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	4	79	34	7	2	136	1315	23	0	1253	0
RTOR Reduction (vph)	0	0	70	0	2	0	0	0	7	0	0	0
Lane Group Flow (vph)	0	13	9	0	41	0	136	1315	16	0	1253	0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		4.2	4.2		1.3		3.2	32.1	32.1		24.9	
Effective Green, g (s)		6.1	6.1		3.2		4.2	35.1	35.1		27.9	
Actuated g/C Ratio		0.12	0.12		0.06		0.08	0.68	0.68		0.54	
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0		6.0	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1		4.1	
Lane Grp Cap (vph)		211	174		110		143	2398	1072		1906	
v/s Ratio Prot		c0.01			c0.02		c0.08	0.37			c0.35	
v/s Ratio Perm			0.01						0.01			
v/c Ratio		0.06	0.05		0.37		0.95	0.55	0.01		0.66	
Uniform Delay, d1		20.3	20.3		23.3		23.7	4.3	2.7		8.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.0	0.0		0.8		59.9	0.3	0.0		0.9	
Delay (s)		20.4	20.3		24.1		83.6	4.6	2.7		9.5	
Level of Service		C	C		C		F	A	A		A	
Approach Delay (s)		20.3			24.1			11.9			9.5	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	10.4
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	3	9	23	3	170	96	909	10	92	1153	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1783	1583	1770	3533		1770	3536	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1783	1583	1770	3533		1770	3536	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	3	9	24	3	179	101	957	11	97	1214	7
RTOR Reduction (vph)	0	0	8	0	0	143	0	1	0	0	1	0
Lane Group Flow (vph)	0	26	1	0	27	36	101	967	0	97	1220	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		5.5	5.5		15.8	15.8	7.2	37.6		6.1	36.5	
Effective Green, g (s)		6.5	6.5		16.8	16.8	8.2	40.6		7.1	39.5	
Actuated g/C Ratio		0.08	0.08		0.20	0.20	0.10	0.49		0.09	0.48	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		140	124		362	321	175	1734		151	1688	
v/s Ratio Prot		c0.01			0.02		0.06	0.27		c0.05	c0.35	
v/s Ratio Perm			0.00			c0.02						
v/c Ratio		0.19	0.01		0.07	0.11	0.58	0.56		0.64	0.72	
Uniform Delay, d1		35.6	35.1		26.7	26.9	35.6	14.8		36.6	17.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.0	0.1	2.8	0.6		6.8	1.8	
Delay (s)		35.9	35.1		26.7	26.9	38.4	15.3		43.4	19.0	
Level of Service		D	D		C	C	D	B		D	B	
Approach Delay (s)		35.7			26.9			17.5			20.8	
Approach LOS		D			C			B			C	

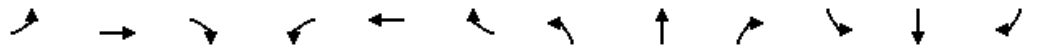
Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	11.7
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	753	14	48	709	545	1	628	41	410	1188	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	4.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1556	3433	3539	1562	3433	3539	1562	3433	3539	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1556	3433	3539	1562	3433	3539	1562	3433	3539	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	793	15	51	746	574	1	661	43	432	1251	148
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	81
Lane Group Flow (vph)	59	793	4	51	746	574	1	661	43	432	1251	67
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	3		4	8		5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)	7.5	25.9	25.9	9.6	27.0	96.0	1.4	29.0	96.0	13.5	41.1	41.1
Effective Green, g (s)	8.5	26.9	26.9	10.6	28.0	96.0	2.4	30.0	96.0	14.5	42.1	42.1
Actuated g/C Ratio	0.09	0.28	0.28	0.11	0.29	1.00	0.02	0.31	1.00	0.15	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	5.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	3.0		2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)	303	991	436	379	1032	1562	85	1105	1562	518	1551	681
v/s Ratio Prot	0.02	c0.22		0.01	c0.21		0.00	0.19		c0.13	c0.35	
v/s Ratio Perm			0.00			0.37			0.03			0.04
v/c Ratio	0.19	0.80	0.01	0.13	0.72	0.37	0.01	0.60	0.03	0.83	0.81	0.10
Uniform Delay, d1	40.6	32.1	24.9	38.6	30.5	0.0	45.6	27.9	0.0	39.6	23.4	15.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	4.4	0.0	0.1	2.5	0.7	0.0	1.3	0.0	10.6	3.6	0.1
Delay (s)	40.7	36.5	24.9	38.6	33.1	0.7	45.7	29.2	0.0	50.2	27.0	15.9
Level of Service	D	D	C	D	C	A	D	C	A	D	C	B
Approach Delay (s)		36.6			19.7			27.4			31.6	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	795	179	40	631	8	53	3	2	11	8	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.97		1.00	1.00			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.97	1.00
Satd. Flow (prot)	1770	3442		1770	3533			1560			1808	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78			0.88	1.00
Satd. Flow (perm)	1770	3442		1770	3533			1272			1630	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	837	188	42	664	8	56	3	2	12	8	352
RTOR Reduction (vph)	0	27	0	0	1	0	0	2	0	0	0	248
Lane Group Flow (vph)	26	998	0	42	671	0	0	59	0	0	20	104
Parking (#/hr)								4				
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	0.8	20.0		1.9	21.1			10.1			10.1	10.1
Effective Green, g (s)	1.8	22.0		2.9	23.1			11.1			11.1	11.1
Actuated g/C Ratio	0.04	0.49		0.06	0.51			0.25			0.25	0.25
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3		2.0	4.3			2.0			2.0	2.0
Lane Grp Cap (vph)	70	1671		113	1801			311			399	387
v/s Ratio Prot	0.01	c0.29		c0.02	0.19							
v/s Ratio Perm								0.05			0.01	c0.07
v/c Ratio	0.37	0.60		0.37	0.37			0.19			0.05	0.27
Uniform Delay, d1	21.2	8.4		20.3	6.7			13.5			13.1	13.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.2	0.7		0.8	0.2			0.1			0.0	0.1
Delay (s)	22.4	9.2		21.1	6.9			13.7			13.1	14.0
Level of Service	C	A		C	A			B			B	B
Approach Delay (s)		9.5			7.8			13.7			13.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	9.3
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	470	374	274	309	259	558
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5		2.8	2.5	3.0	2.8
Lane Util. Factor	0.97		1.00	1.00	1.00	1.00
Frt	0.93		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3282		1863	1583	1770	1863
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	3282		1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	495	394	288	325	273	587
RTOR Reduction (vph)	217	0	0	22	0	0
Lane Group Flow (vph)	672	0	288	303	273	587
Turn Type	Prot		NA	pm+ov	Prot	NA
Protected Phases	8		6	8	5	2
Permitted Phases				6		
Actuated Green, G (s)	15.7		15.3	31.0	8.3	27.6
Effective Green, g (s)	17.2		17.8	34.0	9.3	30.1
Actuated g/C Ratio	0.33		0.34	0.65	0.18	0.57
Clearance Time (s)	4.0		5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0		4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	1073		630	1023	312	1066
v/s Ratio Prot	c0.20		0.15	0.10	c0.15	c0.32
v/s Ratio Perm				0.09		
v/c Ratio	0.63		0.46	0.30	0.88	0.55
Uniform Delay, d1	15.0		13.6	4.1	21.1	7.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		0.8	0.1	22.2	0.8
Delay (s)	15.8		14.5	4.1	43.3	7.9
Level of Service	B		B	A	D	A
Approach Delay (s)	15.8		9.0			19.1
Approach LOS	B		A			B

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	8.3
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	159	541	12	39	323	34	4	0	13	12	0	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.90			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1649			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1649			1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	167	569	13	41	340	36	4	0	14	13	0	129
RTOR Reduction (vph)	0	0	7	0	0	22	0	17	0	0	0	105
Lane Group Flow (vph)	167	569	6	41	340	14	0	1	0	0	13	24
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	7.7	23.9	23.9	2.3	18.5	18.5		1.0			8.5	8.5
Effective Green, g (s)	8.7	26.9	26.9	3.3	21.5	21.5		2.0			10.5	10.5
Actuated g/C Ratio	0.16	0.49	0.49	0.06	0.39	0.39		0.04			0.19	0.19
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	277	1718	768	105	1373	614		59			335	300
v/s Ratio Prot	c0.09	c0.16		0.02	0.10			c0.00			0.01	
v/s Ratio Perm			0.00			0.01						c0.02
v/c Ratio	0.60	0.33	0.01	0.39	0.25	0.02		0.01			0.04	0.08
Uniform Delay, d1	21.7	8.7	7.4	25.1	11.5	10.5		25.7			18.3	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	2.5	0.1	0.0	0.9	0.1	0.0		0.0			0.0	0.0
Delay (s)	24.3	8.9	7.4	26.0	11.6	10.5		25.8			18.3	18.5
Level of Service	C	A	A	C	B	B		C			B	B
Approach Delay (s)		12.3			12.9			25.8			18.5	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	12.7
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	0	53	1	0	6	118	988	1	1	1089	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4	6.4	4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	0	56	1	0	6	124	1040	1	1	1146	62
RTOR Reduction (vph)	0	0	49	0	0	6	0	0	0	0	0	30
Lane Group Flow (vph)	0	27	7	0	1	0	124	1040	1	1	1146	32
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)		7.8	7.8		4.0	4.0	7.2	43.2	43.2	0.7	36.7	36.7
Effective Green, g (s)		7.8	8.8		4.0	4.0	8.2	44.2	43.2	0.7	37.7	37.7
Actuated g/C Ratio		0.11	0.12		0.05	0.05	0.11	0.60	0.58	0.01	0.51	0.51
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)		186	187		95	85	195	2110	922	16	1800	805
v/s Ratio Prot		c0.02			c0.00		c0.07	0.29		0.00	c0.32	
v/s Ratio Perm			0.00			0.00			0.00			0.02
v/c Ratio		0.15	0.04		0.01	0.00	0.64	0.49	0.00	0.06	0.64	0.04
Uniform Delay, d1		30.1	28.9		33.2	33.2	31.5	8.5	6.4	36.4	13.2	9.1
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.0		0.0	0.0	4.9	0.3	0.0	0.6	0.9	0.0
Delay (s)		30.3	28.9		33.2	33.2	36.4	8.8	6.4	37.0	14.1	9.2
Level of Service		C	C		C	C	D	A	A	D	B	A
Approach Delay (s)		29.4			33.2			11.8			13.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	17.4
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	275	0	235	2	0	2	248	749	4	0	913	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5			3.0		3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00	0.98			1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85			0.93		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400	1542			1695		1660	3417	1544		3491	1500
Flt Permitted	0.95	1.00			0.98		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400	1542			1695		1660	3417	1544		3491	1500
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	289	0	247	2	0	2	261	788	4	0	961	147
RTOR Reduction (vph)	0	189	0	0	4	0	0	0	2	0	0	89
Lane Group Flow (vph)	289	58	0	0	0	0	261	788	2	0	961	58
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split	NA		Split	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.9	12.9			1.3		8.3	35.0	35.0		22.7	22.7
Effective Green, g (s)	15.4	15.4			2.3		9.3	38.4	38.4		26.1	26.1
Actuated g/C Ratio	0.23	0.23			0.04		0.14	0.59	0.59		0.40	0.40
Clearance Time (s)	6.0	6.0			4.0		4.0	6.4	6.4		6.4	6.4
Vehicle Extension (s)	4.1	4.1			2.0		2.0	4.3	4.3		4.3	4.3
Lane Grp Cap (vph)	798	361			59		235	2000	903		1388	596
v/s Ratio Prot	c0.09	0.04			c0.00		c0.16	0.23			c0.28	
v/s Ratio Perm									0.00			0.04
v/c Ratio	0.36	0.16			0.00		1.11	0.39	0.00		0.69	0.10
Uniform Delay, d1	21.0	20.0			30.5		28.1	7.3	5.6		16.4	12.4
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.3			0.0		91.6	0.2	0.0		1.7	0.1
Delay (s)	21.4	20.3			30.5		119.7	7.5	5.6		18.1	12.5
Level of Service	C	C			C		F	A	A		B	B
Approach Delay (s)		20.9			30.5			35.3			17.4	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	607	512	80	461	237	136	1152	37	339	1403	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	144	639	539	84	485	249	143	1213	39	357	1477	206
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	144	639	539	84	485	249	143	1213	39	357	1477	206
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.4	28.5	120.0	8.0	22.1	120.0	9.0	46.9	120.0	17.2	55.1	120.0
Effective Green, g (s)	15.4	31.0	120.0	9.0	24.6	120.0	10.0	49.9	120.0	18.2	58.1	120.0
Actuated g/C Ratio	0.13	0.26	1.00	0.08	0.21	1.00	0.08	0.42	1.00	0.15	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	227	914	1583	257	725	1583	286	2114	1583	520	2461	1583
v/s Ratio Prot	c0.08	c0.18		0.02	0.14		0.04	c0.24		c0.10	c0.29	
v/s Ratio Perm			0.34			0.16			0.02			0.13
v/c Ratio	0.63	0.70	0.34	0.33	0.67	0.16	0.50	0.57	0.02	0.69	0.60	0.13
Uniform Delay, d1	49.6	40.3	0.0	52.6	43.9	0.0	52.6	26.9	0.0	48.2	22.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	2.4	0.6	0.7	2.4	0.2	1.4	0.4	0.0	3.8	1.1	0.2
Delay (s)	55.3	42.6	0.6	53.4	46.3	0.2	54.0	27.3	0.0	52.0	23.6	0.2
Level of Service	E	D	A	D	D	A	D	C	A	D	C	A
Approach Delay (s)		26.9			33.0			29.2			26.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.9
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	256	5	290	122	5	65	142	1361	47	94	1533	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.0	
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1688	1583		1777	1583	1770	5060		1770	5004	
Flt Permitted	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1688	1583		1777	1583	1770	5060		1770	5004	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	269	5	305	128	5	68	149	1433	49	99	1614	193
RTOR Reduction (vph)	0	0	265	0	0	60	0	3	0	0	10	0
Lane Group Flow (vph)	137	137	40	0	133	8	149	1479	0	99	1797	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)	14.8	14.8	14.8		13.0	13.0	13.8	63.1		11.4	61.4	
Effective Green, g (s)	15.8	15.8	15.8		14.0	14.0	14.8	66.1		12.4	64.4	
Actuated g/C Ratio	0.13	0.13	0.13		0.12	0.12	0.12	0.55		0.10	0.54	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3		2.0	5.3	
Lane Grp Cap (vph)	221	222	208		207	184	218	2787		182	2685	
v/s Ratio Prot	c0.08	0.08			c0.07		c0.08	0.29		0.06	c0.36	
v/s Ratio Perm			0.03			0.01						
v/c Ratio	0.62	0.62	0.19		0.64	0.04	0.68	0.53		0.54	0.67	
Uniform Delay, d1	49.3	49.2	46.4		50.6	47.1	50.4	17.1		51.1	20.1	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	3.6	0.2		5.0	0.0	6.9	0.7		1.8	0.9	
Delay (s)	52.9	52.8	46.6		55.6	47.1	57.2	17.8		52.9	21.0	
Level of Service	D	D	D		E	D	E	B		D	C	
Approach Delay (s)		49.5			52.7			21.4			22.7	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	333	106	79	23	88	37	269	1406	25	56	2066	392
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.91	0.91			0.95		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.97			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3200			3380		3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.72			0.77		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	2366			2610		3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	351	112	83	24	93	39	283	1480	26	59	2175	413
RTOR Reduction (vph)	0	18	0	0	28	0	0	0	12	0	0	152
Lane Group Flow (vph)	183	345	0	0	128	0	283	1480	14	59	2175	261
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	18.8	38.0			13.5		11.7	60.8	60.8	7.2	56.3	56.3
Effective Green, g (s)	19.8	40.7			16.2		12.7	63.8	63.8	8.2	59.3	59.3
Actuated g/C Ratio	0.17	0.34			0.13		0.11	0.53	0.53	0.07	0.49	0.49
Clearance Time (s)	4.0	5.7			5.7		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3			4.3		2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	265	951			352		363	2703	841	120	2512	782
v/s Ratio Prot	c0.11	0.06					c0.08	0.29		0.03	c0.43	
v/s Ratio Perm		c0.06			0.05				0.01			0.17
v/c Ratio	0.69	0.36			1.22dr		0.78	0.55	0.02	0.49	0.87	0.33
Uniform Delay, d1	47.2	29.9			47.2		52.3	18.6	13.3	53.9	26.8	18.4
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	0.4			1.0		9.3	0.8	0.0	1.2	3.6	0.5
Delay (s)	53.3	30.3			48.2		61.6	19.4	13.3	55.0	30.5	18.8
Level of Service	D	C			D		E	B	B	E	C	B
Approach Delay (s)		38.0			48.2			26.0			29.2	
Approach LOS		D			D			C			C	

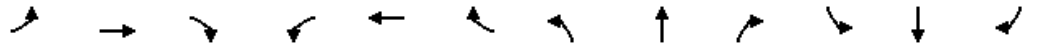
Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1	490	7	1	5	295	1009	10	4	1056	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1610	3034		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1610	3034		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	1	516	7	1	5	311	1062	11	4	1112	79
RTOR Reduction (vph)	0	0	280	0	8	0	0	0	5	0	0	49
Lane Group Flow (vph)	52	54	236	5	0	0	311	1062	6	4	1112	30
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.5	13.5	13.5	1.2	1.2		10.6	33.0	33.0	0.8	22.8	22.8
Effective Green, g (s)	16.2	16.2	16.2	2.2	2.2		11.6	36.4	36.4	1.8	26.2	26.2
Actuated g/C Ratio	0.23	0.23	0.23	0.03	0.03		0.17	0.52	0.52	0.03	0.37	0.37
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	389	390	366	50	95		293	1842	824	45	1905	593
v/s Ratio Prot	0.03	0.03		c0.00	0.00		c0.18	c0.30		0.00	0.22	
v/s Ratio Perm			c0.15						0.00			0.02
v/c Ratio	0.13	0.14	0.65	0.10	0.00		1.06	0.58	0.01	0.09	0.58	0.05
Uniform Delay, d1	21.3	21.3	24.3	32.9	32.8		29.2	11.5	8.1	33.2	17.5	13.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	4.6	1.4	0.0		69.7	0.7	0.0	0.3	0.6	0.1
Delay (s)	21.5	21.6	28.9	34.3	32.8		98.9	12.1	8.1	33.6	18.1	14.0
Level of Service	C	C	C	C	C		F	B	A	C	B	B
Approach Delay (s)		27.6			33.4			31.6			17.9	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	13.7
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	375	259	196	218	13	254	1330	218	70	915	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	1847		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	1847		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	395	273	206	229	14	267	1400	229	74	963	85
RTOR Reduction (vph)	0	0	230	0	2	0	0	0	101	0	0	45
Lane Group Flow (vph)	93	395	43	206	241	0	267	1400	128	74	963	40
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	10.7	18.8	18.8	11.6	19.7		13.7	65.0	65.0	6.0	56.2	56.2
Effective Green, g (s)	10.7	18.8	18.8	11.6	19.7		13.7	65.0	65.0	6.0	56.2	56.2
Actuated g/C Ratio	0.09	0.16	0.16	0.10	0.16		0.11	0.54	0.54	0.05	0.47	0.47
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	5.6	5.6	2.0	4.3	4.3
Lane Grp Cap (vph)	157	554	248	331	303		391	2754	857	171	2381	741
v/s Ratio Prot	0.05	0.11		c0.06	c0.13		c0.08	c0.28		0.02	0.19	
v/s Ratio Perm			0.03						0.08			0.03
v/c Ratio	0.59	0.71	0.17	0.62	0.80		0.68	0.51	0.15	0.43	0.40	0.05
Uniform Delay, d1	52.6	48.0	43.9	52.1	48.2		51.1	17.4	13.7	55.3	20.9	17.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.51	0.12	0.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	4.6	0.4	2.6	14.1		2.4	0.4	0.2	0.6	0.2	0.0
Delay (s)	56.5	52.6	44.3	54.7	62.3		79.4	2.4	0.3	56.0	21.1	17.4
Level of Service	E	D	D	D	E		E	A	A	E	C	B
Approach Delay (s)		50.1			58.8			13.0			23.1	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	106	278	353	80	41	620	1692	224	111	1227	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3		4.0	5.3	5.3	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1762	1583	1610	3225		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1762	1583	1610	3225		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	106	112	293	372	84	43	653	1781	236	117	1292	137
RTOR Reduction (vph)	0	0	258	0	10	0	0	0	99	0	0	84
Lane Group Flow (vph)	95	123	35	186	303	0	653	1781	137	117	1292	53
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	8	8		7	7		5	2	7	1	6	
Permitted Phases			8						2			6
Actuated Green, G (s)	14.2	14.2	14.2	17.8	17.8		28.8	52.1	69.9	16.0	40.6	40.6
Effective Green, g (s)	14.2	14.2	14.2	17.8	17.8		28.8	52.1	69.9	16.0	40.6	40.6
Actuated g/C Ratio	0.12	0.12	0.12	0.15	0.15		0.24	0.43	0.58	0.13	0.34	0.34
Clearance Time (s)	5.3	5.3	5.3	5.3	5.3		4.0	5.3	5.3	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		4.3	3.0	3.0	3.0	4.3	4.3
Lane Grp Cap (vph)	198	208	187	238	478		823	2207	922	457	1720	535
v/s Ratio Prot	0.06	c0.07		c0.12	0.09		0.19	c0.35	0.02	0.03	c0.25	
v/s Ratio Perm			0.02						0.06			0.03
v/c Ratio	0.48	0.59	0.19	0.78	0.63		0.79	0.81	0.15	0.26	0.75	0.10
Uniform Delay, d1	49.4	50.1	47.7	49.2	48.0		42.8	29.6	11.5	46.7	35.2	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.16	0.88	1.77	0.79	0.77	0.33
Incremental Delay, d2	1.8	4.5	0.5	15.3	2.7		5.4	3.0	0.1	0.3	2.0	0.1
Delay (s)	51.3	54.6	48.2	64.5	50.8		55.1	28.9	20.4	37.1	29.0	9.0
Level of Service	D	D	D	E	D		E	C	C	D	C	A
Approach Delay (s)		50.3			55.9			34.6			27.9	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.9
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	14	37	24	12	4	36	1349	6	7	938	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	2.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1635		3433	1791		1676	4984	1414	1745	5187	1473
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1635		3433	1791		1676	4984	1414	1745	5187	1473
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	198	15	39	25	13	4	38	1420	6	7	987	194
RTOR Reduction (vph)	0	32	0	0	4	0	0	0	3	0	0	96
Lane Group Flow (vph)	198	22	0	25	13	0	38	1420	3	7	987	98
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	10.8	10.3		3.5	4.3		1.6	30.2	30.2	0.9	28.5	28.5
Effective Green, g (s)	11.8	11.3		4.5	5.3		2.6	33.6	33.6	1.9	31.9	31.9
Actuated g/C Ratio	0.19	0.18		0.07	0.08		0.04	0.53	0.53	0.03	0.50	0.50
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	328	292		244	150		68	2649	751	52	2618	743
v/s Ratio Prot	c0.11	0.01		c0.01	0.01		c0.02	c0.28		0.00	0.19	
v/s Ratio Perm									0.00			0.07
v/c Ratio	0.60	0.08		0.10	0.09		0.56	0.54	0.00	0.13	0.38	0.13
Uniform Delay, d1	23.6	21.6		27.5	26.7		29.7	9.7	6.9	29.8	9.6	8.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.1		0.1	0.1		5.5	0.4	0.0	0.4	0.2	0.2
Delay (s)	25.7	21.7		27.5	26.8		35.3	10.1	7.0	30.3	9.8	8.5
Level of Service	C	C		C	C		D	B	A	C	A	A
Approach Delay (s)		24.8			27.2			10.7			9.7	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	12.9
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	13	54	62	17	66	35	1629	43	29	1792	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.88		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1604		1770	3521		1770	3525	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1604		1770	3521		1770	3525	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	62	14	57	65	18	69	37	1715	45	31	1886	38
RTOR Reduction (vph)	0	0	53	0	62	0	0	1	0	0	1	0
Lane Group Flow (vph)	62	14	4	65	25	0	37	1759	0	31	1923	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3									
Actuated Green, G (s)	6.0	6.0	6.0	7.8	7.8		3.8	54.9		3.8	55.3	
Effective Green, g (s)	7.0	7.0	7.0	8.8	8.8		4.8	56.9		4.8	57.3	
Actuated g/C Ratio	0.08	0.08	0.08	0.10	0.10		0.05	0.63		0.05	0.64	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	137	145	123	173	157		94	2231		94	2249	
v/s Ratio Prot	c0.04	0.01		c0.04	0.02		c0.02	0.50		0.02	c0.55	
v/s Ratio Perm			0.00									
v/c Ratio	0.45	0.10	0.04	0.38	0.16		0.39	0.79		0.33	0.86	
Uniform Delay, d1	39.6	38.5	38.3	37.9	37.1		41.1	12.0		41.0	12.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	0.2	0.1	1.1	0.4		1.0	2.1		0.8	3.5	
Delay (s)	41.6	38.7	38.4	39.1	37.5		42.1	14.1		41.7	16.5	
Level of Service	D	D	D	D	D		D	B		D	B	
Approach Delay (s)		39.9			38.2			14.7			16.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	12.3
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

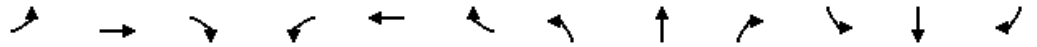
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	0	192	408	0	7	77	2157	40	3	2410	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00		0.97	1.00		0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1540	1770		1555	1770	5068		1770	5017	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1540	1770		1555	1770	5068		1770	5017	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	0	202	429	0	7	81	2271	42	3	2537	192
RTOR Reduction (vph)	0	0	71	0	0	5	0	1	0	0	6	0
Lane Group Flow (vph)	36	0	131	429	0	2	81	2312	0	3	2723	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot	NA		Prot	NA	
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	39.7		39.7	39.7		39.7	8.7	93.0		0.6	84.9	
Effective Green, g (s)	40.7		40.7	40.7		40.7	9.7	94.5		2.6	86.4	
Actuated g/C Ratio	0.27		0.27	0.27		0.27	0.06	0.63		0.02	0.58	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	480		417	480		421	114	3192		30	2889	
v/s Ratio Prot	0.02			c0.24			c0.05	0.46		0.00	c0.54	
v/s Ratio Perm			0.09			0.00						
v/c Ratio	0.07		0.31	0.89		0.00	0.71	0.72		0.10	0.94	
Uniform Delay, d1	40.6		43.5	52.6		39.9	68.8	18.9		72.5	29.5	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		0.81	0.68	
Incremental Delay, d2	0.0		0.2	18.3		0.0	15.9	1.5		0.3	5.1	
Delay (s)	40.7		43.7	70.9		39.9	84.7	20.3		59.1	25.3	
Level of Service	D		D	E		D	F	C		E	C	
Approach Delay (s)		43.2			70.4			22.5			25.3	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	26	10	104	31	59	5	2139	9	38	2461	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2013			1963		1770	4984		1770	4964	
Flt Permitted		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2013			1963		1770	4984		1770	4964	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	27	11	109	33	62	5	2252	9	40	2591	77
RTOR Reduction (vph)	0	3	0	0	11	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	93	0	0	193	0	5	2261	0	40	2666	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)		10.3			19.2		2.4	95.9		6.9	100.4	
Effective Green, g (s)		11.3			20.2		3.4	98.6		7.9	103.1	
Actuated g/C Ratio		0.08			0.13		0.02	0.66		0.05	0.69	
Clearance Time (s)		4.0			4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0		2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		151			264		40	3276		93	3411	
v/s Ratio Prot		c0.05			c0.10		0.00	c0.45		0.02	c0.54	
v/s Ratio Perm												
v/c Ratio		0.62			0.73		0.12	0.69		0.43	0.78	
Uniform Delay, d1		67.3			62.3		71.8	16.1		68.9	15.8	
Progression Factor		1.00			1.00		0.80	0.32		1.00	1.47	
Incremental Delay, d2		5.2			8.6		0.4	0.5		0.6	1.0	
Delay (s)		72.4			70.9		57.9	5.7		69.6	24.2	
Level of Service		E			E		E	A		E	C	
Approach Delay (s)		72.4			70.9			5.8			24.9	
Approach LOS		E			E			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	24	0	25	0	1368	29	31	1624	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		2.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3528		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3528		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	25	0	26	0	1440	31	33	1709	0
RTOR Reduction (vph)	0	0	0	0	0	25	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	25	0	1	0	1470	0	33	1709	0
Turn Type			Perm	Prot		Perm		NA		Prot	NA	
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				2.2		2.2		45.4		1.5	49.9	
Effective Green, g (s)				3.2		3.2		47.4		2.5	51.9	
Actuated g/C Ratio				0.05		0.05		0.69		0.04	0.76	
Clearance Time (s)				4.0		4.0		4.9		3.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				82		73		2434		64	2673	
v/s Ratio Prot				c0.01				0.42		0.02	c0.48	
v/s Ratio Perm						0.00						
v/c Ratio				0.30		0.02		0.60		0.52	0.64	
Uniform Delay, d1				31.7		31.2		5.7		32.5	4.0	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.8		0.0		0.7		2.9	0.7	
Delay (s)				32.4		31.3		6.4		35.4	4.7	
Level of Service				C		C		A		D	A	
Approach Delay (s)		0.0			31.9			6.4			5.3	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	11.9
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	57	861	7	222	911
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	1.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3535		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3535		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	60	906	7	234	959
RTOR Reduction (vph)	0	51	1	0	0	0
Lane Group Flow (vph)	4	9	912	0	234	959
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	6.0	6.0	19.5		7.5	32.8
Effective Green, g (s)	7.0	7.0	21.5		8.5	34.8
Actuated g/C Ratio	0.15	0.15	0.47		0.19	0.76
Clearance Time (s)	4.0	4.0	4.8		4.0	3.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	270	241	1659		328	2689
v/s Ratio Prot	0.00		c0.26		c0.13	0.27
v/s Ratio Perm		c0.01				
v/c Ratio	0.01	0.04	0.55		0.71	0.36
Uniform Delay, d1	16.5	16.5	8.7		17.5	1.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.1	0.4		7.2	0.1
Delay (s)	16.5	16.6	9.1		24.7	1.9
Level of Service	B	B	A		C	A
Approach Delay (s)	16.6		9.1			6.4
Approach LOS	B		A			A

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	8.8
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1	8	254	7	294	8	930	69	226	1636	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.92			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1689			1776	1556	1770	3496		1770	3527	
Flt Permitted		0.91			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1561			1344	1556	1770	3496		1770	3527	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1	8	267	7	309	8	979	73	238	1722	35
RTOR Reduction (vph)	0	6	0	0	0	210	0	7	0	0	2	0
Lane Group Flow (vph)	0	8	0	0	274	99	8	1045	0	238	1755	0
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						
Actuated Green, G (s)		16.5			16.5	16.5	1.2	29.7		11.9	40.4	
Effective Green, g (s)		17.5			17.5	17.5	2.2	32.7		12.9	43.4	
Actuated g/C Ratio		0.24			0.24	0.24	0.03	0.46		0.18	0.60	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		380			327	379	54	1592		318	2131	
v/s Ratio Prot							0.00	0.30		c0.13	c0.50	
v/s Ratio Perm		0.01			c0.20	0.06						
v/c Ratio		0.02			0.84	0.26	0.15	0.66		0.75	0.82	
Uniform Delay, d1		20.6			25.8	21.9	33.9	15.2		27.9	11.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			16.2	0.1	0.5	1.2		8.2	3.0	
Delay (s)		20.6			42.0	22.1	34.4	16.4		36.1	14.2	
Level of Service		C			D	C	C	B		D	B	
Approach Delay (s)		20.6			31.4			16.5			16.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	71.8	Sum of lost time (s)	8.7
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	0	31	63	4	19	42	960	8	20	1754	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	1531		1779	1474	1770	3539	1544	1770	3527	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1770	1531		1779	1474	1770	3539	1544	1770	3527	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	0	33	66	4	20	44	1011	8	21	1846	38
RTOR Reduction (vph)	0	0	30	0	0	19	0	0	3	0	1	0
Lane Group Flow (vph)	0	57	3	0	70	1	44	1011	5	21	1883	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		7.6	7.6		3.2	3.2	3.6	59.5	59.5	2.0	57.9	
Effective Green, g (s)		8.6	8.6		4.2	4.2	4.6	62.5	60.5	3.0	60.9	
Actuated g/C Ratio		0.10	0.10		0.05	0.05	0.05	0.69	0.67	0.03	0.68	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		169	146		83	68	90	2457	1037	59	2386	
v/s Ratio Prot		c0.03			c0.04		c0.02	0.29		0.01	c0.53	
v/s Ratio Perm			0.00			0.00			0.00			
v/c Ratio		0.34	0.02		0.84	0.01	0.49	0.41	0.01	0.36	0.79	
Uniform Delay, d1		38.0	36.9		42.6	40.9	41.6	5.9	4.9	42.6	10.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4	0.0		49.0	0.0	1.5	0.3	0.0	1.3	2.7	
Delay (s)		38.5	36.9		91.6	41.0	43.1	6.1	4.9	43.9	12.8	
Level of Service		D	D		F	D	D	A	A	D	B	
Approach Delay (s)		37.9			80.4			7.7			13.2	
Approach LOS		D			F			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

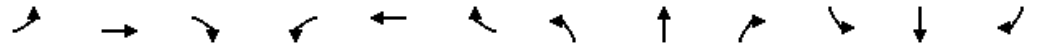
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	115	37	570	138	66	1192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	39	600	145	69	1255
RTOR Reduction (vph)	0	31	0	63	0	0
Lane Group Flow (vph)	121	8	600	82	69	1255
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.3	9.3	26.7	26.7	3.8	33.5
Effective Green, g (s)	10.8	10.8	29.7	29.7	4.8	36.5
Actuated g/C Ratio	0.20	0.20	0.56	0.56	0.09	0.69
Clearance Time (s)	4.0	4.0	6.0	6.0	3.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	362	323	1990	890	160	2446
v/s Ratio Prot	c0.07		0.17		0.04	c0.35
v/s Ratio Perm		0.01		0.05		
v/c Ratio	0.33	0.02	0.30	0.09	0.43	0.51
Uniform Delay, d1	17.9	16.8	6.1	5.3	22.7	3.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.2	0.1	0.7	0.3
Delay (s)	18.5	16.8	6.3	5.4	23.4	4.2
Level of Service	B	B	A	A	C	A
Approach Delay (s)	18.1		6.1			5.2
Approach LOS	B		A			A

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	7.5
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	510	868	81	540	959	227	60	0	192	164	0	637
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0	5.0	2.0	4.0	3.0	2.0		3.0	3.7		2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.99	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1527	1770	3539	1562	1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1527	1770	3539	1562	1770		1583	1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	537	914	85	568	1009	239	63	0	202	173	0	671
RTOR Reduction (vph)	0	0	59	0	0	0	0	0	178	0	0	0
Lane Group Flow (vph)	537	914	26	568	1009	239	63	0	24	173	0	671
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5			6		
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	33.1	32.1	32.1	35.1	34.1	108.9	11.7		11.7	10.3		108.9
Effective Green, g (s)	35.1	34.1	33.1	37.1	36.1	108.9	13.7		12.7	12.3		108.9
Actuated g/C Ratio	0.32	0.31	0.30	0.34	0.33	1.00	0.13		0.12	0.11		1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0		4.0	5.7		
Vehicle Extension (s)	2.0	4.8	4.8	2.0	4.8		2.0		2.0	2.0		
Lane Grp Cap (vph)	570	1108	464	603	1173	1562	222		184	199		1583
v/s Ratio Prot	c0.30	0.26		c0.32	0.29		0.04			c0.10		
v/s Ratio Perm			0.02			0.15			0.01			c0.42
v/c Ratio	0.94	0.82	0.06	0.94	0.86	0.15	0.28		0.13	0.87		0.42
Uniform Delay, d1	35.9	34.6	26.8	34.9	34.0	0.0	43.2		43.1	47.5		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	23.9	5.7	0.1	23.0	7.2	0.2	0.3		0.1	29.9		0.8
Delay (s)	59.8	40.3	26.9	57.8	41.2	0.2	43.4		43.2	77.4		0.8
Level of Service	E	D	C	E	D	A	D		D	E		A
Approach Delay (s)		46.4			41.0			43.3			16.5	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	11.7
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	5	111	13	11	7	309	737	22	13	1093	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1788	1583		1814	1583	1770	3524		1770	3519	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1788	1583		1814	1583	1770	3524		1770	3519	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	5	117	14	12	7	325	776	23	14	1151	46
RTOR Reduction (vph)	0	0	105	0	0	6	0	2	0	0	3	0
Lane Group Flow (vph)	0	31	12	0	26	1	325	797	0	14	1194	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		6.6	6.6		5.0	5.0	15.1	44.2		0.9	30.0	
Effective Green, g (s)		7.6	7.6		6.0	6.0	16.1	46.9		1.9	32.7	
Actuated g/C Ratio		0.10	0.10		0.08	0.08	0.22	0.63		0.03	0.44	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		182	161		146	127	383	2221		45	1546	
v/s Ratio Prot		c0.02			c0.01		c0.18	0.23		0.01	c0.34	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.17	0.07		0.18	0.00	0.85	0.36		0.31	0.77	
Uniform Delay, d1		30.5	30.2		31.9	31.5	28.0	6.6		35.6	17.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.2		0.6	0.0	15.3	0.1		1.4	2.6	
Delay (s)		31.0	30.4		32.5	31.5	43.3	6.7		37.0	20.3	
Level of Service		C	C		C	C	D	A		D	C	
Approach Delay (s)		30.5			32.3			17.3			20.5	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	0	35	9	3	22	27	625	15	37	1133	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4		3.0	3.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1795	1583	1770	3527		1770	3497	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1795	1583	1770	3527		1770	3497	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	0	37	9	3	23	28	658	16	39	1193	103
RTOR Reduction (vph)	0	0	31	0	0	22	0	1	0	0	4	0
Lane Group Flow (vph)	0	68	6	0	12	1	28	673	0	39	1292	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		10.7	10.7		2.9	2.9	2.3	41.3		4.2	43.2	
Effective Green, g (s)		11.7	11.7		3.9	3.9	3.3	43.6		5.2	45.5	
Actuated g/C Ratio		0.15	0.15		0.05	0.05	0.04	0.57		0.07	0.59	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		269	241		91	80	76	2002		119	2071	
v/s Ratio Prot		c0.04			c0.01		0.02	0.19		c0.02	c0.37	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.25	0.02		0.13	0.01	0.37	0.34		0.33	0.62	
Uniform Delay, d1		28.7	27.7		34.8	34.6	35.7	8.9		34.1	10.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.2	0.0	1.1	0.1		0.6	0.7	
Delay (s)		28.9	27.7		35.1	34.7	36.8	9.0		34.7	10.8	
Level of Service		C	C		D	C	D	A		C	B	
Approach Delay (s)		28.5			34.8			10.1			11.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	12.4
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	13	28	83	16	467	47	1099	17	131	1484	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1800	1527	1681	1711	1583	1770	3528		1770	3495	
Flt Permitted		0.97	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1800	1527	1681	1711	1583	1770	3528		1770	3495	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	14	29	87	17	492	49	1157	18	138	1562	97
RTOR Reduction (vph)	0	0	26	0	0	328	0	0	0	0	3	0
Lane Group Flow (vph)	0	47	3	51	53	164	49	1175	0	138	1656	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		9.5	9.5	14.1	14.1	14.1	4.5	50.8		10.4	56.7	
Effective Green, g (s)		10.5	10.5	15.1	15.1	15.1	6.5	52.8		12.4	58.7	
Actuated g/C Ratio		0.10	0.10	0.15	0.15	0.15	0.06	0.51		0.12	0.57	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		182	154	244	248	230	110	1794		211	1976	
v/s Ratio Prot		c0.03		0.03	0.03		0.03	0.33		c0.08	c0.47	
v/s Ratio Perm			0.00			c0.10						
v/c Ratio		0.26	0.02	0.21	0.21	0.71	0.45	0.65		0.65	0.84	
Uniform Delay, d1		43.1	42.0	39.1	39.1	42.3	46.9	18.8		43.7	18.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.0	0.3	0.3	9.3	1.0	0.9		5.5	3.4	
Delay (s)		43.6	42.0	39.4	39.4	51.6	48.0	19.7		49.1	22.0	
Level of Service		D	D	D	D	D	D	B		D	C	
Approach Delay (s)		43.0			49.5			20.9			24.1	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	103.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

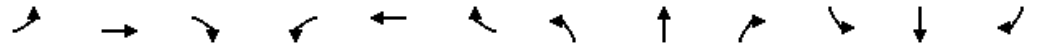
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	0	42	13	0	23	50	1072	33	37	1488	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	0	44	14	0	24	53	1128	35	39	1566	5
RTOR Reduction (vph)	0	0	39	0	0	23	0	2	0	0	0	2
Lane Group Flow (vph)	36	0	5	14	0	1	53	1161	0	39	1566	3
Turn Type	Prot		Perm	Prot		Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	10.9		10.9	4.7		4.7	4.6	54.7		4.1	54.2	54.2
Effective Green, g (s)	10.9		10.9	5.7		5.7	4.6	55.7		5.1	55.2	54.2
Actuated g/C Ratio	0.12		0.12	0.06		0.06	0.05	0.60		0.06	0.60	0.59
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	209		187	109		97	88	2130		98	2121	931
v/s Ratio Prot	c0.02			c0.01			c0.03	0.33		0.02	c0.44	
v/s Ratio Perm			0.00			0.00						0.00
v/c Ratio	0.17		0.03	0.13		0.02	0.60	0.55		0.40	0.74	0.00
Uniform Delay, d1	36.5		35.9	40.9		40.6	42.9	10.7		42.0	13.3	7.8
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1		0.0	0.2		0.0	7.7	0.4		1.0	1.6	0.0
Delay (s)	36.7		35.9	41.0		40.6	50.6	11.2		43.0	14.8	7.8
Level of Service	D		D	D		D	D	B		D	B	A
Approach Delay (s)		36.3			40.8			12.9			15.5	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	92.1	Sum of lost time (s)	15.7
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1412	366	567	1095	376	625	0	1183	24	579	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	6.0	2.0	4.0	2.0	4.0		4.0	6.0	4.0	2.0
Lane Util. Factor		0.86	1.00	0.97	0.91	1.00	0.97		0.88	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		6408	1583	3433	5085	1583	3433		2787	1770	3539	1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		6408	1583	3433	5085	1583	3433		2787	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1486	385	597	1153	396	658	0	1245	25	609	359
RTOR Reduction (vph)	0	0	215	0	0	0	0	0	371	0	0	0
Lane Group Flow (vph)	0	1486	170	597	1153	396	658	0	874	25	609	359
Turn Type		NA	Prot	Prot	NA	Free	Prot		pt+ov	Split	NA	Free
Protected Phases		4	4	3	8		2		2 3	1	1	
Permitted Phases						Free						Free
Actuated Green, G (s)		41.5	41.5	27.6	73.1	150.0	31.2		64.8	27.7	27.7	150.0
Effective Green, g (s)		43.5	41.5	29.6	75.1	150.0	33.2		66.8	27.7	29.7	150.0
Actuated g/C Ratio		0.29	0.28	0.20	0.50	1.00	0.22		0.45	0.18	0.20	1.00
Clearance Time (s)		6.0	6.0	4.0	6.0		6.0			6.0	6.0	
Vehicle Extension (s)		4.8	4.8	2.0	4.8		2.0			4.7	4.7	
Lane Grp Cap (vph)		1858	437	677	2545	1583	759		1241	326	700	1583
v/s Ratio Prot		c0.23	0.11	c0.17	0.23		c0.19		0.31	0.01	c0.17	
v/s Ratio Perm						0.25						0.23
v/c Ratio		0.80	0.39	0.88	0.45	0.25	0.87		0.70	0.08	0.87	0.23
Uniform Delay, d1		49.2	44.0	58.5	24.2	0.0	56.3		33.6	50.6	58.3	0.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		2.9	1.1	12.6	0.6	0.4	9.9		1.5	0.2	12.0	0.3
Delay (s)		52.1	45.1	71.1	24.8	0.4	66.2		35.1	50.8	70.3	0.3
Level of Service		D	D	E	C	A	E		D	D	E	A
Approach Delay (s)		50.6			33.2			45.9			44.5	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	285	1082	0	0	2540	526	0	0	1183	0	0	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.9			3.0			2.0
Lane Util. Factor	1.00	0.86			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			4791	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			4791	1362			1611			2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	300	1139	0	0	2674	554	0	0	1245	0	0	493
RTOR Reduction (vph)	0	0	0	0	3	62	0	0	0	0	0	27
Lane Group Flow (vph)	300	1139	0	0	2726	437	0	0	1245	0	0	466
Turn Type	Prot	NA			NA	Perm			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						6			Free			
Actuated Green, G (s)	11.5	60.0			39.6	39.6			60.0			11.5
Effective Green, g (s)	13.5	60.0			41.6	41.6			60.0			13.5
Actuated g/C Ratio	0.22	1.00			0.69	0.69			1.00			0.22
Clearance Time (s)	4.0	4.9			4.9	4.9						4.0
Vehicle Extension (s)	2.0	3.9			3.8	3.8						2.0
Lane Grp Cap (vph)	398	6408			3321	944			1611			627
v/s Ratio Prot	0.17	0.18			0.57							0.17
v/s Ratio Perm						0.32			c0.77			
v/c Ratio	0.75	0.18			0.82	0.46			0.77			0.74
Uniform Delay, d1	21.7	0.0			6.5	4.2			0.0			21.6
Progression Factor	1.57	1.00			1.37	1.53			1.00			1.00
Incremental Delay, d2	5.9	0.0			0.9	0.6			3.7			4.2
Delay (s)	39.8	0.0			9.8	6.9			3.7			25.8
Level of Service	D	A			A	A			A			C
Approach Delay (s)		8.3			9.4			3.7			25.8	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	4.9
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1093	756	0	1604	1404	0	0	0	274	764	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.9		2.9	3.0				3.7	4.3	3.7
Lane Util. Factor		0.95	1.00		0.91	0.91				0.95	*0.90	1.00
Frt		1.00	0.85		0.97	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3539	1583		3273	1441				1681	1674	1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3539	1583		3273	1441				1681	1674	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1151	796	0	1688	1478	0	0	0	288	804	186
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	1151	796	0	2169	975	0	0	0	259	833	176
Turn Type		NA	Prot		NA	Free				Split	NA	Prot
Protected Phases		2	2		6					4	4	4
Permitted Phases						Free						
Actuated Green, G (s)		64.1	64.1		64.1	120.0				45.7	45.7	45.7
Effective Green, g (s)		65.7	65.1		66.1	120.0				47.3	46.7	47.3
Actuated g/C Ratio		0.55	0.54		0.55	1.00				0.39	0.39	0.39
Clearance Time (s)		4.9	4.9		4.9					5.3	5.3	5.3
Vehicle Extension (s)		3.8	3.8		3.8					2.0	2.0	2.0
Lane Grp Cap (vph)		1937	858		1802	1441				662	651	623
v/s Ratio Prot		0.33	0.50		c0.66					0.15	c0.50	0.11
v/s Ratio Perm						0.68						
v/c Ratio		0.59	0.93		1.20	0.68				0.39	1.28	0.28
Uniform Delay, d1		18.2	25.3		27.0	0.0				26.0	36.6	24.8
Progression Factor		1.05	0.97		0.79	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.5	7.5		95.0	1.5				0.1	137.4	0.1
Delay (s)		19.5	31.9		116.3	1.5				26.2	174.0	24.9
Level of Service		B	C		F	A				C	F	C
Approach Delay (s)		24.6			80.9			0.0			122.4	
Approach LOS		C			F			A			F	

Intersection Summary			
HCM 2000 Control Delay	72.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.2
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰↰	↑↑				↱			↱
Volume (vph)	0	836	674	972	1210	0	0	0	1055	0	0	548
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	4.0	4.0				4.0			5.0
Lane Util. Factor		0.91	1.00	0.97	0.95				1.00			1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00				1.00			1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00				1.00			1.00
Frt		1.00	0.85	1.00	1.00				0.86			0.86
Flt Protected		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (prot)		5085	1558	3433	3539				1611			1611
Flt Permitted		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (perm)		5085	1558	3433	3539				1611			1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	880	709	1023	1274	0	0	0	1111	0	0	577
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	880	694	1023	1274	0	0	0	1111	0	0	577
Confl. Peds. (#/hr)			5									
Turn Type		NA	Perm	Prot	NA				Free			Perm
Protected Phases		2		1								
Permitted Phases			2		Free				Free			4
Actuated Green, G (s)		18.3	18.3	12.0	40.0				40.0			40.0
Effective Green, g (s)		18.3	18.3	12.0	40.0				40.0			40.0
Actuated g/C Ratio		0.46	0.46	0.30	1.00				1.00			1.00
Clearance Time (s)		5.7	5.7	4.0								5.0
Vehicle Extension (s)		3.4	3.4	2.0								3.0
Lane Grp Cap (vph)		2326	712	1029	3539				1611			1611
v/s Ratio Prot		0.17		c0.30								
v/s Ratio Perm			c0.45		0.36				0.69			0.36
v/c Ratio		0.38	0.98	0.99	0.36				0.69			0.36
Uniform Delay, d1		7.1	10.6	14.0	0.0				0.0			0.0
Progression Factor		1.00	1.00	1.00	1.00				1.00			1.00
Incremental Delay, d2		0.5	28.2	26.4	0.3				2.4			0.1
Delay (s)		7.6	38.8	40.4	0.3				2.4			0.1
Level of Service		A	D	D	A				A			A
Approach Delay (s)		21.5			18.2			2.4			0.1	
Approach LOS		C			B			A			A	

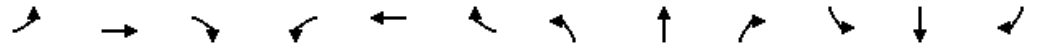
Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱		↑↑↑	↰↰↰	↱↱
Volume (vph)	1933	627	0	2125	781	620
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	0%	
Total Lost time (s)	4.7	4.7		4.7	6.3	6.3
Lane Util. Factor	0.91	1.00		0.91	0.94	0.88
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	5212	1623		5085	4990	2787
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	5212	1623		5085	4990	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2035	660	0	2237	822	653
RTOR Reduction (vph)	0	183	0	0	0	503
Lane Group Flow (vph)	2035	477	0	2237	822	150
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2				8
Actuated Green, G (s)	84.8	84.8		84.8	22.2	22.2
Effective Green, g (s)	85.8	85.8		85.8	23.2	23.2
Actuated g/C Ratio	0.71	0.71		0.71	0.19	0.19
Clearance Time (s)	5.7	5.7		5.7	7.3	7.3
Vehicle Extension (s)	3.8	3.8		4.3	2.0	2.0
Lane Grp Cap (vph)	3726	1160		3635	964	538
v/s Ratio Prot	0.39			c0.44	c0.16	
v/s Ratio Perm		0.29				0.05
v/c Ratio	0.55	0.41		0.62	0.85	0.28
Uniform Delay, d1	8.0	6.9		8.7	46.7	41.3
Progression Factor	0.74	2.98		0.47	1.00	1.00
Incremental Delay, d2	0.1	0.2		0.3	7.1	0.1
Delay (s)	6.0	20.8		4.4	53.9	41.4
Level of Service	A	C		A	D	D
Approach Delay (s)	9.7			4.4	48.3	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

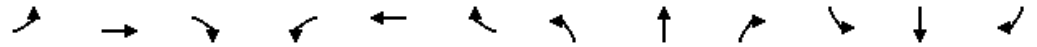
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰↰		↱↱
Volume (vph)	0	2468	10	0	2284	622	0	0	0	92	0	491
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			0%			0%			0%	
Total Lost time (s)		4.7	5.7		4.7	3.0				4.3		4.3
Lane Util. Factor		0.91	1.00		0.91	1.00				0.97		0.88
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5212	1623		5085	1583				3433		2787
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5212	1623		5085	1583				3433		2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2598	11	0	2404	655	0	0	0	97	0	517
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	2598	8	0	2404	655	0	0	0	97	0	498
Turn Type		NA	Perm		NA	Free				Prot		Perm
Protected Phases		2			6					4		
Permitted Phases			2			Free						4
Actuated Green, G (s)		83.0	83.0		83.0	120.0				26.0		26.0
Effective Green, g (s)		84.0	83.0		84.0	120.0				27.0		27.0
Actuated g/C Ratio		0.70	0.69		0.70	1.00				0.22		0.22
Clearance Time (s)		5.7	5.7		5.7					5.3		5.3
Vehicle Extension (s)		4.3	4.3		3.9					2.0		2.0
Lane Grp Cap (vph)		3648	1122		3559	1583				772		627
v/s Ratio Prot		c0.50			0.47					0.03		
v/s Ratio Perm			0.00			0.41						c0.18
v/c Ratio		0.71	0.01		0.68	0.41				0.13		0.79
Uniform Delay, d1		10.8	5.7		10.2	0.0				37.1		43.9
Progression Factor		0.92	0.54		1.71	1.00				1.00		1.00
Incremental Delay, d2		0.6	0.0		0.4	0.6				0.0		6.4
Delay (s)		10.5	3.1		17.9	0.6				37.1		50.3
Level of Service		B	A		B	A				D		D
Approach Delay (s)		10.5			14.2			0.0			48.2	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

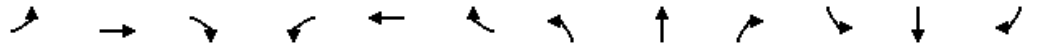


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	850	0	458	0	1818	186	0	977	957
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Lane Util. Factor				0.94		1.00		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				4990		1583		5085	1583		5085	1583
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				4990		1583		5085	1583		5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	867	0	467	0	1855	190	0	997	977
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	80	0	0	410
Lane Group Flow (vph)	0	0	0	867	0	450	0	1855	110	0	997	567
Turn Type				Perm		Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases				8		8			2			6
Actuated Green, G (s)				28.6		28.6		54.3	54.3		54.3	54.3
Effective Green, g (s)				28.6		28.6		54.3	54.3		54.3	54.3
Actuated g/C Ratio				0.31		0.31		0.58	0.58		0.58	0.58
Clearance Time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Vehicle Extension (s)				2.0		2.0		3.8	3.8		3.9	3.9
Lane Grp Cap (vph)				1526		484		2953	919		2953	919
v/s Ratio Prot								c0.36			0.20	
v/s Ratio Perm				0.17		c0.28			0.07			0.36
v/c Ratio				0.57		0.93		0.63	0.12		0.34	0.62
Uniform Delay, d1				27.3		31.5		12.9	8.8		10.2	12.8
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.3		23.9		0.5	0.1		0.1	1.4
Delay (s)				27.6		55.3		13.4	8.9		10.3	14.2
Level of Service				C		E		B	A		B	B
Approach Delay (s)		0.0			37.3			13.0			12.2	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	10.6
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	495	0	0	867	812	1669	0	0	1796	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0			4.0	3.0	4.3			4.3	4.3
Lane Util. Factor			1.00			1.00	0.97	0.91			0.91	1.00
Frt			0.86			0.86	1.00	1.00			1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1611			1611	3433	5085			5085	1583
Flt Permitted			1.00			1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1611			1611	3433	5085			5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	521	0	0	913	855	1757	0	0	1891	371
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	38
Lane Group Flow (vph)	0	0	521	0	0	913	855	1757	0	0	1891	333
Turn Type			Free			Free	Prot	NA			NA	Perm
Protected Phases							5	2			6	
Permitted Phases			Free			Free						6
Actuated Green, G (s)			120.0			120.0	37.6	120.0			73.1	73.1
Effective Green, g (s)			120.0			120.0	38.6	120.0			74.1	74.1
Actuated g/C Ratio			1.00			1.00	0.32	1.00			0.62	0.62
Clearance Time (s)							4.0	5.3			5.3	5.3
Vehicle Extension (s)							3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			1611			1611	1104	5085			3139	977
v/s Ratio Prot							c0.25	0.35			c0.37	
v/s Ratio Perm			0.32			0.57						0.21
v/c Ratio			0.32			0.57	0.77	0.35			0.60	0.34
Uniform Delay, d1			0.0			0.0	36.8	0.0			14.0	11.1
Progression Factor			1.00			1.00	1.09	1.00			0.58	0.59
Incremental Delay, d2			0.5			1.5	2.4	0.0			0.7	0.8
Delay (s)			0.5			1.5	42.6	0.0			8.7	7.3
Level of Service			A			A	D	A			A	A
Approach Delay (s)		0.5			1.5			14.0			8.5	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.3
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



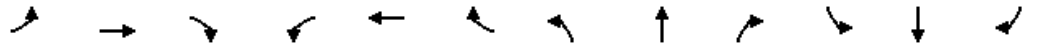
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	911	0	0	168	0	2313	586	560	1731	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.3			3.0		4.7	4.7	4.7	4.7	
Lane Util. Factor			1.00			1.00		0.91	1.00	0.97	0.91	
Frt			0.86			0.86		1.00	0.85	1.00	1.00	
Flt Protected			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1611			1611		5085	1583	3433	5085	
Flt Permitted			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1611			1611		5085	1583	3433	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	959	0	0	177	0	2435	617	589	1822	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	16	0	0	0
Lane Group Flow (vph)	0	0	959	0	0	177	0	2435	601	589	1822	0
Turn Type			Perm			Free		NA	Perm	Prot	NA	
Protected Phases								2		1	6	
Permitted Phases			5			Free			2			
Actuated Green, G (s)			39.7			120.0		79.3	79.3	29.3	69.3	
Effective Green, g (s)			39.7			120.0		80.3	80.3	30.3	70.3	
Actuated g/C Ratio			0.33			1.00		0.67	0.67	0.25	0.59	
Clearance Time (s)			5.3					5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)			532			1611		3402	1059	866	2978	
v/s Ratio Prot								c0.48		c0.17	0.36	
v/s Ratio Perm			c0.60			0.11			0.38			
v/c Ratio			1.80			0.11		0.72	0.57	0.68	0.61	
Uniform Delay, d1			40.1			0.0		12.6	10.6	40.5	16.0	
Progression Factor			1.00			1.00		0.50	0.46	1.16	1.37	
Incremental Delay, d2			368.6			0.1		0.9	1.5	1.8	0.8	
Delay (s)			408.8			0.1		7.1	6.4	48.8	22.9	
Level of Service			F			A		A	A	D	C	
Approach Delay (s)		408.8			0.1			7.0			29.2	
Approach LOS		F			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	73.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL	SBR	SBR2
Lane Configurations												
Volume (vph)	216	1355	320	1729	1440	68	152	459	551	390	301	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	5.7	5.7	5.7	4.0	5.3	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	0.86	0.86	1.00	1.00	0.95	1.00	0.97	0.88	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.98	1.00	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	0.96	0.85	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1548	4574	1339	1583	1770	3539	1562	3433	2787	
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1548	4574	1339	1583	1770	3539	1562	3433	2787	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	227	1426	337	1820	1516	72	160	483	580	411	317	56
RTOR Reduction (vph)	0	0	0	0	0	43	0	0	0	0	40	0
Lane Group Flow (vph)	227	1426	337	2563	773	29	160	483	580	411	333	0
Confl. Peds. (#/hr)			5		5				5		5	
Turn Type	Prot	NA	Free	NA	Perm	Perm	Prot	NA	Free	Prot	pt+ov	
Protected Phases	5	2		6			3	8		7	4 5	
Permitted Phases			Free		6	6			Free			
Actuated Green, G (s)	12.3	64.8	120.0	48.5	48.5	48.5	16.6	22.1	120.0	18.1	41.2	
Effective Green, g (s)	12.3	64.8	120.0	48.5	48.5	48.5	16.6	22.1	120.0	18.1	41.2	
Actuated g/C Ratio	0.10	0.54	1.00	0.40	0.40	0.40	0.14	0.18	1.00	0.15	0.34	
Clearance Time (s)	4.0	5.7		5.7	5.7	5.7	4.0	5.3		4.0		
Vehicle Extension (s)	2.0	3.4		3.4	3.4	3.4	4.0	4.0		2.0		
Lane Grp Cap (vph)	351	1911	1548	1848	541	639	244	651	1562	517	956	
v/s Ratio Prot	0.07	c0.40		0.56			0.09	c0.14		c0.12	0.12	
v/s Ratio Perm			0.22		c0.58	0.02			c0.37			
v/c Ratio	0.65	0.75	0.22	1.39	1.43	0.05	0.66	0.74	0.37	0.79	0.35	
Uniform Delay, d1	51.8	21.3	0.0	35.8	35.8	21.7	49.0	46.3	0.0	49.2	29.4	
Progression Factor	1.00	1.00	1.00	0.87	0.88	2.55	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	2.7	0.3	176.2	199.6	0.0	6.9	4.9	0.7	7.7	0.1	
Delay (s)	54.8	24.0	0.3	207.5	231.0	55.3	55.9	51.1	0.7	56.9	29.5	
Level of Service	D	C	A	F	F	E	E	D	A	E	C	
Approach Delay (s)		23.5		209.6				27.8				
Approach LOS		C		F				C				

Intersection Summary			
HCM 2000 Control Delay	112.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

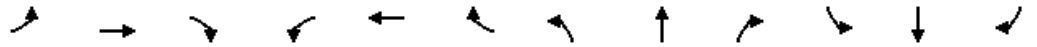
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	1026	4	4	746	52	18	1	10	21	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	0.99		1.00	0.86		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1862		1770	1844		1770	3053		1770	3008	
Flt Permitted	0.25	1.00		0.12	1.00		0.74	1.00		0.75	1.00	
Satd. Flow (perm)	468	1862		215	1844		1371	3053		1396	3008	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1080	4	4	785	55	19	1	11	22	0	31
RTOR Reduction (vph)	0	0	0	0	3	0	0	10	0	0	27	0
Lane Group Flow (vph)	57	1084	0	4	837	0	19	2	0	22	4	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	37.5	37.5		37.5	37.5		7.8	7.8		7.8	7.8	
Effective Green, g (s)	37.5	37.5		37.5	37.5		7.8	7.8		7.8	7.8	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.14	0.14		0.14	0.14	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	317	1262		145	1250		193	430		196	424	
v/s Ratio Prot		c0.58			0.45			0.00			0.00	
v/s Ratio Perm	0.12			0.02			0.01			c0.02		
v/c Ratio	0.18	0.86		0.03	0.67		0.10	0.00		0.11	0.01	
Uniform Delay, d1	3.3	6.9		2.9	5.2		20.7	20.4		20.7	20.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	6.0		0.1	1.4		0.2	0.0		0.3	0.0	
Delay (s)	3.5	12.9		3.0	6.6		20.9	20.4		21.0	20.4	
Level of Service	A	B		A	A		C	C		C	C	
Approach Delay (s)		12.4			6.6			20.7			20.7	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	55.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰↰		↱		↑↑	↱	↰	↑↑	
Volume (vph)	0	424	132	118	0	475	0	1511	70	108	1532	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3	4.0		4.0		4.9	4.9	4.0	4.9	
Lane Util. Factor		0.95	1.00	0.97		1.00		0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	3433		1583		3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	3433		1583		3539	1583	1770	3539	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	433	135	120	0	485	0	1542	71	110	1563	0
RTOR Reduction (vph)	0	0	110	0	0	0	0	0	45	0	0	0
Lane Group Flow (vph)	0	433	25	120	0	485	0	1542	26	110	1563	0
Turn Type		NA	Perm	Prot		pt+ov		NA	Perm	Prot	NA	
Protected Phases		4		3		3 1		2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		22.2	22.2	25.0		45.0		50.1	50.1	20.0	74.1	
Effective Green, g (s)		22.2	22.2	25.0		45.0		50.1	50.1	20.0	74.1	
Actuated g/C Ratio		0.16	0.16	0.18		0.33		0.37	0.37	0.15	0.55	
Clearance Time (s)		5.3	5.3	4.0				4.9	4.9	4.0	4.9	
Vehicle Extension (s)		2.8	2.8	2.0				3.6	3.6	2.0	3.6	
Lane Grp Cap (vph)		579	259	633		525		1308	585	261	1935	
v/s Ratio Prot		c0.12		0.03		c0.31		c0.44		0.06	0.44	
v/s Ratio Perm			0.02						0.02			
v/c Ratio		0.75	0.10	0.19		0.92		1.18	0.04	0.42	0.81	
Uniform Delay, d1		54.0	48.1	46.7		43.6		42.7	27.4	52.5	24.9	
Progression Factor		1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.1	0.1	0.1		21.8		88.7	0.0	0.4	2.7	
Delay (s)		59.1	48.3	46.7		65.4		131.4	27.4	52.9	27.6	
Level of Service		E	D	D		E		F	C	D	C	
Approach Delay (s)		56.6			61.7			126.9			29.3	
Approach LOS		E			E			F			C	

Intersection Summary			
HCM 2000 Control Delay	72.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	135.5	Sum of lost time (s)	18.2
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	648	59	266	199	19	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		4.0	3.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3495		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3495		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	682	62	280	209	20	238
RTOR Reduction (vph)	8	0	0	0	0	195
Lane Group Flow (vph)	736	0	280	209	20	43
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	17.3		13.5	35.8	8.8	8.8
Effective Green, g (s)	19.3		14.5	37.8	9.8	9.8
Actuated g/C Ratio	0.35		0.27	0.69	0.18	0.18
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1235		470	2450	317	284
v/s Ratio Prot	c0.21		c0.16	0.06	0.01	
v/s Ratio Perm						c0.03
v/c Ratio	0.60		0.60	0.09	0.06	0.15
Uniform Delay, d1	14.5		17.5	2.7	18.6	18.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		2.0	0.0	0.1	0.2
Delay (s)	15.2		19.5	2.8	18.7	19.1
Level of Service	B		B	A	B	B
Approach Delay (s)	15.2			12.4	19.1	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	11.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	25	442	202	743	1504	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	3.0	3.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	465	213	782	1583	17
RTOR Reduction (vph)	0	196	0	0	0	7
Lane Group Flow (vph)	26	269	213	782	1583	10
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	16.3	16.3	12.0	61.3	44.3	44.3
Effective Green, g (s)	16.3	16.3	12.0	63.3	46.3	44.3
Actuated g/C Ratio	0.19	0.19	0.14	0.72	0.53	0.51
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	329	294	242	2557	1870	800
v/s Ratio Prot	0.01		c0.12	0.22	c0.45	
v/s Ratio Perm		c0.17				0.01
v/c Ratio	0.08	0.91	0.88	0.31	0.85	0.01
Uniform Delay, d1	29.4	35.0	37.1	4.3	17.6	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	31.0	28.8	0.1	3.7	0.0
Delay (s)	29.6	66.0	65.9	4.4	21.4	10.8
Level of Service	C	E	E	A	C	B
Approach Delay (s)	64.1			17.6	21.3	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	87.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	9	466	0	4	103	41	788	0	294	1757	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	0.95		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.86	0.85		0.87		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1514	1504		1620		1770	3539		1770	3539	1583
Flt Permitted	0.68	1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1276	1514	1504		1620		1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	9	491	0	4	108	43	829	0	309	1849	73
RTOR Reduction (vph)	0	74	107	0	88	0	0	0	0	0	0	28
Lane Group Flow (vph)	53	176	143	0	24	0	43	829	0	309	1849	45
Turn Type	Perm	NA	Perm		NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4									6
Actuated Green, G (s)	15.7	15.7	15.7		15.7		2.1	34.6		19.9	52.4	52.4
Effective Green, g (s)	15.7	15.7	15.7		15.7		2.1	34.6		19.9	52.4	52.4
Actuated g/C Ratio	0.18	0.18	0.18		0.18		0.02	0.41		0.23	0.62	0.62
Clearance Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	235	278	277		298		43	1437		413	2176	973
v/s Ratio Prot		c0.12			0.01		0.02	0.23		c0.17	c0.52	
v/s Ratio Perm	0.04		0.10									0.03
v/c Ratio	0.23	0.63	0.52		0.08		1.00	0.58		0.75	0.85	0.05
Uniform Delay, d1	29.6	32.1	31.3		28.8		41.6	19.6		30.3	13.2	6.5
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	4.6	1.6		0.1		137.2	0.6		7.3	3.3	0.0
Delay (s)	30.1	36.7	33.0		28.9		178.8	20.2		37.6	16.5	6.5
Level of Service	C	D	C		C		F	C		D	B	A
Approach Delay (s)		34.4			28.9			28.0			19.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	85.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2220	0	80	3779	24	0	1	197	80	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0	5.0		5.0	5.0	5.0	5.0	
Lane Util. Factor		0.86		1.00	0.86	1.00		1.00	1.00	1.00	1.00	
Frt		1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6408		1770	6408	1583		1863	1583	1770	1863	
Flt Permitted		1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		6408		1770	6408	1583		1863	1583	1770	1863	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2337	0	84	3978	25	0	1	207	84	1	0
RTOR Reduction (vph)	0	0	0	0	0	6	0	0	109	0	0	0
Lane Group Flow (vph)	0	2337	0	84	3978	19	0	1	98	84	1	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		95.5		11.7	112.2	112.2		17.8	17.8	5.0	27.8	
Effective Green, g (s)		95.5		11.7	112.2	112.2		17.8	17.8	5.0	27.8	
Actuated g/C Ratio		0.64		0.08	0.75	0.75		0.12	0.12	0.03	0.19	
Clearance Time (s)		5.0		5.0	5.0	5.0		5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		4079		138	4793	1184		221	187	59	345	
v/s Ratio Prot		0.36		0.05	c0.62			0.00		c0.05	0.00	
v/s Ratio Perm						0.01			c0.06			
v/c Ratio		0.57		0.61	0.83	0.02		0.00	0.52	1.42	0.00	
Uniform Delay, d1		15.6		66.9	12.6	4.8		58.3	62.1	72.5	49.8	
Progression Factor		0.66		1.29	0.33	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4		4.4	0.7	0.0		0.0	2.6	264.6	0.0	
Delay (s)		10.7		90.7	4.9	4.8		58.3	64.7	337.1	49.8	
Level of Service		B		F	A	A		E	E	F	D	
Approach Delay (s)		10.7			6.6			64.7			333.7	
Approach LOS		B			A			E			F	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1188	486	244	611	101	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1251	512	257	643	106	341
RTOR Reduction (vph)	0	274	0	504	0	0
Lane Group Flow (vph)	1251	238	257	139	106	341
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	32.3	32.3	15.0	15.0	7.2	27.2
Effective Green, g (s)	32.3	32.3	15.0	15.0	7.2	27.2
Actuated g/C Ratio	0.46	0.46	0.22	0.22	0.10	0.39
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1595	735	763	341	183	1385
v/s Ratio Prot	c0.36		0.07		c0.06	0.10
v/s Ratio Perm		0.15		c0.09		
v/c Ratio	0.78	0.32	0.34	0.41	0.58	0.25
Uniform Delay, d1	15.7	11.7	23.0	23.4	29.7	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.3	0.3	0.8	4.4	0.1
Delay (s)	18.3	12.0	23.3	24.2	34.1	14.3
Level of Service	B	B	C	C	C	B
Approach Delay (s)	16.4		24.0			19.0
Approach LOS	B		C			B

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	247	25	890	666	320	64	434	569	128	136	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.91	0.88	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	260	26	937	701	337	67	457	599	135	143	32
RTOR Reduction (vph)	0	0	21	0	0	183	0	0	460	0	0	24
Lane Group Flow (vph)	51	260	5	937	701	154	67	457	139	135	143	8
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.5	13.9	13.9	28.7	38.1	38.1	6.1	18.9	18.9	8.2	21.0	21.0
Effective Green, g (s)	5.5	15.9	14.9	29.7	40.1	39.1	7.1	20.9	19.9	9.2	23.0	22.0
Actuated g/C Ratio	0.06	0.19	0.17	0.35	0.47	0.46	0.08	0.24	0.23	0.11	0.27	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	113	943	275	1189	2379	722	146	1240	647	190	1364	406
v/s Ratio Prot	0.03	0.05		c0.27	c0.14		0.04	c0.09		c0.08	0.03	
v/s Ratio Perm			0.00			0.10			0.05			0.01
v/c Ratio	0.45	0.28	0.02	0.79	0.29	0.21	0.46	0.37	0.21	0.71	0.10	0.02
Uniform Delay, d1	38.6	30.0	29.3	25.2	14.1	14.0	37.5	26.9	26.6	37.0	23.6	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.2	0.0	3.5	0.1	0.1	2.3	0.2	0.2	11.8	0.0	0.0
Delay (s)	41.5	30.1	29.4	28.7	14.1	14.2	39.7	27.1	26.8	48.8	23.6	23.8
Level of Service	D	C	C	C	B	B	D	C	C	D	C	C
Approach Delay (s)		31.8			21.1			27.7			34.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	85.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	153	925	45	113	1624	272	64	138	69	129	81	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	161	974	47	119	1709	286	67	145	73	136	85	86
RTOR Reduction (vph)	0	0	28	0	0	131	0	0	59	0	0	68
Lane Group Flow (vph)	161	974	19	119	1709	155	67	145	14	136	85	18
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.1	34.0	34.0	8.5	33.4	33.4	5.5	15.1	15.1	7.1	16.7	16.7
Effective Green, g (s)	10.1	36.0	35.0	9.5	35.4	34.4	6.5	17.1	16.1	8.1	18.7	17.7
Actuated g/C Ratio	0.12	0.43	0.41	0.11	0.42	0.41	0.08	0.20	0.19	0.10	0.22	0.21
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	211	2161	654	198	2125	642	135	376	300	169	411	330
v/s Ratio Prot	c0.09	0.19		0.07	c0.34		0.04	c0.08		c0.08	0.05	
v/s Ratio Perm			0.01			0.10			0.01			0.01
v/c Ratio	0.76	0.45	0.03	0.60	0.80	0.24	0.50	0.39	0.05	0.80	0.21	0.05
Uniform Delay, d1	36.1	17.3	14.8	35.8	21.6	16.6	37.5	29.3	28.0	37.5	26.9	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.0	0.2	0.0	5.1	2.3	0.2	2.9	0.7	0.1	23.5	0.3	0.1
Delay (s)	51.2	17.5	14.8	40.9	23.9	16.8	40.4	29.9	28.1	61.1	27.2	26.9
Level of Service	D	B	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		22.0			23.9			31.9			42.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	303	0	15	28	0	643	53	1599	25	227	1241	1001
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97		1.00	1.00		1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583	1770		1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583	1770		1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	319	0	16	29	0	677	56	1683	26	239	1306	1054
RTOR Reduction (vph)	0	0	15	0	0	51	0	0	17	0	0	248
Lane Group Flow (vph)	319	0	1	29	0	626	56	1683	9	239	1306	806
Turn Type	Prot		Prot	Prot		Over	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7		4	3		1	5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	19.1		11.7	2.4		58.1	5.5	50.0	50.0	58.1	102.6	102.6
Effective Green, g (s)	19.1		11.7	2.4		58.1	5.5	50.0	50.0	58.1	102.6	102.6
Actuated g/C Ratio	0.13		0.08	0.02		0.41	0.04	0.35	0.35	0.41	0.72	0.72
Clearance Time (s)	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	461		130	29		646	68	1787	556	723	3668	1142
v/s Ratio Prot	c0.09		0.00	0.02		c0.40	0.03	c0.33		0.14	0.26	
v/s Ratio Perm									0.01			0.51
v/c Ratio	0.69		0.01	1.00		0.97	0.82	0.94	0.02	0.33	0.36	0.71
Uniform Delay, d1	58.7		59.9	69.9		41.1	67.9	44.7	30.1	28.8	7.4	11.2
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5		0.0	167.1		27.3	52.8	10.5	0.0	0.3	0.1	2.0
Delay (s)	63.2		60.0	237.0		68.5	120.7	55.2	30.1	29.0	7.5	13.3
Level of Service	E		E	F		E	F	E	C	C	A	B
Approach Delay (s)		63.0			75.4			56.9			11.8	
Approach LOS		E			E			E			B	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	142.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	91.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	117	337	11	83	552	317	9	880	50	239	924	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	123	355	12	87	581	334	9	926	53	252	973	127
RTOR Reduction (vph)	0	0	8	0	0	101	0	0	33	0	0	69
Lane Group Flow (vph)	123	355	4	87	581	233	9	926	20	252	973	58
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.1	24.2	24.2	3.1	23.2	23.2	0.7	31.5	31.5	7.1	37.9	37.9
Effective Green, g (s)	5.1	26.2	25.2	4.1	25.2	24.2	1.7	33.5	32.5	8.1	39.9	38.9
Actuated g/C Ratio	0.06	0.31	0.29	0.05	0.29	0.28	0.02	0.39	0.38	0.09	0.46	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	203	1550	464	163	1038	445	67	1380	598	323	2361	716
v/s Ratio Prot	c0.04	0.07		0.03	c0.16		0.00	c0.26		c0.07	0.19	
v/s Ratio Perm			0.00			0.15			0.01			0.04
v/c Ratio	0.61	0.23	0.01	0.53	0.56	0.52	0.13	0.67	0.03	0.78	0.41	0.08
Uniform Delay, d1	39.4	22.3	21.5	40.0	25.7	26.0	41.4	21.6	16.8	38.0	15.2	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.1	0.0	3.3	0.7	1.1	0.9	1.3	0.0	11.5	0.1	0.0
Delay (s)	44.5	22.4	21.5	43.3	26.3	27.1	42.3	22.9	16.8	49.6	15.4	13.4
Level of Service	D	C	C	D	C	C	D	C	B	D	B	B
Approach Delay (s)		27.9			28.1			22.8			21.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	32	25	1652	62	36	1249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1705		5085	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1705		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	26	1739	65	38	1315
RTOR Reduction (vph)	24	0	0	24	0	0
Lane Group Flow (vph)	36	0	1739	41	38	1315
Turn Type	Prot		NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases				2		
Actuated Green, G (s)	5.0		39.4	39.4	2.8	47.2
Effective Green, g (s)	5.0		39.4	39.4	2.8	47.2
Actuated g/C Ratio	0.08		0.63	0.63	0.05	0.76
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	137		3221	1002	79	3858
v/s Ratio Prot	c0.02		c0.34		0.02	c0.26
v/s Ratio Perm				0.03		
v/c Ratio	0.26		0.54	0.04	0.48	0.34
Uniform Delay, d1	26.9		6.4	4.3	29.0	2.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0		0.2	0.0	4.6	0.1
Delay (s)	27.9		6.5	4.3	33.5	2.5
Level of Service	C		A	A	C	A
Approach Delay (s)	27.9		6.4			3.4
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	5.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	11	81	67	9	0	440	0	168	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0		5.0			
Lane Util. Factor		1.00	1.00		1.00		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (prot)		1863	1583		1784		1770		1583			
Flt Permitted		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (perm)		1863	1583		1784		1770		1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	12	85	71	9	0	463	0	177	0	0	0
RTOR Reduction (vph)	0	0	77	0	0	0	0	0	74	0	0	0
Lane Group Flow (vph)	0	12	8	0	80	0	463	0	103	0	0	0
Turn Type		NA	Perm	Split	NA	Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		7.0	7.0		8.6		29.8		42.7			
Effective Green, g (s)		7.0	7.0		8.6		29.8		42.7			
Actuated g/C Ratio		0.10	0.10		0.12		0.41		0.58			
Clearance Time (s)		5.0	5.0		5.0		5.0		5.0			
Vehicle Extension (s)		3.0	3.0		3.0		3.0		3.0			
Lane Grp Cap (vph)		177	151		209		719		922			
v/s Ratio Prot		c0.01			c0.04		c0.26					
v/s Ratio Perm			0.01						c0.07			
v/c Ratio		0.07	0.05		0.38		0.64		0.11			
Uniform Delay, d1		30.2	30.1		29.9		17.5		6.8			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.2	0.1		1.2		2.0		0.1			
Delay (s)		30.3	30.3		31.1		19.5		6.9			
Level of Service		C	C		C		B		A			
Approach Delay (s)		30.3			31.1			16.0			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

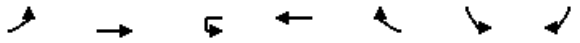
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	16	164	15	304	310	111	291	51	2	133	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1836	1583		1858	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.90	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1674	1583		1842	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	17	173	16	320	326	117	306	54	2	140	14
RTOR Reduction (vph)	0	0	113	0	0	214	0	0	35	0	0	11
Lane Group Flow (vph)	0	24	60	0	336	112	117	306	19	2	140	3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		17.6	17.6		17.6	17.6	6.8	17.6	17.6	0.9	11.7	11.7
Effective Green, g (s)		17.6	17.6		17.6	17.6	6.8	17.6	17.6	0.9	11.7	11.7
Actuated g/C Ratio		0.34	0.34		0.34	0.34	0.13	0.34	0.34	0.02	0.23	0.23
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		576	545		634	545	235	1218	545	31	810	362
v/s Ratio Prot							c0.07	c0.09		0.00	0.04	
v/s Ratio Perm		0.01	0.04		c0.18	0.07			0.01			0.00
v/c Ratio		0.04	0.11		0.53	0.21	0.50	0.25	0.03	0.06	0.17	0.01
Uniform Delay, d1		11.1	11.4		13.4	11.8	20.6	12.0	11.1	24.7	15.8	15.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.0	0.1		0.8	0.2	1.7	0.1	0.0	0.9	0.1	0.0
Delay (s)		11.2	11.5		14.2	12.0	22.2	12.1	11.1	25.6	15.9	15.2
Level of Service		B	B		B	B	C	B	B	C	B	B
Approach Delay (s)		11.5			13.1			14.5			16.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	117	309	428	42	323	914
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	123	325	451	44	340	962
RTOR Reduction (vph)	0	271	0	30	0	0
Lane Group Flow (vph)	123	54	451	14	340	962
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	10.1	10.1	19.8	19.8	16.1	40.9
Effective Green, g (s)	10.1	10.1	19.8	19.8	16.1	40.9
Actuated g/C Ratio	0.17	0.17	0.32	0.32	0.26	0.67
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	293	262	604	513	467	1249
v/s Ratio Prot	c0.07		0.24		0.19	c0.52
v/s Ratio Perm		0.03		0.01		
v/c Ratio	0.42	0.21	0.75	0.03	0.73	0.77
Uniform Delay, d1	22.8	22.0	18.4	14.0	20.5	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.4	5.0	0.0	5.6	3.0
Delay (s)	23.8	22.4	23.4	14.1	26.1	9.8
Level of Service	C	C	C	B	C	A
Approach Delay (s)	22.8		22.6			14.1
Approach LOS	C		C			B

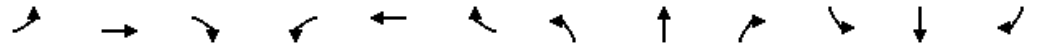
Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	441	2367	0	2264	100	74	954
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	4.0	5.0	4.0
Lane Util. Factor	1.00	0.91		0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085		5085	1548	1770	1562
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085		5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	464	2492	0	2383	105	78	1004
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	464	2492	0	2383	105	78	1004
Confl. Peds. (#/hr)					5		5
Turn Type	Prot	NA	Prot	NA	Free	Prot	Free
Protected Phases	5	2	1	6		7	
Permitted Phases					Free		Free
Actuated Green, G (s)	37.0	124.9		82.9	150.0	15.1	150.0
Effective Green, g (s)	37.0	124.9		82.9	150.0	15.1	150.0
Actuated g/C Ratio	0.25	0.83		0.55	1.00	0.10	1.00
Clearance Time (s)	5.0	5.0		5.0		5.0	
Vehicle Extension (s)	3.0	3.0		3.0		3.0	
Lane Grp Cap (vph)	436	4234		2810	1548	178	1562
v/s Ratio Prot	c0.26	0.49		c0.47		0.04	
v/s Ratio Perm					0.07		c0.64
v/c Ratio	1.06	0.59		0.85	0.07	0.44	0.64
Uniform Delay, d1	56.5	4.1		28.2	0.0	63.5	0.0
Progression Factor	0.84	1.76		1.00	1.00	1.00	1.00
Incremental Delay, d2	34.1	0.1		3.4	0.1	1.7	2.0
Delay (s)	81.5	7.3		31.7	0.1	65.2	2.0
Level of Service	F	A		C	A	E	A
Approach Delay (s)		19.0		30.3		6.6	
Approach LOS		B		C		A	

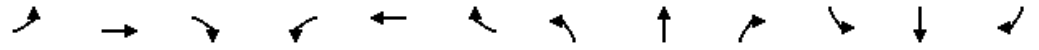
Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1	30	0	3	30	39	1207	0	34	931	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1592			1863	1583	1770	3539		1770	3489	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1592			1863	1583	1770	3539		1770	3489	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	1	32	0	3	32	41	1271	0	36	980	102
RTOR Reduction (vph)	0	28	0	0	0	30	0	0	0	0	6	0
Lane Group Flow (vph)	63	5	0	0	3	2	41	1271	0	36	1076	0
Turn Type	Split	NA			NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	7.9	7.9			4.1	4.1	2.3	38.1		1.3	37.1	
Effective Green, g (s)	7.9	7.9			4.1	4.1	2.3	38.1		1.3	37.1	
Actuated g/C Ratio	0.11	0.11			0.06	0.06	0.03	0.53		0.02	0.52	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	195	176			106	90	57	1888		32	1812	
v/s Ratio Prot	c0.04	0.00			c0.00		c0.02	c0.36		0.02	0.31	
v/s Ratio Perm						0.00						
v/c Ratio	0.32	0.03			0.03	0.02	0.72	0.67		1.12	0.59	
Uniform Delay, d1	29.3	28.3			31.8	31.8	34.2	12.1		35.1	11.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.1			0.1	0.1	35.1	1.0		199.2	0.5	
Delay (s)	30.3	28.4			31.9	31.8	69.3	13.1		234.3	12.4	
Level of Service	C	C			C	C	E	B		F	B	
Approach Delay (s)		29.6			31.8			14.8			19.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1008	17	16	1199	64	28	1	27	38	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0		4.0	3.0			3.0	4.0		3.0	
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00		1.00	
Frt		1.00		1.00	0.99			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			0.95	1.00		0.95	
Satd. Flow (prot)		3530		1770	3512			1777	1583		1770	
Flt Permitted		1.00		0.95	1.00			0.95	1.00		0.95	
Satd. Flow (perm)		3530		1770	3512			1777	1583		1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1061	18	17	1262	67	29	1	28	40	0	0
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	24	0	0	0
Lane Group Flow (vph)	0	1078	0	17	1326	0	0	30	4	0	40	0
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases									2			
Actuated Green, G (s)		28.0		1.1	34.1			7.7	7.7		7.9	
Effective Green, g (s)		30.0		2.1	36.1			9.7	8.7		9.9	
Actuated g/C Ratio		0.46		0.03	0.56			0.15	0.13		0.15	
Clearance Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		1636		57	1959			266	212		270	
v/s Ratio Prot		0.31		0.01	c0.38			c0.02			c0.02	
v/s Ratio Perm									0.00			
v/c Ratio		0.66		0.30	0.68			0.11	0.02		0.15	
Uniform Delay, d1		13.4		30.6	10.2			23.8	24.3		23.7	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.0		2.9	0.9			0.2	0.0		0.3	
Delay (s)		14.4		33.5	11.1			24.0	24.3		24.0	
Level of Service		B		C	B			C	C		C	
Approach Delay (s)		14.4			11.4			24.1			24.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	17.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	349	2	50	239	6	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	367	2	53	252	6	57
RTOR Reduction (vph)	0	1	0	0	0	44
Lane Group Flow (vph)	367	1	53	252	6	13
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	9.9	9.9	2.3	17.2	7.7	7.7
Effective Green, g (s)	9.9	9.9	2.3	17.2	7.7	7.7
Actuated g/C Ratio	0.28	0.28	0.07	0.49	0.22	0.22
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1003	449	116	1744	390	349
v/s Ratio Prot	c0.10		c0.03	0.07	0.00	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.37	0.00	0.46	0.14	0.02	0.04
Uniform Delay, d1	10.0	9.0	15.7	4.8	10.6	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	2.8	0.0	0.0	0.0
Delay (s)	10.2	9.0	18.5	4.9	10.7	10.7
Level of Service	B	A	B	A	B	B
Approach Delay (s)	10.2			7.2	10.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	34.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	32	105	345	1138	1303	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	111	363	1198	1372	57
RTOR Reduction (vph)	0	101	0	0	0	26
Lane Group Flow (vph)	34	10	363	1198	1372	31
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	7.2	7.2	19.4	59.8	35.4	35.4
Effective Green, g (s)	7.2	7.2	19.4	59.8	35.4	35.4
Actuated g/C Ratio	0.09	0.09	0.25	0.78	0.46	0.46
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	165	148	445	2748	1627	727
v/s Ratio Prot	c0.02		c0.21	0.34	c0.39	
v/s Ratio Perm		0.01				0.02
v/c Ratio	0.21	0.07	0.82	0.44	0.84	0.04
Uniform Delay, d1	32.3	31.8	27.1	2.9	18.4	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	11.0	0.1	4.2	0.0
Delay (s)	32.9	32.0	38.1	3.0	22.5	11.5
Level of Service	C	C	D	A	C	B
Approach Delay (s)	32.2			11.2	22.1	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	77.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	290	457	5	467	31	747	127	8	54	73	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	305	481	5	492	33	786	134	8	57	77	0
RTOR Reduction (vph)	0	0	368	0	0	23	0	0	4	0	0	0
Lane Group Flow (vph)	0	305	113	5	492	10	786	134	4	57	77	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		15.4	15.4	0.5	20.9	20.9	22.3	30.0	30.0	4.0	11.7	
Effective Green, g (s)		17.4	16.4	1.5	22.9	21.9	23.3	32.0	31.0	5.0	13.7	
Actuated g/C Ratio		0.25	0.23	0.02	0.33	0.31	0.33	0.46	0.44	0.07	0.20	
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		880	371	37	1159	495	1144	1620	702	126	693	
v/s Ratio Prot		0.09		0.00	c0.14		c0.23	0.04		0.03	c0.02	
v/s Ratio Perm			0.07			0.01			0.00			
v/c Ratio		0.35	0.30	0.14	0.42	0.02	0.69	0.08	0.01	0.45	0.11	
Uniform Delay, d1		21.6	22.0	33.6	18.4	16.6	20.1	10.7	10.8	31.1	23.1	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.5	1.7	0.3	0.0	1.7	0.0	0.0	2.6	0.1	
Delay (s)		21.8	22.5	35.2	18.6	16.6	21.9	10.7	10.9	33.7	23.2	
Level of Service		C	C	D	B	B	C	B	B	C	C	
Approach Delay (s)		22.2			18.6			20.2			27.6	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	16	26	306	40	17	63	951	336	29	658	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	17	27	322	42	18	66	1001	354	31	693	14
RTOR Reduction (vph)	0	0	24	0	0	12	0	0	233	0	0	10
Lane Group Flow (vph)	6	17	3	322	42	6	66	1001	121	31	693	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	6.8	6.8	16.4	22.7	22.7	3.1	21.7	21.7	1.3	19.9	19.9
Effective Green, g (s)	1.5	8.8	7.8	17.4	24.7	23.7	4.1	23.7	22.7	2.3	21.9	20.9
Actuated g/C Ratio	0.02	0.13	0.12	0.26	0.37	0.36	0.06	0.36	0.34	0.03	0.33	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	40	247	186	465	695	566	109	1820	542	61	1682	499
v/s Ratio Prot	0.00	0.01		c0.18	c0.02		c0.04	c0.20		0.02	0.14	
v/s Ratio Perm			0.00			0.00			0.08			0.00
v/c Ratio	0.15	0.07	0.02	0.69	0.06	0.01	0.61	0.55	0.22	0.51	0.41	0.01
Uniform Delay, d1	31.7	25.1	25.8	22.0	13.3	13.7	30.3	17.0	15.5	31.4	17.2	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.1	0.0	4.4	0.0	0.0	9.2	0.4	0.2	6.5	0.2	0.0
Delay (s)	33.5	25.2	25.8	26.4	13.3	13.7	39.4	17.3	15.7	37.9	17.3	15.5
Level of Service	C	C	C	C	B	B	D	B	B	D	B	B
Approach Delay (s)		26.6			24.4			18.0			18.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	66.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	3	9	146	9	55	23	1318	61	49	947	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	3	9	154	9	58	24	1387	64	52	997	7
RTOR Reduction (vph)	0	0	8	0	0	48	0	0	33	0	0	3
Lane Group Flow (vph)	4	3	1	154	9	10	24	1387	31	52	997	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	4.2	4.2	8.4	12.1	12.1	0.7	32.0	32.0	2.3	33.6	33.6
Effective Green, g (s)	0.5	4.2	4.2	8.4	12.1	12.1	0.7	32.0	32.0	2.3	33.6	33.6
Actuated g/C Ratio	0.01	0.06	0.06	0.13	0.18	0.18	0.01	0.48	0.48	0.03	0.50	0.50
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	222	99	222	640	286	18	2432	757	60	2553	795
v/s Ratio Prot	0.00	0.00		c0.09	0.00		0.01	c0.27		c0.03	0.20	
v/s Ratio Perm			0.00			c0.01			0.02			0.00
v/c Ratio	0.31	0.01	0.01	0.69	0.01	0.04	1.33	0.57	0.04	0.87	0.39	0.00
Uniform Delay, d1	33.0	29.4	29.4	28.0	22.5	22.6	33.1	12.5	9.3	32.1	10.3	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.0	0.0	0.0	9.0	0.0	0.1	331.2	0.3	0.0	69.9	0.1	0.0
Delay (s)	46.0	29.4	29.4	37.0	22.5	22.6	364.3	12.8	9.3	102.0	10.4	8.3
Level of Service	D	C	C	D	C	C	F	B	A	F	B	A
Approach Delay (s)		33.6			32.7			18.4			14.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	66.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	479	1188	6	494	1035	68	11	961	488	54	687	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	4.0	4.0	2.0	4.0	4.0	2.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	504	1251	6	520	1089	72	12	1012	514	57	723	374
RTOR Reduction (vph)	0	0	4	0	0	49	0	0	244	0	0	239
Lane Group Flow (vph)	504	1251	2	520	1089	23	12	1012	270	57	723	135
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.2	33.4	33.4	18.3	33.5	33.5	0.7	35.4	35.4	3.0	37.7	37.7
Effective Green, g (s)	19.2	36.4	34.4	19.3	36.5	34.5	1.7	38.4	37.4	4.0	39.7	39.7
Actuated g/C Ratio	0.17	0.33	0.31	0.18	0.33	0.31	0.02	0.35	0.34	0.04	0.36	0.36
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	598	1681	494	601	1685	496	53	1773	537	124	1833	570
v/s Ratio Prot	0.15	c0.25		c0.15	0.21		0.00	c0.20		c0.02	0.14	
v/s Ratio Perm			0.00			0.01			0.17			0.09
v/c Ratio	0.84	0.74	0.00	0.87	0.65	0.05	0.23	0.57	0.50	0.46	0.39	0.24
Uniform Delay, d1	44.0	32.7	26.1	44.1	31.3	26.3	53.6	29.1	29.0	52.0	26.2	24.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.5	1.8	0.0	12.4	0.9	0.0	2.2	0.4	0.7	2.7	0.1	0.2
Delay (s)	54.4	34.5	26.1	56.5	32.2	26.4	55.7	29.6	29.7	54.7	26.4	24.8
Level of Service	D	C	C	E	C	C	E	C	C	D	C	C
Approach Delay (s)		40.2			39.5			29.8			27.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	60	43	157	150	0	94	911	259	1	707	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	63	45	165	158	0	99	959	273	1	744	183
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	149	0	0	112
Lane Group Flow (vph)	60	63	7	165	158	0	99	959	124	1	744	71
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.6	9.9	9.9	8.3	14.6		5.1	30.3	30.3	0.5	25.7	25.7
Effective Green, g (s)	4.6	10.9	10.9	9.3	15.6		6.1	32.3	31.3	1.5	27.7	26.7
Actuated g/C Ratio	0.07	0.16	0.16	0.13	0.23		0.09	0.47	0.45	0.02	0.40	0.39
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	118	294	250	238	421		156	2380	718	38	2041	612
v/s Ratio Prot	0.03	0.03		c0.09	c0.08		c0.06	c0.19		0.00	0.15	
v/s Ratio Perm			0.00						0.08			0.04
v/c Ratio	0.51	0.21	0.03	0.69	0.38		0.63	0.40	0.17	0.03	0.36	0.12
Uniform Delay, d1	31.1	25.3	24.6	28.5	22.6		30.4	12.0	11.2	33.0	14.5	13.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.4	0.0	8.4	0.6		8.2	0.1	0.1	0.3	0.1	0.1
Delay (s)	34.5	25.7	24.6	36.9	23.1		38.5	12.1	11.3	33.3	14.6	13.7
Level of Service	C	C	C	D	C		D	B	B	C	B	B
Approach Delay (s)		28.6			30.2			13.9			14.4	
Approach LOS		C			C			B			B	

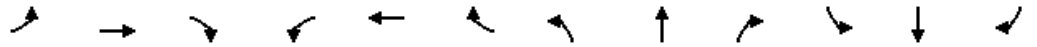
Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	63	9	537	206	29	40	1316	241	48	842	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.3	4.3	4.0	3.3	4.3
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	66	9	565	217	31	42	1385	254	51	886	53
RTOR Reduction (vph)	0	0	8	0	0	17	0	0	115	0	0	36
Lane Group Flow (vph)	19	66	1	565	217	14	42	1385	139	51	886	17
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.4	11.6	11.6	39.9	50.1	50.1	3.9	35.6	35.6	3.1	34.8	34.8
Effective Green, g (s)	2.4	12.6	12.6	40.9	51.1	51.1	4.9	37.6	36.6	4.1	36.8	35.8
Actuated g/C Ratio	0.02	0.11	0.11	0.37	0.46	0.46	0.04	0.34	0.33	0.04	0.33	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	38	403	180	655	1636	732	78	1730	524	65	1693	512
v/s Ratio Prot	0.01	c0.02		c0.32	0.06		0.02	c0.27		c0.03	0.17	
v/s Ratio Perm			0.00			0.01			0.09			0.01
v/c Ratio	0.50	0.16	0.01	0.86	0.13	0.02	0.54	0.80	0.27	0.78	0.52	0.03
Uniform Delay, d1	53.5	44.2	43.4	32.2	17.0	16.1	51.7	33.1	27.1	52.8	29.8	25.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.0	0.2	0.0	11.3	0.0	0.0	7.0	2.8	0.3	44.9	0.3	0.0
Delay (s)	63.4	44.4	43.4	43.5	17.0	16.1	58.7	35.8	27.4	97.7	30.1	25.6
Level of Service	E	D	D	D	B	B	E	D	C	F	C	C
Approach Delay (s)		48.1			35.4			35.1			33.3	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.5	Sum of lost time (s)	15.3
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	580	856	26	416	970	232	14	738	290	158	775	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	4.0	3.0	5.0	4.0	2.0	4.0	4.0	2.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	611	901	27	438	1021	244	15	777	305	166	816	426
RTOR Reduction (vph)	0	0	18	0	0	77	0	0	219	0	0	288
Lane Group Flow (vph)	611	901	9	438	1021	167	15	777	86	166	816	138
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.1	34.1	34.1	17.8	30.8	30.8	1.4	29.5	29.5	6.1	34.2	34.2
Effective Green, g (s)	22.1	37.1	35.1	18.8	33.8	31.8	2.4	32.5	30.5	7.1	37.2	35.2
Actuated g/C Ratio	0.20	0.34	0.32	0.17	0.31	0.29	0.02	0.30	0.28	0.07	0.34	0.32
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	699	1738	512	594	1584	463	75	1523	444	224	1743	513
v/s Ratio Prot	c0.18	c0.18		0.13	c0.20		0.00	c0.15		c0.05	0.16	
v/s Ratio Perm			0.01			0.11			0.05			0.09
v/c Ratio	0.87	0.52	0.02	0.74	0.64	0.36	0.20	0.51	0.19	0.74	0.47	0.27
Uniform Delay, d1	41.9	28.6	25.0	42.5	32.2	30.3	52.1	31.4	29.6	49.8	27.9	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7	0.3	0.0	4.8	0.9	0.5	1.3	0.3	0.2	12.4	0.2	0.3
Delay (s)	53.6	28.8	25.0	47.3	33.1	30.8	53.4	31.7	29.9	62.2	28.1	27.4
Level of Service	D	C	C	D	C	C	D	C	C	E	C	C
Approach Delay (s)		38.6			36.4			31.5			31.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	108.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	256	46	44	856	6	71	78	12	3	52	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	269	48	46	901	6	75	82	13	3	55	43
RTOR Reduction (vph)	0	0	30	0	0	4	0	0	10	0	0	33
Lane Group Flow (vph)	77	269	18	46	901	2	75	82	3	3	55	10
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.0	18.9	18.9	1.3	17.2	17.2	2.1	13.1	13.1	0.6	11.6	11.6
Effective Green, g (s)	4.0	20.9	19.9	2.3	19.2	18.2	3.1	15.1	14.1	1.6	13.6	12.6
Actuated g/C Ratio	0.07	0.39	0.37	0.04	0.36	0.34	0.06	0.28	0.26	0.03	0.25	0.23
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	131	1372	584	75	1260	534	101	521	414	52	470	370
v/s Ratio Prot	c0.04	0.08		0.03	c0.25		c0.04	c0.04		0.00	0.03	
v/s Ratio Perm			0.01			0.00			0.00			0.01
v/c Ratio	0.59	0.20	0.03	0.61	0.72	0.00	0.74	0.16	0.01	0.06	0.12	0.03
Uniform Delay, d1	24.2	10.9	10.8	25.4	15.0	11.8	25.0	14.6	14.7	25.4	15.5	15.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	0.1	0.0	14.0	2.0	0.0	25.2	0.1	0.0	0.5	0.1	0.0
Delay (s)	30.7	11.0	10.9	39.3	16.9	11.8	50.2	14.8	14.7	25.9	15.6	16.0
Level of Service	C	B	B	D	B	B	D	B	B	C	B	B
Approach Delay (s)		14.8			18.0			30.4			16.1	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	53.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	1161	118	25	1416	200	102	114	11	104	73	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	1222	124	26	1491	211	107	120	12	109	77	25
RTOR Reduction (vph)	0	0	72	0	0	117	0	0	10	0	0	20
Lane Group Flow (vph)	25	1222	52	26	1491	94	107	120	2	109	77	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.3	27.2	27.2	1.3	27.2	27.2	6.2	12.1	12.1	6.2	12.1	12.1
Effective Green, g (s)	2.3	29.2	28.2	2.3	29.2	28.2	7.2	14.1	13.1	7.2	14.1	13.1
Actuated g/C Ratio	0.03	0.44	0.42	0.03	0.44	0.42	0.11	0.21	0.20	0.11	0.21	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	60	2222	668	60	2222	668	190	393	310	190	393	310
v/s Ratio Prot	0.01	0.24		c0.01	c0.29		0.06	c0.06		c0.06	0.04	
v/s Ratio Perm			0.03			0.06			0.00			0.00
v/c Ratio	0.42	0.55	0.08	0.43	0.67	0.14	0.56	0.31	0.01	0.57	0.20	0.02
Uniform Delay, d1	31.6	13.9	11.5	31.6	15.0	11.9	28.3	22.2	21.6	28.3	21.7	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	0.3	0.1	5.0	0.8	0.1	3.8	0.4	0.0	4.1	0.2	0.0
Delay (s)	36.2	14.2	11.6	36.6	15.8	12.0	32.1	22.7	21.6	32.5	21.9	21.7
Level of Service	D	B	B	D	B	B	C	C	C	C	C	C
Approach Delay (s)		14.4			15.6			26.8			27.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	815	80	181	1425	104	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	858	84	191	1500	109	117
RTOR Reduction (vph)	0	50	0	0	0	97
Lane Group Flow (vph)	858	34	191	1500	109	20
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	22.4	22.4	9.1	36.5	9.6	9.6
Effective Green, g (s)	22.4	22.4	9.1	36.5	9.6	9.6
Actuated g/C Ratio	0.40	0.40	0.16	0.65	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1413	632	287	2302	302	270
v/s Ratio Prot	0.24		0.11	c0.42	c0.06	
v/s Ratio Perm		0.02				0.01
v/c Ratio	0.61	0.05	0.67	0.65	0.36	0.07
Uniform Delay, d1	13.4	10.3	22.1	5.9	20.5	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	5.7	0.7	0.7	0.1
Delay (s)	14.1	10.4	27.8	6.6	21.3	19.6
Level of Service	B	B	C	A	C	B
Approach Delay (s)	13.8			9.0	20.4	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	207	48	82	882	2	74	145	88	4	71	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	218	51	86	928	2	78	153	93	4	75	66
RTOR Reduction (vph)	0	0	31	0	0	1	0	0	70	0	0	52
Lane Group Flow (vph)	64	218	20	86	928	1	78	153	23	4	75	14
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.8	21.9	21.9	2.8	21.9	21.9	2.8	13.7	13.7	0.6	11.5	11.5
Effective Green, g (s)	3.8	23.9	22.9	3.8	23.9	22.9	3.8	15.7	14.7	1.6	13.5	12.5
Actuated g/C Ratio	0.06	0.41	0.39	0.06	0.41	0.39	0.06	0.27	0.25	0.03	0.23	0.21
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	1433	614	114	1433	614	114	495	394	48	426	335
v/s Ratio Prot	0.04	0.06		c0.05	c0.26		c0.04	c0.08		0.00	0.04	
v/s Ratio Perm			0.01			0.00			0.01			0.01
v/c Ratio	0.56	0.15	0.03	0.75	0.65	0.00	0.68	0.31	0.06	0.08	0.18	0.04
Uniform Delay, d1	26.8	11.1	11.2	27.1	14.2	11.0	27.0	17.3	16.9	28.0	18.3	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.0	0.0	24.3	1.0	0.0	15.7	0.4	0.1	0.7	0.2	0.1
Delay (s)	33.0	11.2	11.2	51.4	15.2	11.1	42.7	17.7	16.9	28.7	18.5	18.5
Level of Service	C	B	B	D	B	B	D	B	B	C	B	B
Approach Delay (s)		15.4			18.2			23.5			18.8	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	86	1243	1492	79	42	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	91	1308	1571	83	44	9
RTOR Reduction (vph)	0	0	0	45	0	7
Lane Group Flow (vph)	91	1308	1571	38	44	2
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.8	33.6	24.8	24.8	9.9	9.9
Effective Green, g (s)	3.8	33.6	24.8	24.8	9.9	9.9
Actuated g/C Ratio	0.07	0.63	0.46	0.46	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	3193	2357	733	327	292
v/s Ratio Prot	c0.05	0.26	c0.31		c0.02	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.73	0.41	0.67	0.05	0.13	0.01
Uniform Delay, d1	24.3	5.0	11.1	7.9	18.2	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.0	0.1	0.7	0.0	0.2	0.0
Delay (s)	43.3	5.1	11.9	7.9	18.4	17.8
Level of Service	D	A	B	A	B	B
Approach Delay (s)		7.6	11.7		18.3	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	1450	28	71	1310	43	0	25	12	141	11	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	4.0	4.0	2.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	1526	29	75	1379	45	0	26	13	148	12	7
RTOR Reduction (vph)	0	0	17	0	0	24	0	0	11	0	0	5
Lane Group Flow (vph)	17	1526	12	75	1379	21	0	26	2	148	12	2
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.6	29.4	29.4	3.1	31.9	31.9		10.3	10.3	8.2	23.5	23.5
Effective Green, g (s)	1.6	32.4	30.4	4.1	34.9	32.9		11.3	11.3	9.2	24.5	24.5
Actuated g/C Ratio	0.02	0.46	0.43	0.06	0.49	0.46		0.16	0.16	0.13	0.35	0.35
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	39	2320	677	102	2499	733		296	251	229	642	546
v/s Ratio Prot	0.01	c0.30		c0.04	0.27			c0.01		c0.08	0.01	
v/s Ratio Perm			0.01			0.01			0.00			0.00
v/c Ratio	0.44	0.66	0.02	0.74	0.55	0.03		0.09	0.01	0.65	0.02	0.00
Uniform Delay, d1	34.3	15.0	11.7	32.9	12.6	10.4		25.5	25.1	29.4	15.3	15.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.6	0.7	0.0	23.8	0.3	0.0		0.1	0.0	6.1	0.0	0.0
Delay (s)	41.9	15.7	11.7	56.7	12.9	10.4		25.6	25.1	35.5	15.3	15.3
Level of Service	D	B	B	E	B	B		C	C	D	B	B
Approach Delay (s)		15.9			15.0			25.4			33.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	54	0	10	0	1377	198	9	1268	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0		5.0		5.0	5.0	5.0	5.0	
Lane Util. Factor				1.00		1.00		0.91	1.00	1.00	0.91	
Frt				1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1770		1583		5085	1583	1770	5085	
Flt Permitted				0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)				1770		1583		5085	1583	1770	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	57	0	11	0	1449	208	9	1335	0
RTOR Reduction (vph)	0	0	0	0	0	9	0	0	90	0	0	0
Lane Group Flow (vph)	0	0	0	57	0	2	0	1449	118	9	1335	0
Turn Type	Prot		Perm	Prot		Perm		NA	Perm	Prot	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)				2.2		11.3		35.1	35.1	0.5	40.6	
Effective Green, g (s)				2.2		11.3		35.1	35.1	0.5	40.6	
Actuated g/C Ratio				0.04		0.18		0.57	0.57	0.01	0.66	
Clearance Time (s)				5.0		5.0		5.0	5.0	5.0	5.0	
Vehicle Extension (s)				3.0		3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				62		288		2883	897	14	3335	
v/s Ratio Prot				c0.03				c0.28		0.01	c0.26	
v/s Ratio Perm						c0.00			0.07			
v/c Ratio				0.92		0.01		0.50	0.13	0.64	0.40	
Uniform Delay, d1				29.8		20.7		8.1	6.3	30.6	5.0	
Progression Factor				1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2				84.9		0.0		0.1	0.1	71.2	0.1	
Delay (s)				114.6		20.7		8.3	6.3	101.8	5.0	
Level of Service				F		C		A	A	F	A	
Approach Delay (s)		0.0			99.4			8.0			5.7	
Approach LOS		A			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	61.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	357	0	27	772	0	17	0	1	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0		5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00		1.00	
Frt	1.00	1.00		1.00	1.00		1.00		0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00		1.00	
Satd. Flow (prot)	1770	3539		1770	3539		1770		1583		1863	
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00		1.00	
Satd. Flow (perm)	1770	3539		1770	3539		1770		1583		1863	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	376	0	28	813	0	18	0	1	0	2	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	2	376	0	28	813	0	18	0	0	0	2	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	17.4		0.5	17.5		0.4		14.0		8.6	
Effective Green, g (s)	0.4	17.4		0.5	17.5		0.4		14.0		8.6	
Actuated g/C Ratio	0.01	0.37		0.01	0.37		0.01		0.30		0.18	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0		5.0		5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	15	1312		18	1320		15		472		341	
v/s Ratio Prot	0.00	0.11		c0.02	c0.23		c0.01				c0.00	
v/s Ratio Perm									0.00			
v/c Ratio	0.13	0.29		1.56	0.62		1.20		0.00		0.01	
Uniform Delay, d1	23.1	10.4		23.2	12.0		23.2		11.5		15.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2	4.0	0.1		417.6	0.9		303.5		0.0		0.0	
Delay (s)	27.1	10.5		440.8	12.8		326.8		11.5		15.7	
Level of Service	C	B		F	B		F		B		B	
Approach Delay (s)		10.6			27.1			310.2			15.7	
Approach LOS		B			C			F			B	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	279	18	55	964	0	13	0	37	0	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0		5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00		1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539		1770		1583		1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95		1.00		1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539		1770		1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	294	19	58	1015	0	14	0	39	0	1	5
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	28	0	0	4
Lane Group Flow (vph)	2	294	7	58	1015	0	14	0	11	0	1	1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	19.3	19.3	2.4	21.3		0.4		14.0		8.6	8.6
Effective Green, g (s)	0.4	19.3	19.3	2.4	21.3		0.4		14.0		8.6	8.6
Actuated g/C Ratio	0.01	0.38	0.38	0.05	0.42		0.01		0.28		0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0		5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	13	1347	602	83	1486		13		437		316	268
v/s Ratio Prot	0.00	0.08		c0.03	c0.29		c0.01				0.00	
v/s Ratio Perm			0.00						c0.01			0.00
v/c Ratio	0.15	0.22	0.01	0.70	0.68		1.08		0.02		0.00	0.00
Uniform Delay, d1	25.0	10.6	9.8	23.8	12.0		25.2		13.4		17.5	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2	5.5	0.1	0.0	22.6	1.3		276.9		0.0		0.0	0.0
Delay (s)	30.4	10.7	9.8	46.4	13.3		302.1		13.4		17.5	17.5
Level of Service	C	B	A	D	B		F		B		B	B
Approach Delay (s)		10.8			15.1			89.7			17.5	
Approach LOS		B			B			F			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	50.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	18	5	1345	32	6	985
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	5	1416	34	6	1037
RTOR Reduction (vph)	0	5	0	12	0	0
Lane Group Flow (vph)	19	0	1416	22	6	1037
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	3.9	3.9	35.3	35.3	0.5	40.8
Effective Green, g (s)	3.9	3.9	35.3	35.3	0.5	40.8
Actuated g/C Ratio	0.07	0.07	0.65	0.65	0.01	0.75
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	126	112	3281	1021	16	3792
v/s Ratio Prot	c0.01		c0.28		0.00	c0.20
v/s Ratio Perm		0.00		0.01		
v/c Ratio	0.15	0.00	0.43	0.02	0.38	0.27
Uniform Delay, d1	23.8	23.6	4.8	3.5	26.9	2.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	0.1	0.0	14.1	0.0
Delay (s)	24.4	23.6	4.9	3.5	41.1	2.3
Level of Service	C	C	A	A	D	A
Approach Delay (s)	24.2		4.8			2.5
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	54.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	7	40	49	16	78	100	1301	107	44	1007	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	7	42	52	17	82	105	1369	113	46	1060	55
RTOR Reduction (vph)	0	0	36	0	0	68	0	0	57	0	0	32
Lane Group Flow (vph)	24	7	6	52	17	14	105	1369	56	46	1060	23
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	9.7	9.7	2.0	11.2	11.2	6.5	32.9	32.9	2.0	28.4	28.4
Effective Green, g (s)	0.5	9.7	9.7	2.0	11.2	11.2	6.5	32.9	32.9	2.0	28.4	28.4
Actuated g/C Ratio	0.01	0.15	0.15	0.03	0.17	0.17	0.10	0.49	0.49	0.03	0.43	0.43
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	271	230	53	313	266	172	2511	781	53	2168	675
v/s Ratio Prot	0.01	0.00		c0.03	c0.01		c0.06	c0.27		0.03	0.21	
v/s Ratio Perm			0.00			0.01			0.04			0.01
v/c Ratio	1.85	0.03	0.03	0.98	0.05	0.05	0.61	0.55	0.07	0.87	0.49	0.03
Uniform Delay, d1	33.0	24.4	24.4	32.3	23.3	23.2	28.8	11.7	8.8	32.2	13.8	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	579.3	0.0	0.0	116.3	0.1	0.1	6.3	0.2	0.0	76.0	0.2	0.0
Delay (s)	612.4	24.4	24.4	148.6	23.3	23.3	35.1	11.9	8.9	108.2	14.0	11.1
Level of Service	F	C	C	F	C	C	D	B	A	F	B	B
Approach Delay (s)		217.7			66.5			13.2			17.6	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	80	6	1	230	34	4	1	3	14	4	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	84	6	1	242	36	4	1	3	15	4	2
RTOR Reduction (vph)	0	0	5	0	0	28	0	0	2	0	0	1
Lane Group Flow (vph)	1	84	1	1	242	8	4	1	1	15	4	1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	9.2	9.2	0.4	9.2	9.2	0.4	11.1	11.1	0.9	11.6	11.6
Effective Green, g (s)	0.4	9.2	9.2	0.4	9.2	9.2	0.4	11.1	11.1	0.9	11.6	11.6
Actuated g/C Ratio	0.01	0.22	0.22	0.01	0.22	0.22	0.01	0.27	0.27	0.02	0.28	0.28
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	17	782	350	17	782	350	17	497	422	38	519	441
v/s Ratio Prot	c0.00	0.02		0.00	c0.07		0.00	0.00		c0.01	c0.00	
v/s Ratio Perm			0.00			0.01			0.00			0.00
v/c Ratio	0.06	0.11	0.00	0.06	0.31	0.02	0.24	0.00	0.00	0.39	0.01	0.00
Uniform Delay, d1	20.4	12.9	12.6	20.4	13.5	12.7	20.4	11.2	11.2	20.1	10.8	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	0.0	1.5	0.2	0.0	7.0	0.0	0.0	6.6	0.0	0.0
Delay (s)	21.9	13.0	12.6	21.9	13.8	12.7	27.5	11.2	11.2	26.7	10.8	10.8
Level of Service	C	B	B	C	B	B	C	B	B	C	B	B
Approach Delay (s)		13.1			13.7			19.3			22.2	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	39	11	1248	84	0	907
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0		5.0
Lane Util. Factor	1.00	1.00	0.91	1.00		0.91
Frt	1.00	0.85	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	5085	1583		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	5085	1583		5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	12	1314	88	0	955
RTOR Reduction (vph)	0	11	0	28	0	0
Lane Group Flow (vph)	41	1	1314	60	0	955
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.5	6.5	36.2	36.2		36.2
Effective Green, g (s)	6.5	6.5	36.2	36.2		36.2
Actuated g/C Ratio	0.12	0.12	0.69	0.69		0.69
Clearance Time (s)	5.0	5.0	5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	218	195	3492	1087		3492
v/s Ratio Prot	c0.02		c0.26			0.19
v/s Ratio Perm		0.00		0.04		
v/c Ratio	0.19	0.01	0.38	0.06		0.27
Uniform Delay, d1	20.7	20.3	3.5	2.7		3.2
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	0.0	0.1	0.0		0.0
Delay (s)	21.2	20.3	3.6	2.7		3.2
Level of Service	C	C	A	A		A
Approach Delay (s)	21.0		3.5			3.2
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	217	1333	1303	86	129	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	228	1403	1372	91	136	389
RTOR Reduction (vph)	0	0	0	55	0	316
Lane Group Flow (vph)	228	1403	1372	36	136	73
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	13.6	45.4	26.8	26.8	12.7	12.7
Effective Green, g (s)	13.6	45.4	26.8	26.8	12.7	12.7
Actuated g/C Ratio	0.20	0.67	0.39	0.39	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	3390	2001	622	330	295
v/s Ratio Prot	c0.13	0.28	c0.27		c0.08	
v/s Ratio Perm				0.02		0.05
v/c Ratio	0.65	0.41	0.69	0.06	0.41	0.25
Uniform Delay, d1	25.0	5.2	17.2	12.8	24.4	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.1	1.0	0.0	0.8	0.4
Delay (s)	29.1	5.3	18.1	12.9	25.2	24.1
Level of Service	C	A	B	B	C	C
Approach Delay (s)		8.6	17.8		24.4	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1304	1455	88	0	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0		5.0
Lane Util. Factor		0.91	0.91	1.00		1.00
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		5085	5085	1583		1583
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		5085	5085	1583		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1373	1532	93	0	172
RTOR Reduction (vph)	0	0	0	40	0	134
Lane Group Flow (vph)	0	1373	1532	53	0	38
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)		25.0	25.0	25.0		9.2
Effective Green, g (s)		25.0	25.0	25.0		9.2
Actuated g/C Ratio		0.57	0.57	0.57		0.21
Clearance Time (s)		5.0	5.0	5.0		5.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		2876	2876	895		329
v/s Ratio Prot		0.27	c0.30			
v/s Ratio Perm				0.03		c0.02
v/c Ratio		0.48	0.53	0.06		0.12
Uniform Delay, d1		5.7	6.0	4.3		14.2
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.2	0.0		0.2
Delay (s)		5.8	6.2	4.3		14.4
Level of Service		A	A	A		B
Approach Delay (s)		5.8	6.1		14.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	44.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	153	1123	1377	124	205	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	161	1182	1449	131	216	278
RTOR Reduction (vph)	0	0	0	83	0	211
Lane Group Flow (vph)	161	1182	1449	48	216	67
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.7	33.7	21.0	21.0	14.0	14.0
Effective Green, g (s)	7.7	33.7	21.0	21.0	14.0	14.0
Actuated g/C Ratio	0.13	0.58	0.36	0.36	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	2969	1850	576	429	384
v/s Ratio Prot	c0.09	0.23	c0.28		c0.12	
v/s Ratio Perm				0.03		0.04
v/c Ratio	0.68	0.40	0.78	0.08	0.50	0.18
Uniform Delay, d1	23.8	6.5	16.3	12.0	18.9	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9	0.1	2.2	0.1	0.9	0.2
Delay (s)	31.7	6.6	18.6	12.1	19.8	17.5
Level of Service	C	A	B	B	B	B
Approach Delay (s)		9.6	18.0		18.5	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	6	34	155	4	55	21	802	151	7	512	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	6	36	163	4	58	22	844	159	7	539	17
RTOR Reduction (vph)	0	0	33	0	0	44	0	0	99	0	0	11
Lane Group Flow (vph)	26	6	3	163	4	14	22	844	60	7	539	6
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.5	4.8	4.8	10.8	14.1	14.1	0.6	21.8	21.8	0.5	21.7	21.7
Effective Green, g (s)	1.5	4.8	4.8	10.8	14.1	14.1	0.6	21.8	21.8	0.5	21.7	21.7
Actuated g/C Ratio	0.03	0.08	0.08	0.19	0.24	0.24	0.01	0.38	0.38	0.01	0.37	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	45	154	131	330	453	385	18	1914	596	15	1905	593
v/s Ratio Prot	0.01	0.00		c0.09	0.00		c0.01	c0.17		0.00	0.11	
v/s Ratio Perm			0.00			c0.01			0.04			0.00
v/c Ratio	0.58	0.04	0.02	0.49	0.01	0.04	1.22	0.44	0.10	0.47	0.28	0.01
Uniform Delay, d1	27.9	24.4	24.4	21.1	16.6	16.7	28.6	13.5	11.7	28.6	12.7	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.7	0.1	0.1	1.2	0.0	0.0	289.8	0.2	0.1	21.2	0.1	0.0
Delay (s)	44.6	24.5	24.5	22.3	16.6	16.8	318.4	13.7	11.8	49.8	12.7	11.4
Level of Service	D	C	C	C	B	B	F	B	B	D	B	B
Approach Delay (s)		32.2			20.7			19.9			13.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	20	27	21	13	27	54	865	49	47	835	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	21	28	22	14	28	57	911	52	49	879	142
RTOR Reduction (vph)	0	0	23	0	0	24	0	0	27	0	0	75
Lane Group Flow (vph)	51	21	5	22	14	4	57	911	25	49	879	67
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.4	9.5	9.5	0.5	7.6	7.6	2.9	27.8	27.8	2.4	27.3	27.3
Effective Green, g (s)	3.4	11.5	10.5	1.5	9.6	8.6	3.9	29.8	28.8	3.4	29.3	28.3
Actuated g/C Ratio	0.06	0.19	0.17	0.02	0.16	0.14	0.06	0.50	0.48	0.06	0.49	0.47
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	99	355	276	44	297	226	114	2517	757	99	2474	744
v/s Ratio Prot	c0.03	c0.01		0.01	0.01		c0.03	c0.18		0.03	0.17	
v/s Ratio Perm			0.00			0.00			0.02			0.04
v/c Ratio	0.52	0.06	0.02	0.50	0.05	0.02	0.50	0.36	0.03	0.49	0.36	0.09
Uniform Delay, d1	27.6	19.9	20.6	29.0	21.4	22.2	27.2	9.4	8.3	27.6	9.6	8.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	0.1	0.0	8.7	0.1	0.0	3.4	0.1	0.0	3.9	0.1	0.1
Delay (s)	32.1	20.0	20.6	37.6	21.5	22.2	30.6	9.4	8.3	31.4	9.7	8.9
Level of Service	C	B	C	D	C	C	C	A	A	C	A	A
Approach Delay (s)		26.3			27.4			10.6			10.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	391	6	58	499	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3539	1583	1770	3539	1770	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (perm)	3539	1583	1770	3539	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	412	6	61	525	5	0
RTOR Reduction (vph)	0	4	0	0	0	0
Lane Group Flow (vph)	412	2	61	525	5	0
Turn Type	NA	Perm	Prot	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	10.9	10.9	2.0	17.9	7.9	
Effective Green, g (s)	10.9	10.9	2.0	17.9	7.9	
Actuated g/C Ratio	0.30	0.30	0.06	0.50	0.22	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1077	481	98	1769	390	
v/s Ratio Prot	c0.12		0.03	c0.15		
v/s Ratio Perm		0.00			c0.00	
v/c Ratio	0.38	0.00	0.62	0.30	0.01	
Uniform Delay, d1	9.8	8.7	16.5	5.3	10.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.0	11.7	0.1	0.0	
Delay (s)	10.0	8.7	28.2	5.3	10.9	
Level of Service	B	A	C	A	B	
Approach Delay (s)	10.0			7.7	10.9	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	35.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	13	55	160	28	0	143	0	186	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0		5.0		5.0			
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00		1.00			
Frt		1.00	0.85	1.00	1.00		1.00		0.85			
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (prot)		1863	1583	1770	1863		1770		1583			
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00			
Satd. Flow (perm)		1863	1583	1770	1863		1770		1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	14	58	168	29	0	151	0	196	0	0	0
RTOR Reduction (vph)	0	0	51	0	0	0	0	0	112	0	0	0
Lane Group Flow (vph)	0	14	7	168	29	0	151	0	84	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		6.4	6.4	10.4	21.8		9.6		23.9			
Effective Green, g (s)		6.4	6.4	10.4	21.8		9.6		23.9			
Actuated g/C Ratio		0.11	0.11	0.19	0.39		0.17		0.43			
Clearance Time (s)		5.0	5.0	5.0	5.0		5.0		5.0			
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0			
Lane Grp Cap (vph)		214	181	330	729		305		679			
v/s Ratio Prot		c0.01		c0.09	0.02		c0.09					
v/s Ratio Perm			0.00						c0.05			
v/c Ratio		0.07	0.04	0.51	0.04		0.50		0.12			
Uniform Delay, d1		22.0	21.9	20.4	10.5		20.9		9.6			
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00			
Incremental Delay, d2		0.1	0.1	1.2	0.0		1.3		0.1			
Delay (s)		22.1	22.0	21.6	10.5		22.1		9.7			
Level of Service		C	C	C	B		C		A			
Approach Delay (s)		22.0			20.0			15.1			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	2	28	13	1	6	80	555	32	16	215	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	2	29	14	1	6	84	584	34	17	226	12
RTOR Reduction (vph)	0	0	26	0	0	5	0	0	16	0	0	6
Lane Group Flow (vph)	4	2	3	14	1	1	84	584	18	17	226	6
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	4.2	4.2	0.5	4.3	4.3	2.8	26.2	26.2	0.5	23.9	23.9
Effective Green, g (s)	1.4	6.2	5.2	1.5	6.3	5.3	3.8	28.2	27.2	1.5	25.9	24.9
Actuated g/C Ratio	0.03	0.12	0.10	0.03	0.12	0.10	0.07	0.55	0.53	0.03	0.50	0.48
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	48	224	160	51	228	163	130	2789	837	51	2562	766
v/s Ratio Prot	0.00	0.00		c0.01	0.00		c0.05	c0.11		0.01	0.04	
v/s Ratio Perm			c0.00			0.00			0.01			0.00
v/c Ratio	0.08	0.01	0.02	0.27	0.00	0.00	0.65	0.21	0.02	0.33	0.09	0.01
Uniform Delay, d1	24.4	19.9	20.8	24.4	19.8	20.7	23.1	5.9	5.8	24.5	6.6	6.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	0.0	2.9	0.0	0.0	10.5	0.0	0.0	3.8	0.0	0.0
Delay (s)	25.1	19.9	20.8	27.3	19.8	20.7	33.7	6.0	5.8	28.3	6.6	6.9
Level of Service	C	B	C	C	B	C	C	A	A	C	A	A
Approach Delay (s)		21.3			25.1			9.3			8.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	16	33	23	4	18	28	654	25	15	1091	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.95		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1792	1583		1717		1770	3520		1770	3507	
Flt Permitted		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1792	1583		1717		1770	3520		1770	3507	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	17	35	24	4	19	29	688	26	16	1148	74
RTOR Reduction (vph)	0	0	31	0	18	0	0	2	0	0	4	0
Lane Group Flow (vph)	0	82	4	0	29	0	29	712	0	16	1218	0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		8.6	8.6		4.6		1.6	37.9		0.9	37.2	
Effective Green, g (s)		8.6	8.6		4.6		1.6	37.9		0.9	37.2	
Actuated g/C Ratio		0.12	0.12		0.07		0.02	0.54		0.01	0.53	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		221	195		113		40	1914		22	1871	
v/s Ratio Prot		c0.05			c0.02		c0.02	0.20		0.01	c0.35	
v/s Ratio Perm			0.00									
v/c Ratio		0.37	0.02		0.26		0.72	0.37		0.73	0.65	
Uniform Delay, d1		28.1	26.9		30.9		33.8	9.1		34.3	11.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		0.4		42.4	0.1		67.5	0.9	
Delay (s)		28.4	26.9		31.4		76.2	9.2		101.8	12.5	
Level of Service		C	C		C		E	A		F	B	
Approach Delay (s)		28.0			31.4			11.9			13.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	17.7
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	28	31	15	19	15	138	185	0	37	211	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.95			0.96		1.00	1.00		1.00	0.92	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1745			1758		1770	3539		1770	1722	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1775			1785		1770	3539		1770	1722	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	29	33	16	20	16	145	195	0	39	222	224
RTOR Reduction (vph)	0	31	0	0	15	0	0	0	0	0	68	0
Lane Group Flow (vph)	0	64	0	0	37	0	145	195	0	39	378	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		2.4			1.5		5.3	22.1		1.6	18.4	
Effective Green, g (s)		2.4			1.5		5.3	22.1		1.6	18.4	
Actuated g/C Ratio		0.06			0.03		0.12	0.51		0.04	0.42	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		97			61		215	1793		64	726	
v/s Ratio Prot							c0.08	c0.06		0.02	c0.22	
v/s Ratio Perm		c0.04			c0.02							
v/c Ratio		0.66			0.60		0.67	0.11		0.61	0.52	
Uniform Delay, d1		20.2			20.8		18.3	5.6		20.7	9.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.6			10.1		6.4	0.0		10.8	0.6	
Delay (s)		31.8			30.9		24.7	5.6		31.4	10.0	
Level of Service		C			C		C	A		C	A	
Approach Delay (s)		31.8			30.9			13.8			11.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	2232	2601	123	48	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	2278	2654	126	49	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)		743	707			
pX, platoon unblocked	0.25				0.51	0.25
vC, conflicting volume	2780				3856	1390
vC1, stage 1 conf vol					2717	
vC2, stage 2 conf vol					1139	
vCu, unblocked vol	2135				121	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				90	100
cM capacity (veh/h)	64				479	276

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	0	1139	1139	1769	1010	49
Volume Left	0	0	0	0	0	49
Volume Right	0	0	0	0	126	0
cSH	1700	1700	1700	1700	1700	479
Volume to Capacity	0.00	0.67	0.67	1.04	0.59	0.10
Queue Length 95th (ft)	0	0	0	0	0	8
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	13.4
Lane LOS						B
Approach Delay (s)	0.0			0.0		13.4
Approach LOS						B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	290	0	2536	1858	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	305	0	2669	1956	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				676	313	
pX, platoon unblocked	0.78	0.78	0.78			
vC, conflicting volume	2623	652	1956			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2082	0	1222			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	64	100			
cM capacity (veh/h)	36	842	440			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	305	667	667	667	667	782	782	391
Volume Left	0	0	0	0	0	0	0	0
Volume Right	305	0	0	0	0	0	0	0
cSH	842	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.36	0.39	0.39	0.39	0.39	0.46	0.46	0.23
Queue Length 95th (ft)	42	0	0	0	0	0	0	0
Control Delay (s)	11.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	11.7	0.0				0.0		
Approach LOS	B							

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	98	0	0	0	0	1802	32	0	1370	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	103	0	0	0	0	1897	34	0	1442	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								323			330	
pX, platoon unblocked	0.75	0.75	0.88	0.75	0.75	0.69	0.88			0.69		
vC, conflicting volume	2074	3373	481	2498	3356	649	1442			1931		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	197	1919	0	759	1897	0	1020			794		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	89	100	100	100	100			100		
cM capacity (veh/h)	561	50	953	199	52	752	594			571		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	103	759	759	413	481	481	481	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	103	0	0	34	0	0	0	0
cSH	953	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.11	0.45	0.45	0.24	0.28	0.28	0.28	0.00
Queue Length 95th (ft)	9	0	0	0	0	0	0	0
Control Delay (s)	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.2	0.0			0.0			
Approach LOS	A							

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	39.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑↱							↱
Volume (veh/h)	0	1991	95	0	2700	0	0	0	0	0	0	178
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	2096	100	0	2842	0	0	0	0	0	0	187
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1319										
pX, platoon unblocked				0.72			0.72	0.72	0.72	0.72	0.72	
vC, conflicting volume	2842			2196			2994	4938	699	3541	5038	711
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2842			1314			2417	5105	0	3174	5244	711
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	50
cM capacity (veh/h)	131			378			6	0	784	3	0	376

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	699	699	699	100	812	812	812	406	187
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	100	0	0	0	0	187
cSH	1700	1700	1700	1700	1700	1700	1700	1700	376
Volume to Capacity	0.41	0.41	0.41	0.06	0.48	0.48	0.48	0.24	0.50
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	67
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.7
Lane LOS									C
Approach Delay (s)	0.0				0.0				23.7
Approach LOS									C

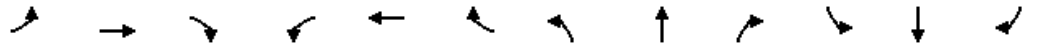
Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	56.8%	ICU Level of Service		B
Analysis Period (min)	15			

Intersection Sign configuration not allowed in HCM analysis.

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	966	31	0	1226	163	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1017	33	0	1291	172	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		325			335							
pX, platoon unblocked	0.66			0.87			0.72	0.72	0.66	0.72	0.72	0.87
vC, conflicting volume	1462			1049			1885	2426	731	1678	2495	525
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	660			756			642	1391	0	357	1487	152
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	607			739			259	102	713	415	89	753

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	678	372	860	602
Volume Left	0	0	0	0
Volume Right	0	33	0	172
cSH	1700	1700	1700	1700
Volume to Capacity	0.40	0.22	0.51	0.35
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				
Approach Delay (s)	0.0		0.0	
Approach LOS				

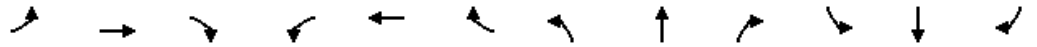
Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	42.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	2808	48	0	3218	0	0	0	0	0	0	230
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	2956	51	0	3387	0	0	0	0	0	0	242
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		507			499							
pX, platoon unblocked	0.62			0.80			0.72	0.72	0.80	0.72	0.72	0.62
vC, conflicting volume	3387			3006			4070	6368	764	4126	6394	847
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1801			2246			813	3990	0	891	4024	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	64
cM capacity (veh/h)	211			181			125	2	865	172	2	675

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	845	845	845	473	968	968	968	484	242
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	51	0	0	0	0	242
cSH	1700	1700	1700	1700	1700	1700	1700	1700	675
Volume to Capacity	0.50	0.50	0.50	0.28	0.57	0.57	0.57	0.28	0.36
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	41
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.3
Lane LOS									B
Approach Delay (s)	0.0				0.0				13.3
Approach LOS									B

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	67.5%	ICU Level of Service		C
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1673	0	0	1456	19	0	0	29	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1761	0	0	1533	20	0	0	31	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		154			274							
pX, platoon unblocked	0.69			0.81			0.78	0.78	0.81	0.78	0.78	0.69
vC, conflicting volume	1553			1761			2527	3314	881	2454	3304	776
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	893			1475			1314	2321	392	1219	2308	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	94	100	100	100
cM capacity (veh/h)	519			368			91	29	493	100	29	745

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	881	881	1022	531	31
Volume Left	0	0	0	0	0
Volume Right	0	0	0	20	31
cSH	1700	1700	1700	1700	493
Volume to Capacity	0.52	0.52	0.60	0.31	0.06
Queue Length 95th (ft)	0	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	0.0	12.8
Lane LOS					B
Approach Delay (s)	0.0		0.0		12.8
Approach LOS					B

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	56.2%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑↑			↑↑↑↑
Volume (veh/h)	0	74	2276	0	0	1934
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	76	2322	0	0	1973
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			181			729
pX, platoon unblocked	0.82	0.77			0.77	
vC, conflicting volume	2816	581			2322	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1055	0			1250	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	91			100	
cM capacity (veh/h)	182	840			428	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	76	581	581	581	581	493	493	493	493
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	76	0	0	0	0	0	0	0	0
cSH	840	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.09	0.34	0.34	0.34	0.34	0.29	0.29	0.29	0.29
Queue Length 95th (ft)	7	0	0	0	0	0	0	0	0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A								
Approach Delay (s)	9.7	0.0				0.0			
Approach LOS	A								

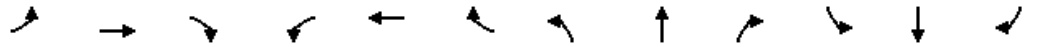
Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	12	2284	2711	67	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	12	2331	2766	68	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		392	331			
pX, platoon unblocked					0.25	
vC, conflicting volume	2835				3990	956
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2835				6989	956
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				100	100
cM capacity (veh/h)	132				0	258

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	12	1165	1165	1107	1107	622	0
Volume Left	12	0	0	0	0	0	0
Volume Right	0	0	0	0	0	68	0
cSH	132	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.09	0.69	0.69	0.65	0.65	0.37	0.00
Queue Length 95th (ft)	8	0	0	0	0	0	0
Control Delay (s)	35.1	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	E						A
Approach Delay (s)	0.2			0.0			0.0
Approach LOS							A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

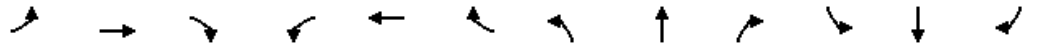
Intersection Sign configuration not allowed in HCM analysis.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑				↱			↱
Volume (veh/h)	0	1111	0	0	593	0	0	0	10	0	0	404
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1169	0	0	624	0	0	0	11	0	0	425
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		521			479							
pX, platoon unblocked	0.98			0.87			0.88	0.88	0.87	0.88	0.88	0.98
vC, conflicting volume	624			1169			1907	1794	585	1219	1794	312
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	586			900			1675	1547	229	894	1547	268
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	98	100	100	41
cM capacity (veh/h)	969			654			22	100	675	204	100	718

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	585	585	312	312	11	425
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	11	425
cSH	1700	1700	1700	1700	675	718
Volume to Capacity	0.34	0.34	0.18	0.18	0.02	0.59
Queue Length 95th (ft)	0	0	0	0	1	98
Control Delay (s)	0.0	0.0	0.0	0.0	10.4	17.0
Lane LOS					B	C
Approach Delay (s)	0.0		0.0		10.4	17.0
Approach LOS					B	C

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1244	0	0	736	704	0	0	11	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1309	0	0	775	741	0	0	12	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		355			315							
pX, platoon unblocked	0.67			0.78			0.78	0.78	0.78	0.78	0.78	0.67
vC, conflicting volume	1516			1309			1697	2825	655	1812	2455	758
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	794			836			75	1517	0	221	1044	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	554			620			709	92	847	552	178	729

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	655	655	516	999	12
Volume Left	0	0	0	0	0
Volume Right	0	0	0	741	12
cSH	1700	1700	1700	1700	847
Volume to Capacity	0.39	0.39	0.30	0.59	0.01
Queue Length 95th (ft)	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	9.3
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.3
Approach LOS					A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	46.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	36	71	202	47	16	57	631	222	6	767	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0		3.0	4.3	4.3	2.0	3.2	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1825	1583		1779		1770	1863	1583	1770	3534	
Flt Permitted		0.98	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1825	1583		1779		1770	1863	1583	1770	3534	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	38	75	213	49	17	60	664	234	6	807	8
RTOR Reduction (vph)	0	0	68	0	3	0	0	0	127	0	1	0
Lane Group Flow (vph)	0	65	7	0	276	0	60	664	107	6	814	0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			
Actuated Green, G (s)		5.9	5.9		16.9		3.6	32.0	32.0	0.9	29.4	
Effective Green, g (s)		6.9	6.9		17.9		4.6	33.0	33.0	1.9	30.4	
Actuated g/C Ratio		0.10	0.10		0.25		0.06	0.46	0.46	0.03	0.42	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.3	5.3	3.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		174	151		442		113	853	725	46	1492	
v/s Ratio Prot		c0.04			c0.16		c0.03	c0.36		0.00	0.23	
v/s Ratio Perm			0.00						0.07			
v/c Ratio		0.37	0.05		0.62		0.53	0.78	0.15	0.13	0.55	
Uniform Delay, d1		30.5	29.6		24.1		32.7	16.4	11.3	34.2	15.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.0		2.0		2.4	4.1	0.0	0.5	0.4	
Delay (s)		31.0	29.6		26.0		35.0	20.6	11.4	34.7	16.0	
Level of Service		C	C		C		D	C	B	C	B	
Approach Delay (s)		30.3			26.0			19.2			16.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	178	0	400	400	5	0	383	373	0	357	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	0.95	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1681	1757		1770	3533			1863	1583		1863	1583
Flt Permitted	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1681	1757		1770	3533			1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	243	187	0	421	421	5	0	403	393	0	376	419
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	304	0	0	0
Lane Group Flow (vph)	211	219	0	421	425	0	0	403	89	0	376	419
Turn Type	Split	NA		Split	NA			NA	Perm		NA	Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	16.7	16.7		25.2	25.2			22.9	22.9		22.7	106.1
Effective Green, g (s)	17.7	17.7		26.2	26.2			23.9	23.9		23.7	106.1
Actuated g/C Ratio	0.17	0.17		0.25	0.25			0.23	0.23		0.22	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		5.0	5.0			3.0	3.0		2.5	
Lane Grp Cap (vph)	280	293		437	872			419	356		416	1583
v/s Ratio Prot	c0.13	0.12		c0.24	0.12			c0.22			c0.20	
v/s Ratio Perm									0.06			0.26
v/c Ratio	0.75	0.75		0.96	0.49			0.96	0.25		0.90	0.26
Uniform Delay, d1	42.1	42.1		39.5	34.2			40.6	33.7		40.1	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	10.4	9.5		34.0	0.9			34.0	0.4		22.5	0.4
Delay (s)	52.5	51.5		73.5	35.1			74.6	34.1		62.6	0.4
Level of Service	D	D		E	D			E	C		E	A
Approach Delay (s)		52.0			54.2			54.6			29.8	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	47.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	106.1	Sum of lost time (s)	14.6
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	564	196	47	501	21	119	54	63	8	40	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		1.00			1.00	0.85		0.96	
Flt Protected		1.00	1.00		1.00			0.97	1.00		0.99	
Satd. Flow (prot)		1859	1583		1846			1801	1583		1786	
Flt Permitted		0.98	1.00		0.93			0.82	1.00		0.96	
Satd. Flow (perm)		1819	1583		1726			1526	1583		1724	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	594	206	49	527	22	125	57	66	8	42	18
RTOR Reduction (vph)	0	0	63	0	2	0	0	0	52	0	14	0
Lane Group Flow (vph)	0	616	143	0	596	0	0	182	14	0	54	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		32.2	32.2		32.2			9.6	9.6		9.6	
Effective Green, g (s)		33.2	33.2		33.2			10.6	10.6		10.6	
Actuated g/C Ratio		0.66	0.66		0.66			0.21	0.21		0.21	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1207	1051		1146			323	335		365	
v/s Ratio Prot												
v/s Ratio Perm		0.34	0.09		c0.35			c0.12	0.01		0.03	
v/c Ratio		0.51	0.14		0.52			0.56	0.04		0.15	
Uniform Delay, d1		4.3	3.1		4.3			17.6	15.7		16.0	
Progression Factor		1.00	1.00		0.72			1.00	1.00		1.00	
Incremental Delay, d2		1.5	0.3		1.5			1.3	0.0		0.1	
Delay (s)		5.8	3.4		4.7			19.0	15.7		16.1	
Level of Service		A	A		A			B	B		B	
Approach Delay (s)		5.2			4.7			18.1			16.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	601	19	36	655	61	12	44	20	115	76	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.2		3.2	3.2		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	1854		1770	1839		1770	1775			1808	1583
Flt Permitted	0.28	1.00		0.33	1.00		0.52	1.00			0.78	1.00
Satd. Flow (perm)	514	1854		624	1839		967	1775			1447	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	48	633	20	38	689	64	13	46	21	121	80	99
RTOR Reduction (vph)	0	2	0	0	5	0	0	16	0	0	0	78
Lane Group Flow (vph)	48	651	0	38	748	0	13	51	0	0	201	21
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		4
Actuated Green, G (s)	32.0	32.0		32.0	32.0		9.8	9.8			9.8	9.8
Effective Green, g (s)	33.0	33.0		33.0	33.0		10.8	10.8			10.8	10.8
Actuated g/C Ratio	0.66	0.66		0.66	0.66		0.22	0.22			0.22	0.22
Clearance Time (s)	4.2	4.2		4.2	4.2		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	339	1223		411	1213		208	383			312	341
v/s Ratio Prot		0.35			c0.41			0.03				
v/s Ratio Perm	0.09			0.06			0.01				c0.14	0.01
v/c Ratio	0.14	0.53		0.09	0.62		0.06	0.13			0.64	0.06
Uniform Delay, d1	3.2	4.5		3.1	4.9		15.6	15.8			17.9	15.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.9	1.7		0.4	2.4		0.0	0.1			3.4	0.0
Delay (s)	4.1	6.1		3.5	7.2		15.6	15.9			21.2	15.6
Level of Service	A	A		A	A		B	B			C	B
Approach Delay (s)		6.0			7.1			15.8			19.4	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	547	33	468	518	16	42	32	331	71	99	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0	3.0		3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.98	
Satd. Flow (prot)	1770	1847		1770	1854			1812	1583		1776	
Flt Permitted	0.95	1.00		0.95	1.00			0.63	1.00		0.87	
Satd. Flow (perm)	1770	1847		1770	1854			1171	1583		1572	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	576	35	493	545	17	44	34	348	75	104	54
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	289	0	11	0
Lane Group Flow (vph)	45	609	0	493	561	0	0	78	59	0	222	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		
Actuated Green, G (s)	3.0	42.1		29.8	68.9			15.9	15.9		15.9	
Effective Green, g (s)	4.0	43.1		30.8	69.9			16.9	16.9		16.9	
Actuated g/C Ratio	0.04	0.43		0.31	0.70			0.17	0.17		0.17	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0	4.0		4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)	70	796		545	1295			197	267		265	
v/s Ratio Prot	0.03	c0.33		c0.28	0.30							
v/s Ratio Perm								0.07	0.04		c0.14	
v/c Ratio	0.64	0.76		0.90	0.43			0.40	0.22		0.84	
Uniform Delay, d1	47.3	24.1		33.2	6.5			37.0	35.9		40.2	
Progression Factor	1.09	0.82		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	12.9	3.9		18.1	1.1			0.5	0.2		19.3	
Delay (s)	64.5	23.8		51.3	7.6			37.5	36.0		59.6	
Level of Service	E	C		D	A			D	D		E	
Approach Delay (s)		26.6			28.0			36.3			59.6	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	110	260	154	74	13	632	1043	47	30	1172	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.6	3.9	3.0	1.6	2.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	75	116	274	162	78	14	665	1098	49	32	1234	3
RTOR Reduction (vph)	0	0	229	0	0	12	0	0	27	0	0	2
Lane Group Flow (vph)	75	116	45	162	78	2	665	1098	22	32	1234	1
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	14.0	14.0	14.0	14.0	14.0	14.0	17.0	40.7	40.7	6.0	31.7	31.7
Effective Green, g (s)	15.0	15.0	15.0	15.0	15.0	15.0	18.0	43.0	41.7	7.0	34.0	32.7
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.20	0.47	0.46	0.08	0.37	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.9	4.9	4.0	3.9	3.9
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	289	305	259	289	305	259	674	1661	720	135	1313	565
v/s Ratio Prot	0.04	c0.06		c0.09	0.04		c0.19	0.31		0.02	c0.35	
v/s Ratio Perm			0.03			0.00			0.01			0.00
v/c Ratio	0.26	0.38	0.17	0.56	0.26	0.01	0.99	0.66	0.03	0.24	0.94	0.00
Uniform Delay, d1	33.4	34.2	33.0	35.3	33.4	32.1	36.7	18.7	13.8	39.8	27.8	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	0.1	1.5	0.2	0.0	30.9	1.1	0.0	0.3	13.0	0.0
Delay (s)	33.6	34.4	33.1	36.7	33.6	32.1	67.6	19.8	13.8	40.1	40.8	19.0
Level of Service	C	C	C	D	C	C	E	B	B	D	D	B
Approach Delay (s)		33.5			35.5			37.2			40.8	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	91.6	Sum of lost time (s)	11.6
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	752	54	4	0	38	1129	0	33	29	889	8	751
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	10	12	16	12	12	12	12
Total Lost time (s)	1.5	1.5			2.5	3.4		3.0	3.0	3.4	3.4	1.5
Lane Util. Factor	0.95	0.95			1.00	0.88		1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00			1.00	0.99		1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00			1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96			1.00	1.00		1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1470	1581			1737	2259		1919	1439	1470	1476	1341
Flt Permitted	0.95	0.96			1.00	1.00		1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1470	1581			1737	2259		1919	1439	1470	1476	1341
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	792	57	4	0	40	1188	0	35	31	936	8	791
RTOR Reduction (vph)	0	0	0	0	0	175	0	0	29	0	0	238
Lane Group Flow (vph)	428	425	0	0	40	1013	0	35	2	468	476	553
Confl. Peds. (#/hr)	5					5	30					30
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Split	NA			NA	pm+ov		NA	Perm	Split	NA	pm+ov
Protected Phases	4	4			8	6	5	5		6	6	4
Permitted Phases				8		8			5			6
Actuated Green, G (s)	26.1	26.1			8.5	40.0		4.7	4.7	31.5	31.5	57.6
Effective Green, g (s)	27.6	27.6			10.0	43.0		5.7	5.7	33.0	33.0	60.6
Actuated g/C Ratio	0.32	0.32			0.12	0.50		0.07	0.07	0.38	0.38	0.70
Clearance Time (s)	3.0	3.0			4.0	4.9		4.0	4.0	4.9	4.9	3.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	467	503			200	1120		126	94	559	561	937
v/s Ratio Prot	c0.29	0.27			0.02	c0.34		c0.02		0.32	0.32	0.19
v/s Ratio Perm						0.10			0.00			0.22
v/c Ratio	0.92	0.84			0.20	0.90		0.28	0.02	0.84	0.85	0.59
Uniform Delay, d1	28.4	27.6			34.7	20.0		38.5	37.9	24.4	24.6	6.7
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.3	11.9			0.2	10.1		0.4	0.0	10.1	11.0	0.7
Delay (s)	50.7	39.4			34.9	30.0		39.0	37.9	34.5	35.6	7.4
Level of Service	D	D			C	C		D	D	C	D	A
Approach Delay (s)		45.1			30.2			38.5			22.4	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	86.7	Sum of lost time (s)	10.4
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1849	571	0	1781	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1946	601	0	1875	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	299			313		
pX, platoon unblocked			0.64		0.64	0.64
vC, conflicting volume			2547		3184	1274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2293		750	303
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			139		221	444

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	1298	1250	937	937
Volume Left	0	0	0	0
Volume Right	0	601	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.76	0.74	0.55	0.55
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection has too many legs for HCM analysis.

Intersection Sign configuration not allowed in HCM analysis.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑							↱
Volume (veh/h)	0	2686	12	0	2862	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	2686	12	0	2862	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		574			462							
pX, platoon unblocked	0.46			0.70			0.61	0.61	0.70	0.61	0.61	0.46
vC, conflicting volume	2862			2698			3646	5554	901	3757	5560	954
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	935			1929			0	2916	0	0	2926	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	335			211			623	9	760	623	9	498

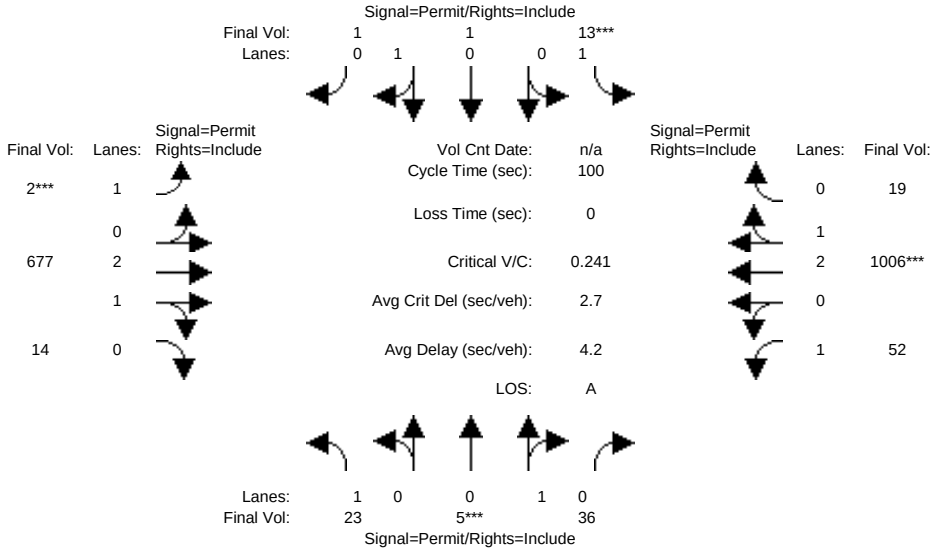
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	1074	1074	549	954	954	954	0
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	12	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.63	0.63	0.32	0.56	0.56	0.56	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							A
Approach Delay (s)	0.0			0.0			0.0
Approach LOS							A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	58.6%	ICU Level of Service	B	
Analysis Period (min)	15			

City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #301: Locust Rd and Baseline Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	23	5	36	13	1	1	2	677	14	52	1006	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	5	36	13	1	1	2	677	14	52	1006	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	23	5	36	13	1	1	2	677	14	52	1006	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	5	36	13	1	1	2	677	14	52	1006	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	5	36	13	1	1	2	677	14	52	1006	19
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.12	0.88	1.00	0.50	0.50	1.00	2.94	0.06	1.00	2.94	0.06
Final Sat.:	1650	201	1449	1650	825	825	1650	4850	100	1650	4858	92
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.02	0.01	0.00	0.00	0.00	0.14	0.14	0.03	0.21	0.21
Crit Volume:		41			13			2			342	
Crit Moves:		****			****			****			****	

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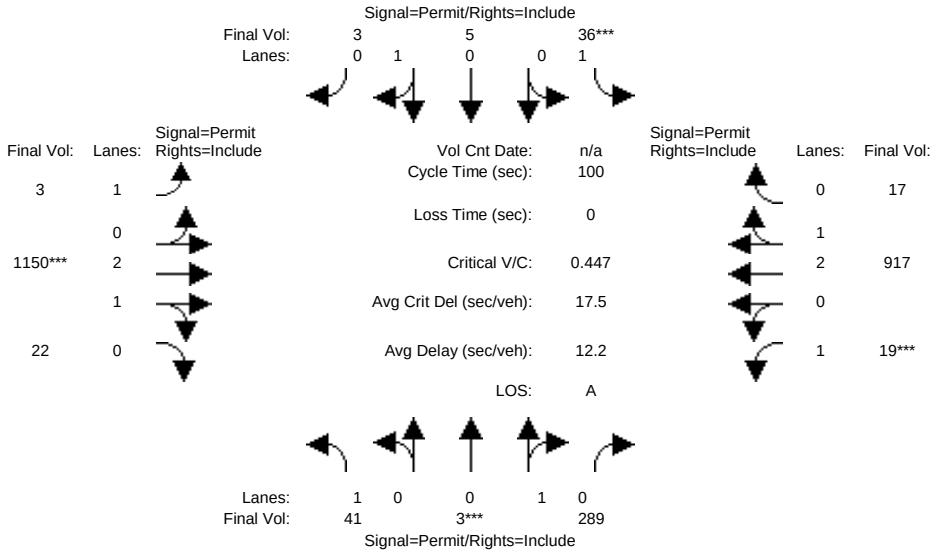
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #301: Locust Rd and Baseline Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	41	3	289	36	5	3	3	1150	22	19	917	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	3	289	36	5	3	3	1150	22	19	917	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	3	289	36	5	3	3	1150	22	19	917	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	3	289	36	5	3	3	1150	22	19	917	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	3	289	36	5	3	3	1150	22	19	917	17
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.01	0.99	1.00	0.62	0.38	1.00	2.94	0.06	1.00	2.95	0.05
Final Sat.:	1650	17	1633	1650	1031	619	1650	4857	93	1650	4860	90
Capacity Analysis Module:												
Vol/Sat:	0.02	0.18	0.18	0.02	0.00	0.00	0.00	0.24	0.24	0.01	0.19	0.19
Crit Volume:		292			36			391			19	
Crit Moves:		****			****			****			****	

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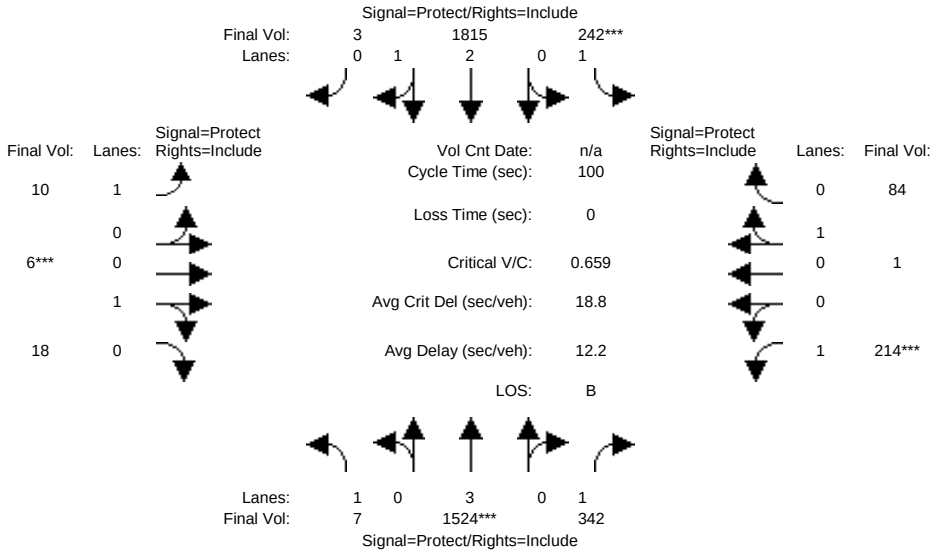
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #305: Watt Ave/PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	7	1524	342	242	1815	3	10	6	18	214	1	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	1524	342	242	1815	3	10	6	18	214	1	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	1524	342	242	1815	3	10	6	18	214	1	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	1524	342	242	1815	3	10	6	18	214	1	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	1524	342	242	1815	3	10	6	18	214	1	84
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.99	0.01	1.00	0.25	0.75	1.00	0.01	0.99
Final Sat.:	1500	4500	1500	1500	4493	7	1500	375	1125	1500	18	1482
Capacity Analysis Module:												
Vol/Sat:	0.00	0.34	0.23	0.16	0.40	0.40	0.01	0.02	0.02	0.14	0.06	0.06
Crit Volume:		508		242				24		214		
Crit Moves:		****		****				****		****		

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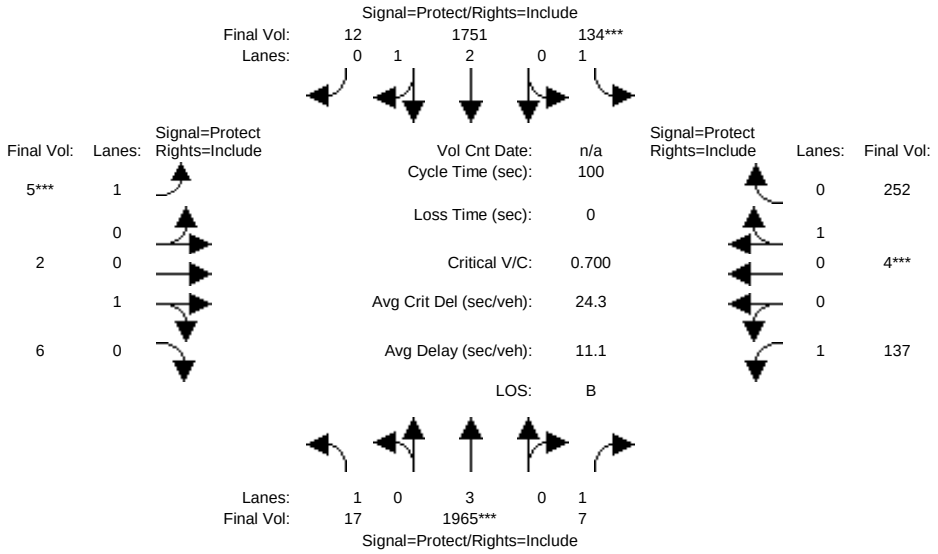
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #305: Watt Ave/PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	17	1965	7	134	1751	12	5	2	6	137	4	252
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	1965	7	134	1751	12	5	2	6	137	4	252
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	1965	7	134	1751	12	5	2	6	137	4	252
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	1965	7	134	1751	12	5	2	6	137	4	252
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	1965	7	134	1751	12	5	2	6	137	4	252
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.98	0.02	1.00	0.25	0.75	1.00	0.02	0.98
Final Sat.:	1500	4500	1500	1500	4469	31	1500	375	1125	1500	23	1477
Capacity Analysis Module:												
Vol/Sat:	0.01	0.44	0.00	0.09	0.39	0.39	0.00	0.01	0.01	0.09	0.17	0.17
Crit Volume:		655			134			5			256	
Crit Moves:		****			****			****			****	

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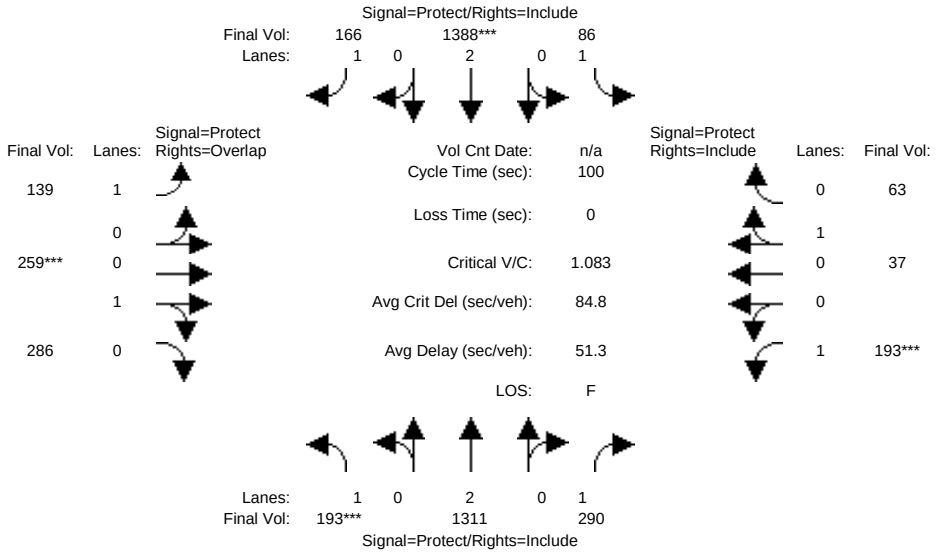
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	193	1311	290	86	1388	166	139	259	286	193	37	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	193	1311	290	86	1388	166	139	259	286	193	37	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	193	1311	290	86	1388	166	139	259	286	193	37	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	193	1311	290	86	1388	166	139	259	286	193	37	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	193	1311	290	86	1388	166	139	259	286	193	37	63
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.48	0.52	1.00	0.37	0.63
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	713	787	1500	555	945
Capacity Analysis Module:												
Vol/Sat:	0.13	0.44	0.19	0.06	0.46	0.11	0.09	0.36	0.36	0.13	0.07	0.07
Crit Volume:	193				694			545		193		
Crit Moves:	****				****			****		****		

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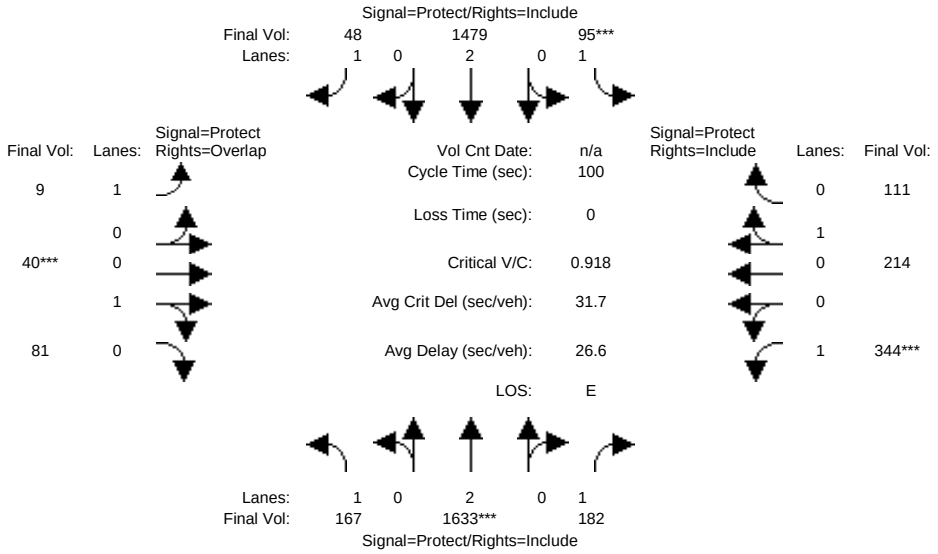
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	167	1633	182	95	1479	48	9	40	81	344	214	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	167	1633	182	95	1479	48	9	40	81	344	214	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	167	1633	182	95	1479	48	9	40	81	344	214	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	167	1633	182	95	1479	48	9	40	81	344	214	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	167	1633	182	95	1479	48	9	40	81	344	214	111
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.33	0.67	1.00	0.66	0.34
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	496	1004	1500	988	512
Capacity Analysis Module:												
Vol/Sat:	0.11	0.54	0.12	0.06	0.49	0.03	0.01	0.08	0.08	0.23	0.22	0.22
Crit Volume:		816			95			121			344	
Crit Moves:		****			****			****			****	

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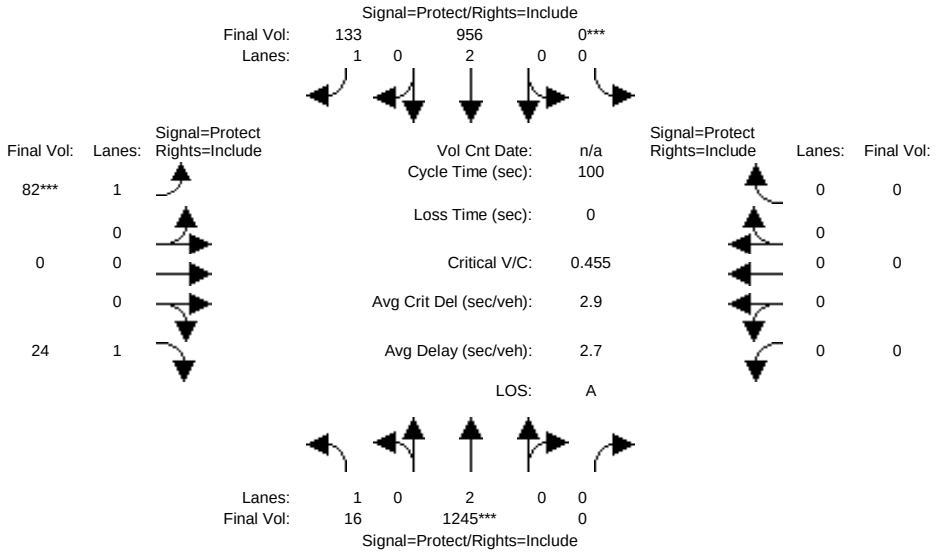
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #308: Fiddyment Rd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	16	1245	0	0	956	133	82	0	24	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	1245	0	0	956	133	82	0	24	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	1245	0	0	956	133	82	0	24	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	1245	0	0	956	133	82	0	24	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	1245	0	0	956	133	82	0	24	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	3100	0	0	3100	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.40	0.00	0.00	0.31	0.09	0.05	0.00	0.02	0.00	0.00	0.00
Crit Volume:		623			0			82			0	
Crit Moves:		****			****			****				

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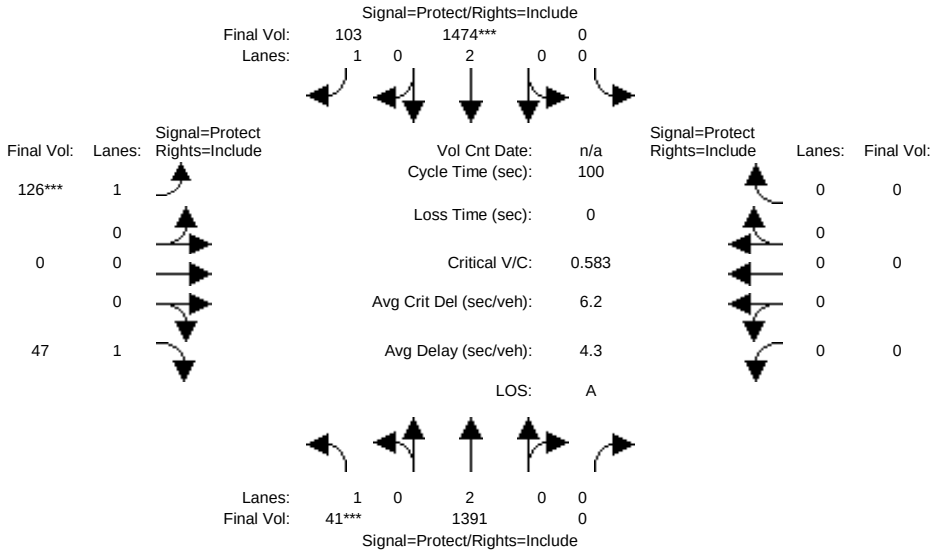
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #308: Fiddyment Rd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	41	1391	0	0	1474	103	126	0	47	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	1391	0	0	1474	103	126	0	47	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	1391	0	0	1474	103	126	0	47	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	1391	0	0	1474	103	126	0	47	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	1391	0	0	1474	103	126	0	47	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	3100	0	0	3100	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.45	0.00	0.00	0.48	0.07	0.08	0.00	0.03	0.00	0.00	0.00
Crit Volume:	41				737		126				0	
Crit Moves:	****				****		****					

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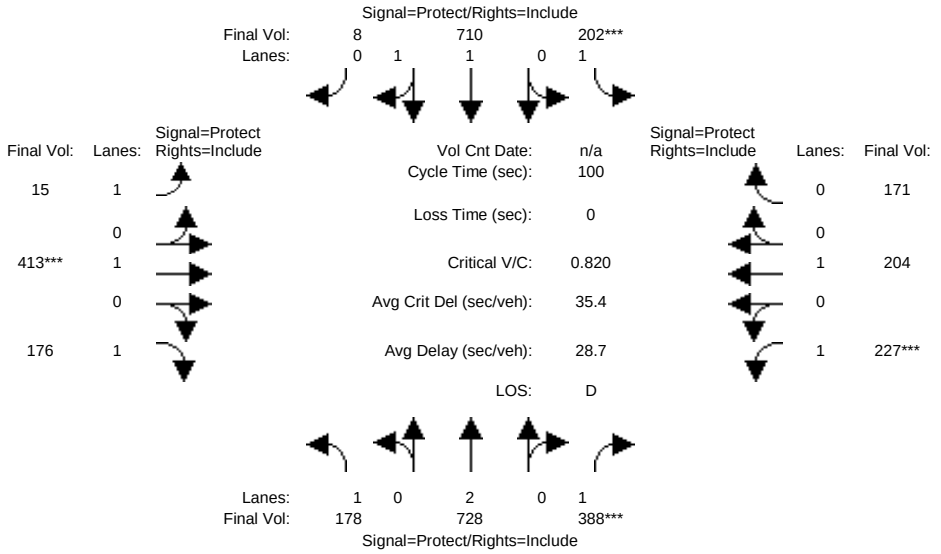
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #309: Fiddyment Rd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	178	728	388	202	710	8	15	413	176	227	204	171
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	728	388	202	710	8	15	413	176	227	204	171
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	178	728	388	202	710	8	15	413	176	227	204	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	728	388	202	710	8	15	413	176	227	204	171
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	728	388	202	710	8	15	413	176	227	204	171
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.98	0.02	1.00	1.00	1.00	1.00	0.54	0.46
Final Sat.:	1500	3000	1500	1500	2967	33	1500	1500	1500	1500	816	684
Capacity Analysis Module:												
Vol/Sat:	0.12	0.24	0.26	0.13	0.24	0.24	0.01	0.28	0.12	0.15	0.25	0.25
Crit Volume:			388	202				413		227		
Crit Moves:			****	****				****		****		

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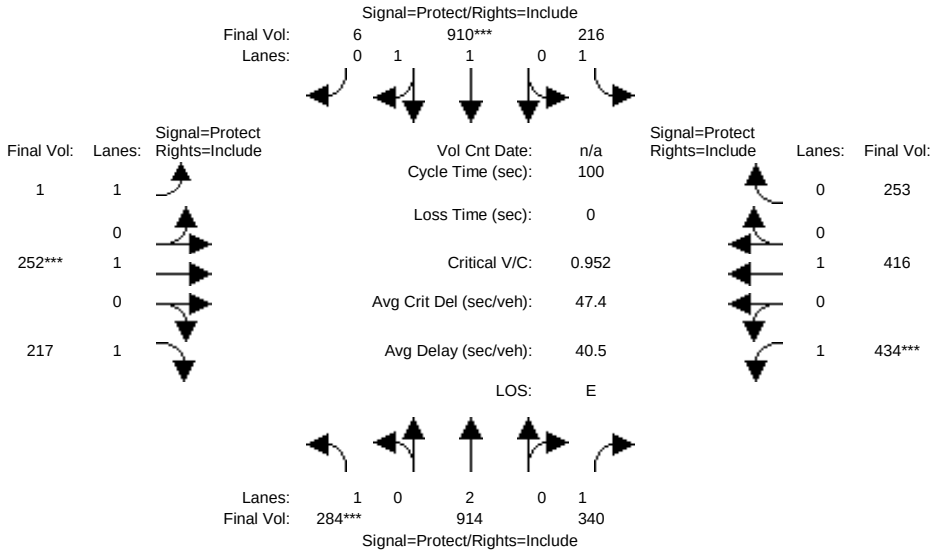
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #309: Fiddyment Rd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	284	914	340	216	910	6	1	252	217	434	416	253
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	284	914	340	216	910	6	1	252	217	434	416	253
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	284	914	340	216	910	6	1	252	217	434	416	253
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	284	914	340	216	910	6	1	252	217	434	416	253
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	284	914	340	216	910	6	1	252	217	434	416	253
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.99	0.01	1.00	1.00	1.00	1.00	0.62	0.38
Final Sat.:	1500	3000	1500	1500	2980	20	1500	1500	1500	1500	933	567
Capacity Analysis Module:												
Vol/Sat:	0.19	0.30	0.23	0.14	0.31	0.31	0.00	0.17	0.14	0.29	0.45	0.45
Crit Volume:	284				458			252			434	
Crit Moves:	****				****			****			****	

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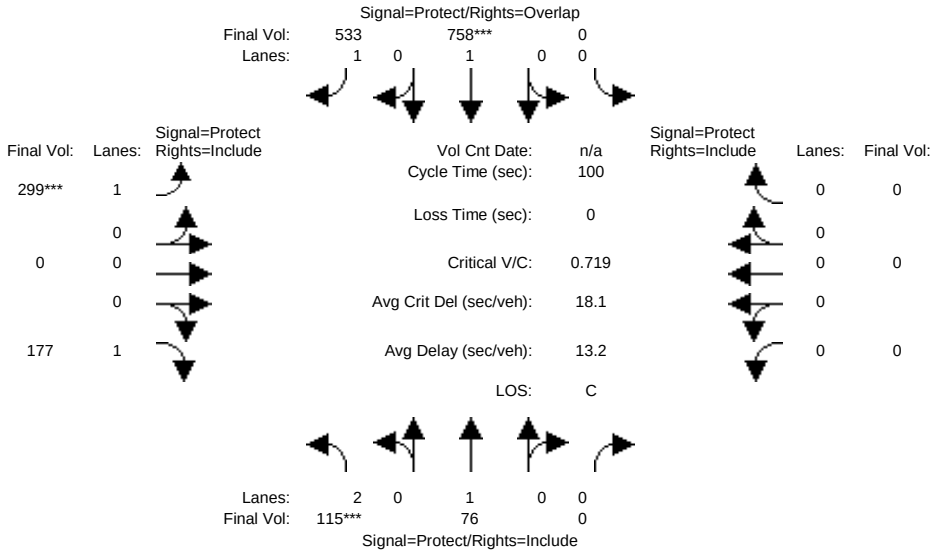
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	115	76	0	0	758	533	299	0	177	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	76	0	0	758	533	299	0	177	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	115	76	0	0	758	533	299	0	177	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	76	0	0	758	533	299	0	177	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	76	0	0	758	533	299	0	177	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.05	0.00	0.00	0.49	0.34	0.19	0.00	0.11	0.00	0.00	0.00
Crit Volume:	57				758		299				0	
Crit Moves:	****				****		****					

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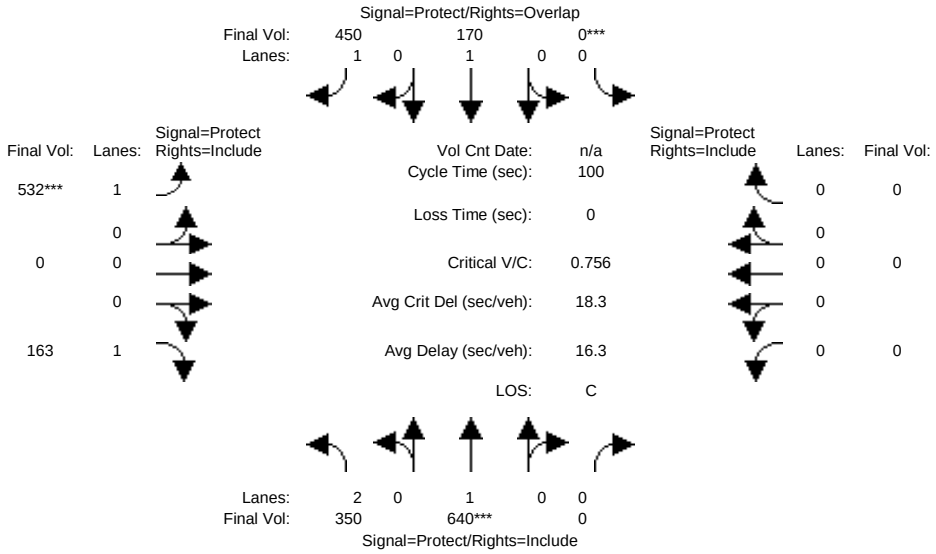
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	350	640	0	0	170	450	532	0	163	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	350	640	0	0	170	450	532	0	163	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	350	640	0	0	170	450	532	0	163	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	350	640	0	0	170	450	532	0	163	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	350	640	0	0	170	450	532	0	163	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.41	0.00	0.00	0.11	0.29	0.34	0.00	0.11	0.00	0.00	0.00
Crit Volume:		640			0			532			0	
Crit Moves:		****			****			****				

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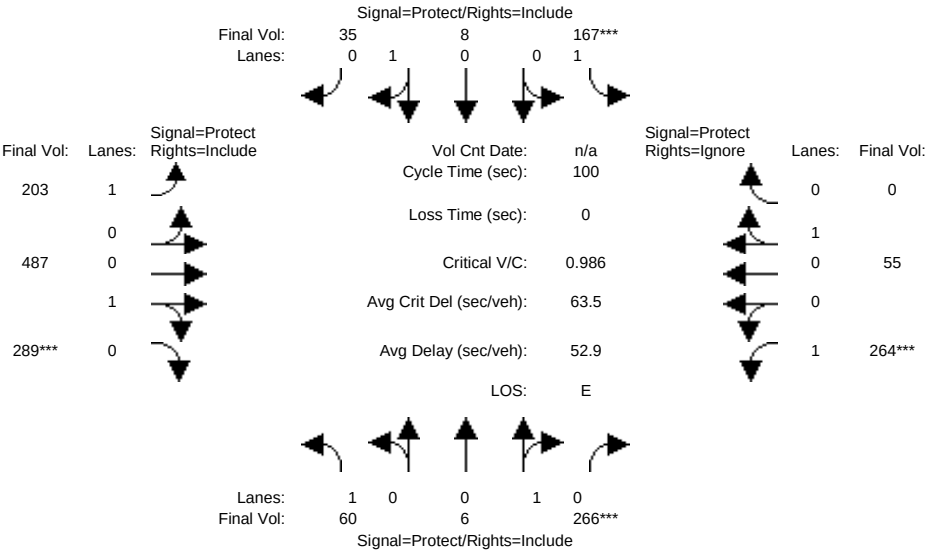
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	60	6	266	167	8	35	203	487	289	264	55	228
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	6	266	167	8	35	203	487	289	264	55	228
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	60	6	266	167	8	35	203	487	289	264	55	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	6	266	167	8	35	203	487	289	264	55	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	60	6	266	167	8	35	203	487	289	264	55	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	1.00	0.19	0.81	1.00	0.63	0.37	1.00	1.00	0.00
Final Sat.:	1500	33	1467	1500	279	1221	1500	941	559	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.18	0.11	0.03	0.03	0.14	0.52	0.52	0.18	0.04	0.00
Crit Volume:			272	167					776	264		
Crit Moves:			****	****					****	****		

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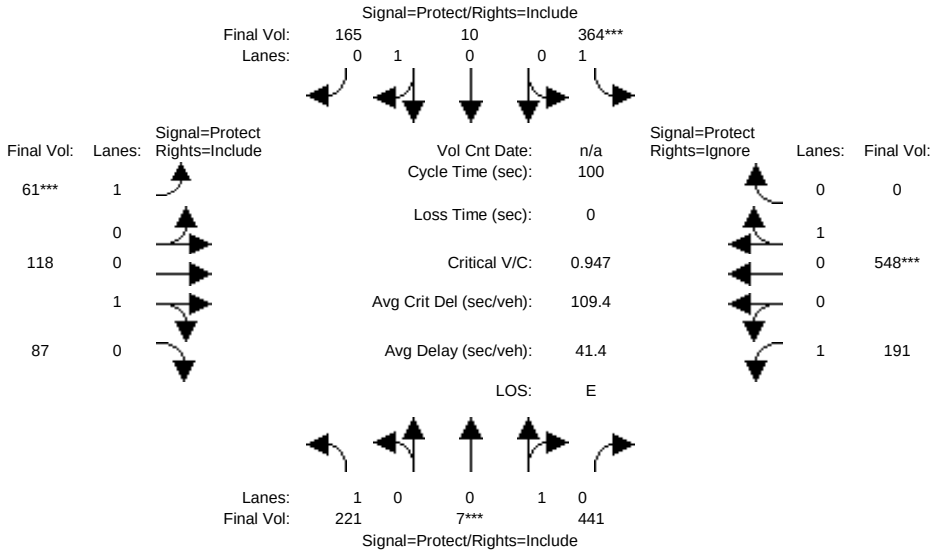
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	221	7	441	364	10	165	61	118	87	191	548	116
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	221	7	441	364	10	165	61	118	87	191	548	116
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	221	7	441	364	10	165	61	118	87	191	548	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	7	441	364	10	165	61	118	87	191	548	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	221	7	441	364	10	165	61	118	87	191	548	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	1.00	0.06	0.94	1.00	0.58	0.42	1.00	1.00	0.00
Final Sat.:	1500	23	1477	1500	86	1414	1500	863	637	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.15	0.30	0.30	0.24	0.12	0.12	0.04	0.14	0.14	0.13	0.37	0.00
Crit Volume:		448			364			61			548	
Crit Moves:		****			****			****			****	

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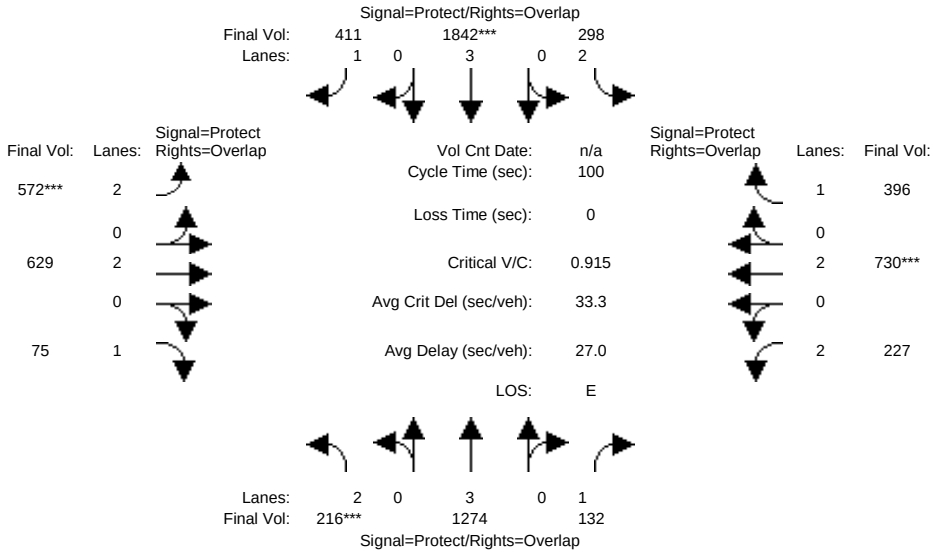
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	216	1274	132	298	1842	411	572	629	75	227	730	396
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	1274	132	298	1842	411	572	629	75	227	730	396
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	216	1274	132	298	1842	411	572	629	75	227	730	396
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	216	1274	132	298	1842	411	572	629	75	227	730	396
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	216	1274	132	298	1842	411	572	629	75	227	730	396
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.07	0.28	0.09	0.10	0.41	0.27	0.19	0.21	0.05	0.08	0.24	0.26
Crit Volume:	108				614		286				365	
Crit Moves:	****				****		****				****	

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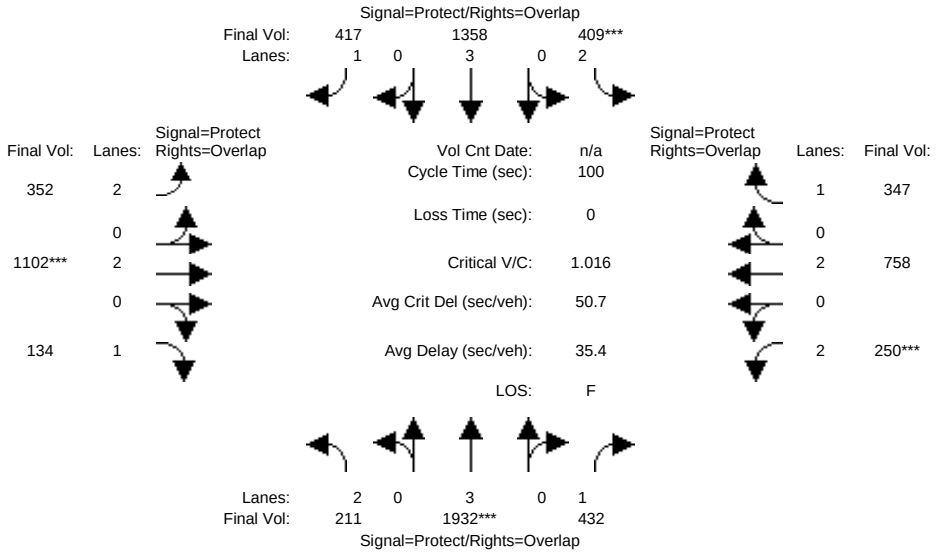
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	211	1932	432	409	1358	417	352	1102	134	250	758	347
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	211	1932	432	409	1358	417	352	1102	134	250	758	347
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	211	1932	432	409	1358	417	352	1102	134	250	758	347
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	211	1932	432	409	1358	417	352	1102	134	250	758	347
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	211	1932	432	409	1358	417	352	1102	134	250	758	347
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.07	0.43	0.29	0.14	0.30	0.28	0.12	0.37	0.09	0.08	0.25	0.23
Crit Volume:		644			205			551			125	
Crit Moves:		****			****			****			****	

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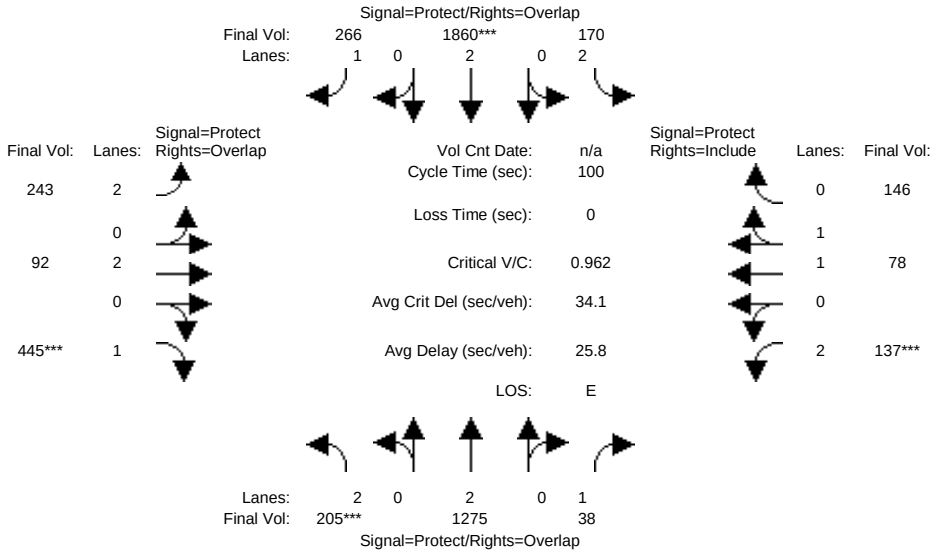
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	205	1275	38	170	1860	266	243	92	445	137	78	146
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	1275	38	170	1860	266	243	92	445	137	78	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	205	1275	38	170	1860	266	243	92	445	137	78	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	205	1275	38	170	1860	266	243	92	445	137	78	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	205	1275	38	170	1860	266	243	92	445	137	78	146
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	1500	1500
Capacity Analysis Module:												
Vol/Sat:	0.07	0.43	0.03	0.06	0.62	0.18	0.08	0.03	0.30	0.05	0.05	0.10
Crit Volume:	0				930				445	69		
Crit Moves:	****				****				****	****		

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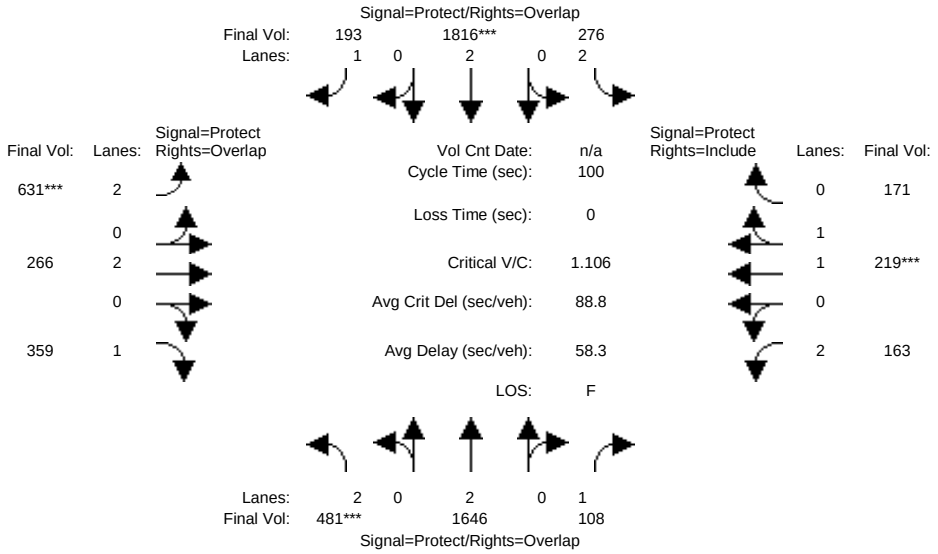
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	481	1646	108	276	1816	193	631	266	359	163	219	171
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	481	1646	108	276	1816	193	631	266	359	163	219	171
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	481	1646	108	276	1816	193	631	266	359	163	219	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	481	1646	108	276	1816	193	631	266	359	163	219	171
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	481	1646	108	276	1816	193	631	266	359	163	219	171
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.12	0.88
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	1685	1315
Capacity Analysis Module:												
Vol/Sat:	0.16	0.55	0.07	0.09	0.61	0.13	0.21	0.09	0.24	0.05	0.13	0.13
Crit Volume:	240				908		316				195	
Crit Moves:	****				****		****				****	

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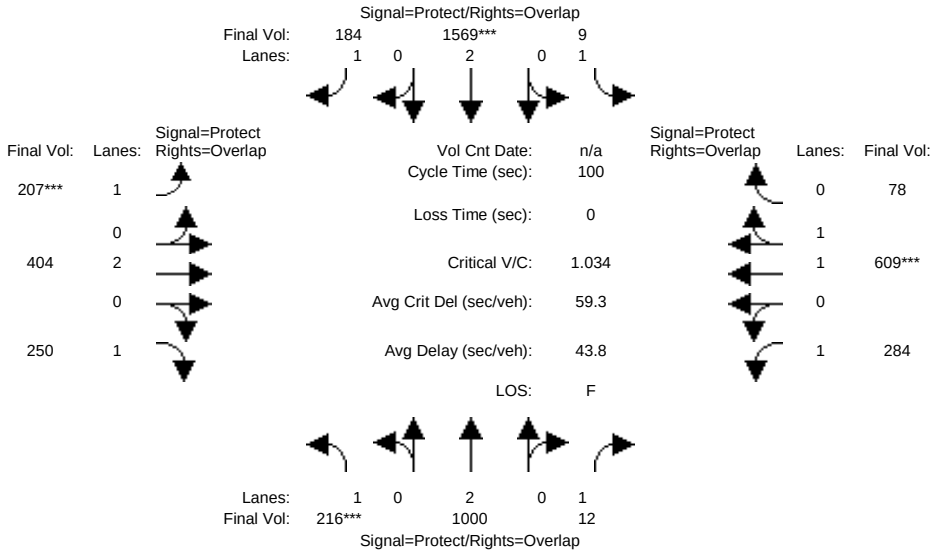
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	216	1000	12	9	1569	184	207	404	250	284	609	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	1000	12	9	1569	184	207	404	250	284	609	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	216	1000	12	9	1569	184	207	404	250	284	609	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	216	1000	12	9	1569	184	207	404	250	284	609	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	216	1000	12	9	1569	184	207	404	250	284	609	78
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.77	0.23
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	2659	341
Capacity Analysis Module:												
Vol/Sat:	0.14	0.33	0.01	0.01	0.52	0.12	0.14	0.13	0.17	0.19	0.23	0.23
Crit Volume:	216				785		207				343	
Crit Moves:	****				****		****				****	

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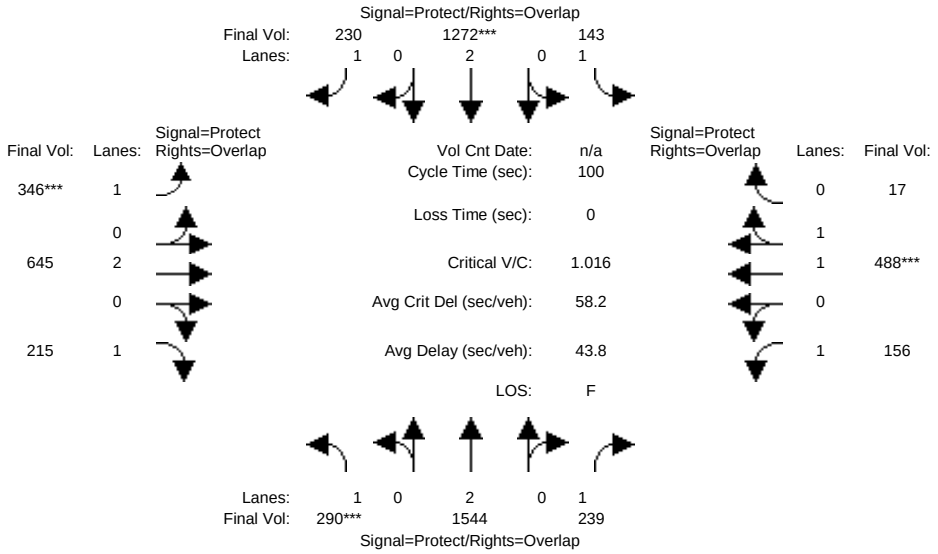
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	290	1544	239	143	1272	230	346	645	215	156	488	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	290	1544	239	143	1272	230	346	645	215	156	488	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	290	1544	239	143	1272	230	346	645	215	156	488	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	290	1544	239	143	1272	230	346	645	215	156	488	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	290	1544	239	143	1272	230	346	645	215	156	488	17
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.93	0.07
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	2899	101
Capacity Analysis Module:												
Vol/Sat:	0.19	0.51	0.16	0.10	0.42	0.15	0.23	0.22	0.14	0.10	0.17	0.17
Crit Volume:	290				636		346				253	
Crit Moves:	****				****		****				****	

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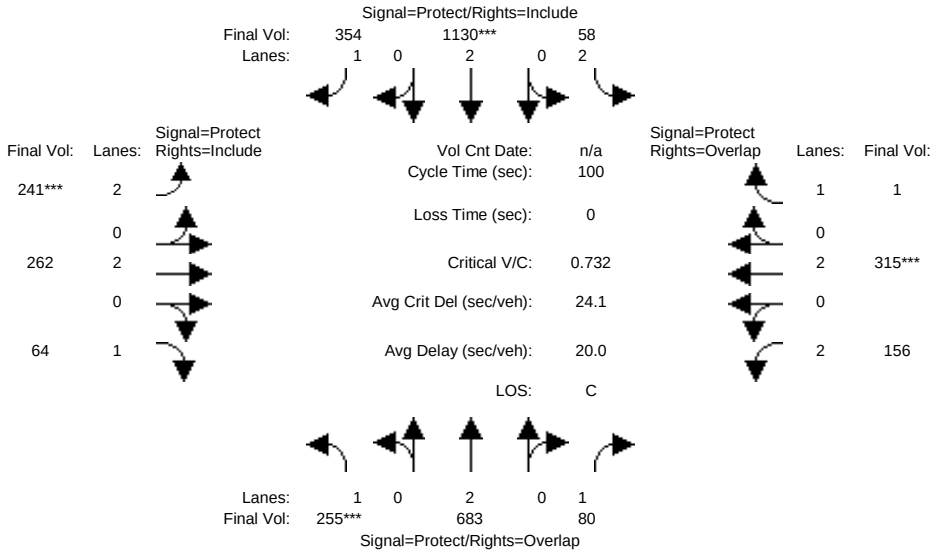
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	255	683	80	58	1130	354	241	262	64	156	315	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	255	683	80	58	1130	354	241	262	64	156	315	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	255	683	80	58	1130	354	241	262	64	156	315	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	255	683	80	58	1130	354	241	262	64	156	315	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	255	683	80	58	1130	354	241	262	64	156	315	1
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.17	0.23	0.05	0.02	0.38	0.24	0.08	0.09	0.04	0.05	0.11	0.00
Crit Volume:	255				565		121				158	
Crit Moves:	****				****		****				****	

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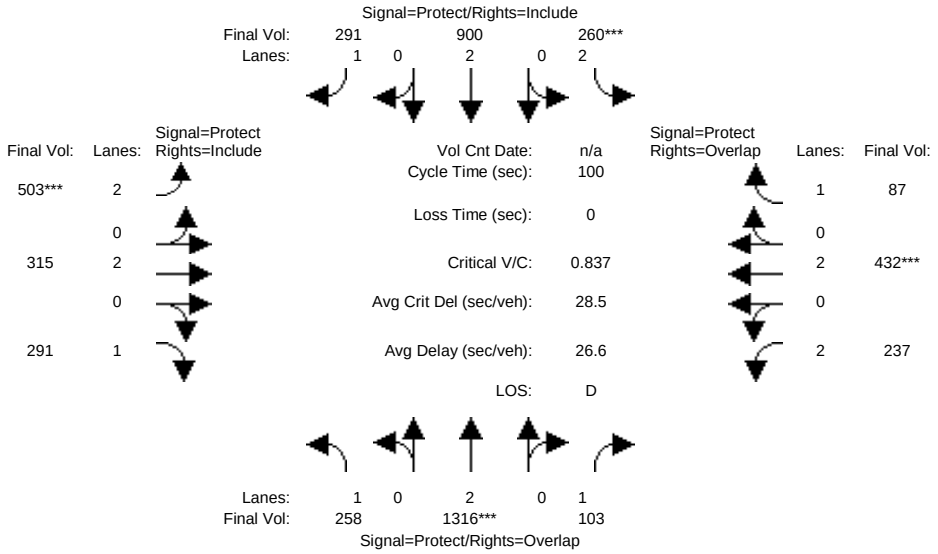
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	258	1316	103	260	900	291	503	315	291	237	432	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	258	1316	103	260	900	291	503	315	291	237	432	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	258	1316	103	260	900	291	503	315	291	237	432	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	258	1316	103	260	900	291	503	315	291	237	432	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	258	1316	103	260	900	291	503	315	291	237	432	87
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.17	0.44	0.07	0.09	0.30	0.19	0.17	0.11	0.19	0.08	0.14	0.06
Crit Volume:		658			130			252			216	
Crit Moves:		****			****			****			****	

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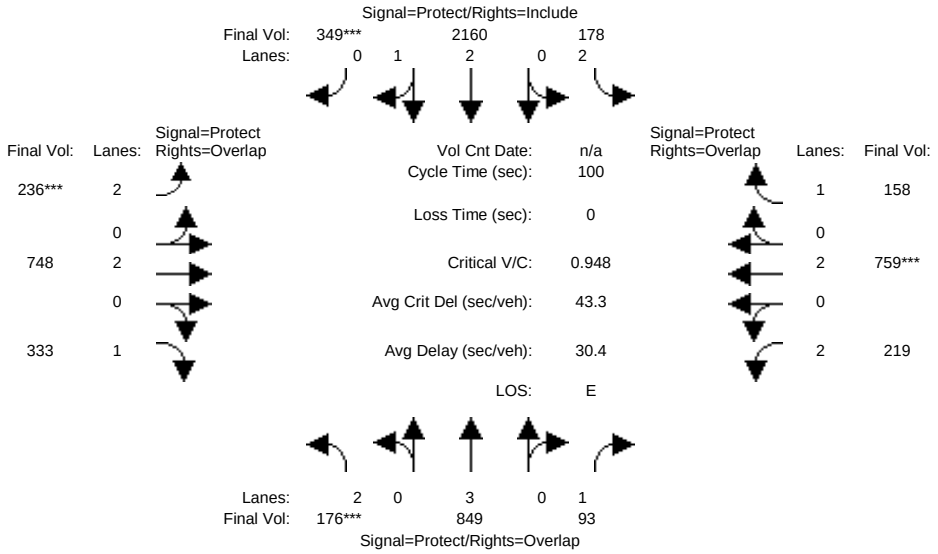
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	176	849	93	178	2160	349	236	748	333	219	759	158
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	176	849	93	178	2160	349	236	748	333	219	759	158
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	176	849	93	178	2160	349	236	748	333	219	759	158
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	849	93	178	2160	349	236	748	333	219	759	158
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	176	849	93	178	2160	349	236	748	333	219	759	158
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.58	0.42	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3874	626	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.06	0.06	0.56	0.56	0.08	0.25	0.22	0.07	0.25	0.11
Crit Volume:	88					836	118				380	
Crit Moves:	****					****	****				****	

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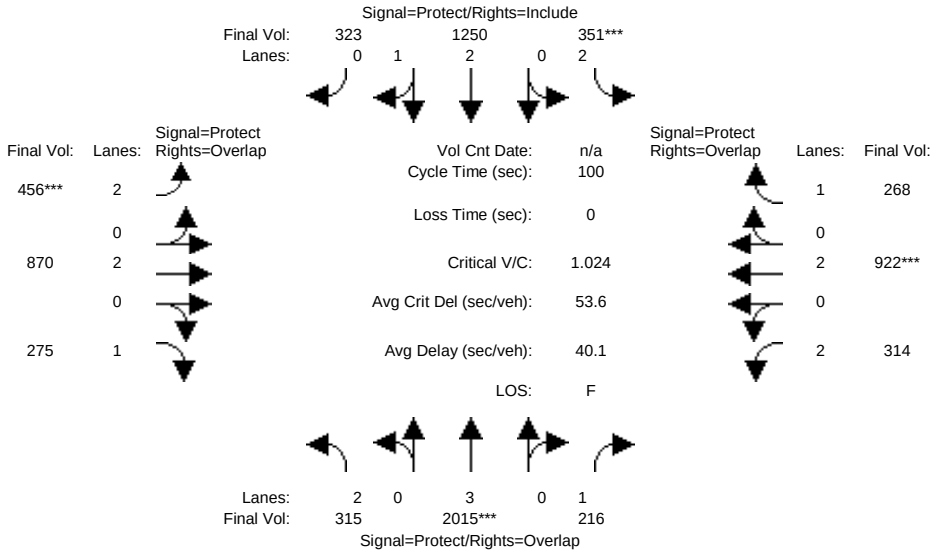
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	315	2015	216	351	1250	323	456	870	275	314	922	268
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	315	2015	216	351	1250	323	456	870	275	314	922	268
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	315	2015	216	351	1250	323	456	870	275	314	922	268
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	315	2015	216	351	1250	323	456	870	275	314	922	268
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	315	2015	216	351	1250	323	456	870	275	314	922	268
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.38	0.62	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3576	924	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.11	0.45	0.14	0.12	0.35	0.35	0.15	0.29	0.18	0.10	0.31	0.18
Crit Volume:		672			176			228			461	
Crit Moves:		****			****			****			****	

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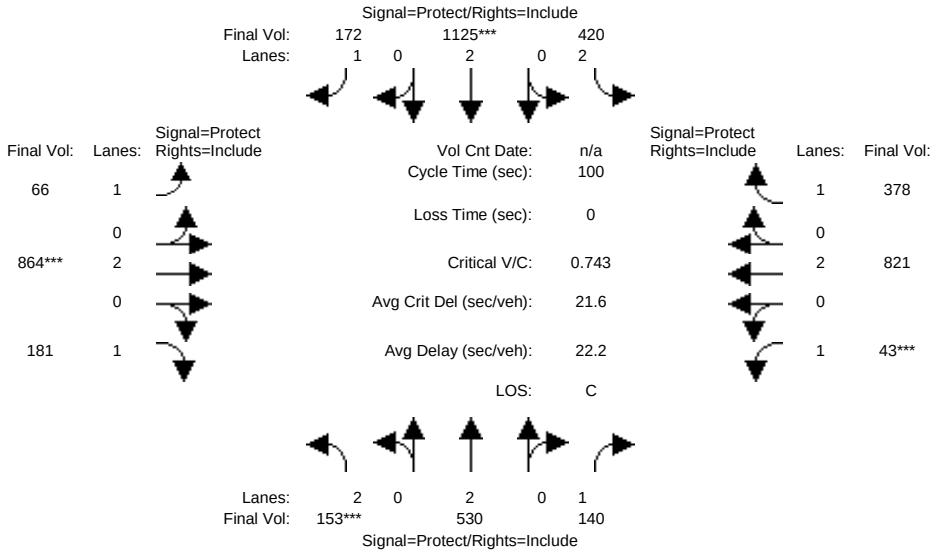
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project AM Peak Hour

Intersection #320: Walerga and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	153	530	140	420	1125	172	66	864	181	43	821	378
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	153	530	140	420	1125	172	66	864	181	43	821	378
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	153	530	140	420	1125	172	66	864	181	43	821	378
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	530	140	420	1125	172	66	864	181	43	821	378
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	153	530	140	420	1125	172	66	864	181	43	821	378
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.05	0.18	0.09	0.14	0.38	0.11	0.04	0.29	0.12	0.03	0.27	0.25
Crit Volume:	77				563			432			43	
Crit Moves:	****				****			****			****	

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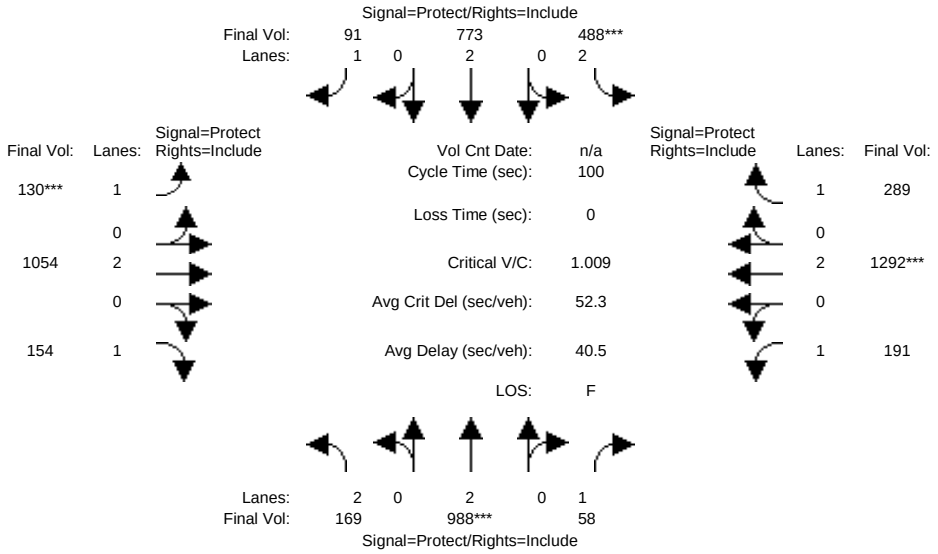
City of Roseville
CIP No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP No Project PM Peak Hour

Intersection #320: Walerga and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	169	988	58	488	773	91	130	1054	154	191	1292	289
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	169	988	58	488	773	91	130	1054	154	191	1292	289
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	169	988	58	488	773	91	130	1054	154	191	1292	289
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	169	988	58	488	773	91	130	1054	154	191	1292	289
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	169	988	58	488	773	91	130	1054	154	191	1292	289
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.33	0.04	0.16	0.26	0.06	0.09	0.35	0.10	0.13	0.43	0.19
Crit Volume:		494			244			130			646	
Crit Moves:		****			****			****			****	

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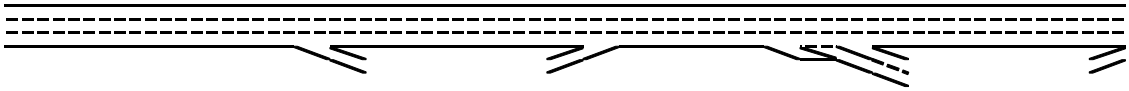
FREEWAY FACILITIES

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP No Project Conditions
Timee Period: 2014 AM Peak Hour

Location	1	2	3	4	5	6	



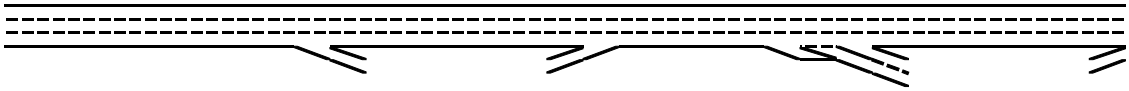
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Define Freeway Segment							
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	
Length (ft)	1,780	1,500	2,960	1,500	1,500	1,250	
Accel Length				270			
Decel Length		120			1,500		
Mainline Volume	6,330	6,330	5,560	5,560	6,070	5,030	
On Ramp Volume				510			
Off Ramp Volume		770			1,040		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (GP)							
GP Volume (vph)	6,330	6,330	5,560	6,070	6,070	5,030	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	3	3	3	3	3	3	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	6,813	6,813	5,984	6,533	6,533	5,414	
GP Flow (pcphpl)	2,271	2,271	1,995	2,178	2,178	1,805	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.97	0.97	0.85	0.93	0.93	0.77	
Speed (mph)	54.2	54.2	60.0	56.4	56.4	62.7	
Density (pcphpl)	41.9	41.9	33.3	38.6	38.6	28.8	
LOS	E	E	D	E	E	D	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		6,813		5,991	6,533		
GP_{IN} Cap (pcph)		7,050		7,050	7,050		
GP_{IN} v/c ratio		0.97		0.85	0.93		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		6,020		6,533	5,422		
GP_{OUT} Cap (pcph)		7,050		7,050	7,050		
GP_{OUT} v/c ratio		0.85		0.93	0.77		

Location	1	2	3	4	5	6	



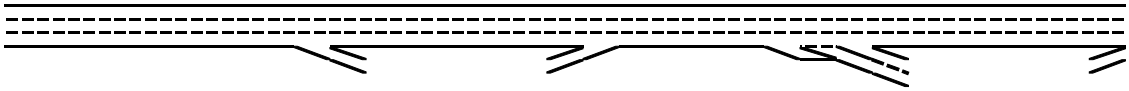
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)				510			
PHF				0.95			
Total Lanes				1			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				2.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.990			
f_P				1.00			
On Flow (pcph)				542			
On Flow (pcphpl)				542			
Calculate On Ramp Roadway Operations							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.26			

Location	1	2	3	4	5	6	



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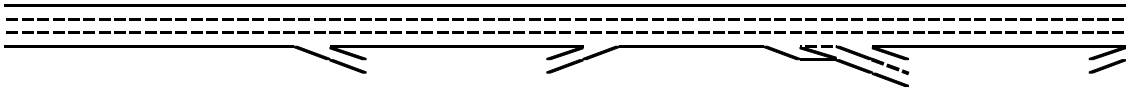
<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Off Ramp Flow Rate							
Off Volume (vph)		770			1,040		
PHF		0.98			0.95		
Total Lanes		1			2		
Terrain		Level			Level		
Grade %		0.0%			0.0%		
Grade Length (mi)		0.00			0.00		
Truck & Bus %		2.0%			3.0%		
RV %		0.0%			0.0%		
E_T		1.5			1.5		
E_R		1.2			1.2		
f_{HV}		0.990			0.985		
f_P		1.00			1.00		
Off Flow (pcph)		794			1,111		
Off Flow (pcphpl)		794			556		
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right			Right		
Off Ramp Speed		45			45		
Off Ramp Cap (pcph)		2,100			4,200		
Off Ramp v/c ratio		0.38			0.26		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps							
Up Type		No		Off			
Up Distance				2,960			
Up Flow (pcph)				794			
Down Type		On		No			
Down Distance		2,960					
Down Flow (pcph)		542					
Calculate Merge Influence Area Operations							
Effective v_P (pcph)				5,991			
Up Ramp L_{EQ}				1,469			
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)				0.585			
P_{FM} (Eqn 13-4)				0.679			
P_{FM} (Eqn 13-5)							
P_{FM}				0.585			
v_{12} (pcph)				3,505			
v_3 (pcph)				2,486			
v_{34} (pcph)							
v_{12a} (pcph)				3,505			
v_{R12a} (pcph)				4,047			
Merge Speed Index				0.52			
Merge Area Speed				53.0			
Outer Lanes Volume				2,486			
Outer Lanes Speed				57.4			
Segment Speed				54.6			
Merge v/c ratio				0.88			
Merge Density				35.1			
Merge LOS				E			

Location	1	2	3	4	5	6	



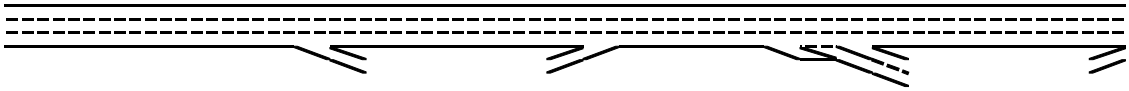
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)		6,813			6,533		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}		848					
P_{FD} (Eqn 13-9)		0.553			0.546		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		0.553			0.450		
v_{12} (pcph)		4,123			3,551		
v_3 (pcph)		2,690			2,982		
v_{34} (pcph)							
v_{12a} (pcph)		4,123			3,833		
Diverge Speed Index		0.37			0.40		
Diverge Area Speed		56.5			55.8		
Outer Lanes Volume		2,690			2,700		
Outer Lanes Speed		64.7			64.7		
Segment Speed		59.5			59.2		
Diverge v/c ratio		0.94			0.87		
Diverge Density		38.6			23.7		
Diverge LOS		E			C		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to Mainline Flow Rate for Weave Segments							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	1	2	3	4	5	6	



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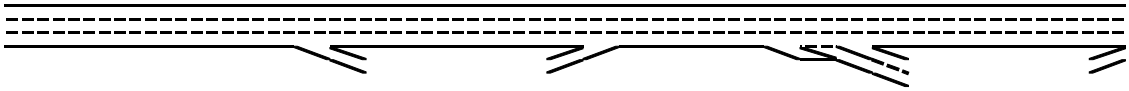
<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Mainline to Off Ramp Flow Rate for Weave Segments							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Location	1	2	3	4	5	6	



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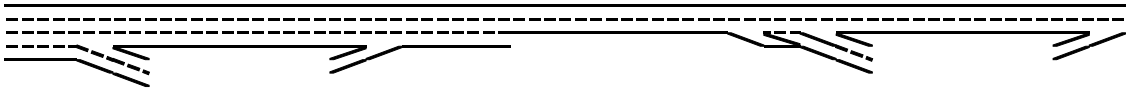
<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Weave Segment Operations							
Weave Type							
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.97	0.94	0.85	0.88	0.87	0.77	
Segment Density	41.9	38.6	33.3	35.1	23.7	28.8	
Segment LOS	E	E	D	E	C	D	
Over Capacity							

Location	7	8	9	10	11	12	



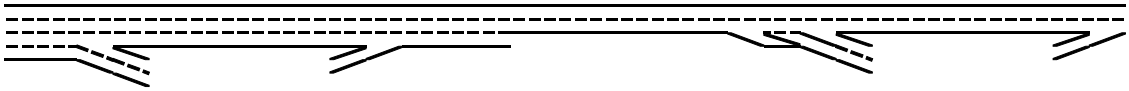
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Define Freeway Segment							
Type	Weave	Basic	Merge	Basic	Diverge	Basic	
Length (ft)	3,370	1,920	1,500	3,300	1,500	1,800	
Accel Length			375				
Decel Length					1,500		
Mainline Volume	5,030	3,670	3,670	4,440	4,440	2,930	
On Ramp Volume	430		770				
Off Ramp Volume	1,790				1,510		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	5,460	3,670	4,440	4,440	4,440	2,930	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	4	3	3	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	5,877	3,950	4,779	4,779	4,779	3,154	
GP Flow (pcphpl)	1,469	1,317	1,593	2,389	2,389	1,577	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.63	0.56	0.68	1.02	1.02	0.67	
Speed (mph)	64.9	65.0	64.5	-	-	64.6	
Density (pcphpl)	22.6	20.3	24.7	-	-	24.4	
LOS	C	C	C	F	F	C	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	5,420		3,960		4,779		
GP_{IN} Cap (pcph)	7,050		7,050		4,700		
GP_{IN} v/c ratio	0.77		0.56		1.02		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	3,964		4,779		3,173		
GP_{OUT} Cap (pcph)	7,050		7,050		4,700		
GP_{OUT} v/c ratio	0.56		0.68		0.68		

Location	7	8	9	10	11	12	



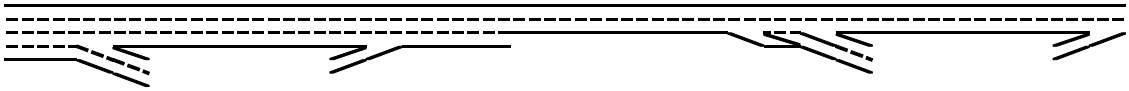
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	430		770				
PHF	0.95		0.95				
Total Lanes	1		1				
Terrain	Level		Level				
Grade %	0.0%		0.0%				
Grade Length (mi)	0.00		0.00				
Truck & Bus %	2.0%		2.0%				
RV %	0.0%		0.0%				
E_T	1.5		1.5				
E_R	1.2		1.2				
f_{HV}	0.990		0.990				
f_P	1.00		1.00				
On Flow (pcph)	457		819				
On Flow (pcphpl)	457		819				
Calculate On Ramp Roadway Operations							
On Ramp Type	Right		Right				
On Ramp Speed (mph)	25		25				
On Ramp Cap (pcph)	1,900		1,900				
On Ramp v/c ratio	0.24		0.43				

Location	7	8	9	10	11	12	



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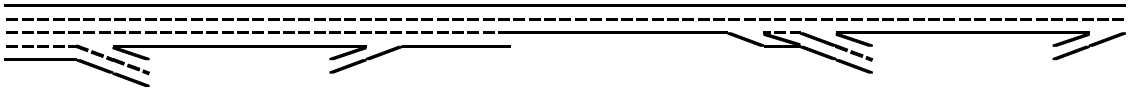
<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Off Ramp Flow Rate							
Off Volume (vph)	1,790				1,510		
PHF	0.95				0.95		
Total Lanes	2				2		
Terrain	Level				Level		
Grade %	0.0%				0.0%		
Grade Length (mi)	0.00				0.00		
Truck & Bus %	3.0%				2.0%		
RV %	0.0%				0.0%		
E_T	1.5				1.5		
E_R	1.2				1.2		
f_{HV}	0.985				0.990		
f_P	1.00				1.00		
Off Flow (pcph)	1,912				1,605		
Off Flow (pcphpl)	956				803		
Calculate Off Ramp Roadway Operations							
Off Ramp Type	Right				Right		
Off Ramp Speed	45				45		
Off Ramp Cap (pcph)	4,200				4,200		
Off Ramp v/c ratio	0.46				0.38		
Determine Adjacent Ramp for Three-Lane Main							
Up Type			No				
Up Distance							
Up Flow (pcph)							
Down Type			No				
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)			3,960				
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)			0.588				
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}			0.588				
v_{12} (pcph)			2,329				
v_3 (pcph)			1,632				
v_{34} (pcph)							
v_{12a} (pcph)			2,329				
v_{R12a} (pcph)			3,147				
Merge Speed Index			0.39				
Merge Area Speed			56.0				
Outer Lanes Volume			1,632				
Outer Lanes Speed			60.9				
Segment Speed			57.6				
Merge v/c ratio			0.68				
Merge Density			27.3				
Merge LOS			C				

Location	7	8	9	10	11	12	



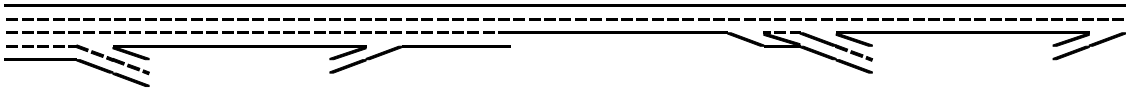
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)					4,779		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)					0.567		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}					1.000		
v_{12} (pcph)					4,779		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)					4,779		
Diverge Speed Index					-		
Diverge Area Speed					-		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio					1.09		
Diverge Density					-		
Diverge LOS					F		
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)	50						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to Off Flow (pcph)	53						
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)	380						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to ML Flow (pcph)	406						

Location	7	8	9	10	11	12	



Key

<> Express Lane (HOV)

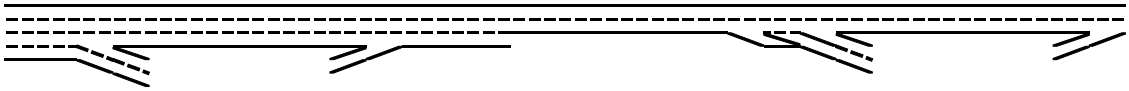
No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)	1,740						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
ML to Off Flow (pcph)	1,859						
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)	3,290						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
GP to GP Flow (pcph)	3,515						

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP No Project Conditions
Timee Period: 2014 AM Peak Hour

Location	7	8	9	10	11	12	



Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Weave Segment Operations							
Weave Type	One-sided						
Weave Length	2,370						
Segment Lanes	4						
Weave Lanes	2						
Weave Flow (pcph)	2,265						
Non-Weave Flow	3,569						
Segment Flow	5,834						
Max Weave Length	6,550						
Length Check	OK						
Ideal Weave Capacity	2,030						
f_{HV}	0.985						
f_P	0.999						
Capacity Condition 1	7,993						
Capacity Condition 2	6,084						
Weave v/c ratio	0.94						
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.94	0.56	0.68	1.02	1.09	0.67	
Segment Density		20.3	27.3	-	-	24.4	
Segment LOS		C	C	F	F	C	
Over Capacity				Segment GP Lanes	Segment GP Lanes In GP Lanes Diverge		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Define Freeway Segment							
Type	Merge	Weave	Basic	Merge	Merge	Basic	D
Length (ft)	1,000	2,770	1,420	1,150	1,500	1,020	
Accel Length	620			340	1,260		
Decel Length							
Mainline Volume	2,930	3,100	2,590	2,590	2,620	2,990	
On Ramp Volume	170	380		30	370		
Off Ramp Volume		890					
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	3,100	3,480	2,590	2,620	2,990	2,990	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	2	3	2	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	3,337	3,746	2,788	2,820	3,218	3,218	
GP Flow (pcphpl)	1,668	1,249	1,394	1,410	1,609	1,609	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.71	0.53	0.59	0.60	0.68	0.68	
Speed (mph)	64.0	65.0	65.0	65.0	64.4	64.4	
Density (pcphpl)	26.1	19.2	21.4	21.7	25.0	25.0	
LOS	D	C	C	C	C	C	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	3,156	3,342		2,788	2,825		
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700		
GP_{IN} v/c ratio	0.67	0.71		0.59	0.60		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	3,337	2,799		2,820	3,218		
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700		
GP_{OUT} v/c ratio	0.71	0.60		0.60	0.68		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	170	380		30	370		
PHF	0.95	0.95		0.95	0.95		
Total Lanes	1	1		1	1		
Terrain	Level	Level		Level	Level		
Grade %	0.0%	0.0%		0.0%	0.0%		
Grade Length (mi)	0.00	0.00		0.00	0.00		
Truck & Bus %	2.0%	2.0%		2.0%	2.0%		
RV %	0.0%	0.0%		0.0%	0.0%		
E_T	1.5	1.5		1.5	1.5		
E_R	1.2	1.2		1.2	1.2		
f_{HV}	0.990	0.990		0.990	0.990		
f_P	1.00	1.00		1.00	1.00		
On Flow (pcph)	181	404		32	393		
On Flow (pcphpl)	181	404		32	393		
Calculate On Ramp Roadway Operations							
On Ramp Type	Right	Right		Right	Right		
On Ramp Speed (mph)	25	45		25	45		
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100		
On Ramp v/c ratio	0.10	0.19		0.02	0.19		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Off Ramp Flow Rate							
Off Volume (vph)		890					
PHF		0.95					
Total Lanes		2					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		2.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.990					
f_P		1.00					
Off Flow (pcph)		946					
Off Flow (pcphpl)		473					
Calculate Off Ramp Roadway Operations							
Off Ramp Type							
Off Ramp Speed							
Off Ramp Cap (pcph)							
Off Ramp v/c ratio							
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)	3,156			2,788	2,825		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)	0.595			0.587	0.613		
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}	1.000			1.000	1.000		
v_{12} (pcph)	3,156			2,788	2,825		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)	3,156			2,788	2,825		
v_{R12a} (pcph)	3,337			2,820	3,218		
Merge Speed Index	0.40			0.37	0.31		
Merge Area Speed	55.8			56.5	58.0		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed	55.8			56.5	58.0		
Merge v/c ratio	0.73			0.61	0.70		
Merge Density	27.5			25.3	22.5		
Merge LOS	C			C	C		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)							
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)							
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}							
v_{12} (pcph)							
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							
Diverge Speed Index							
Diverge Area Speed							
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio							
Diverge Density							
Diverge LOS							
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)		95					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to Off Flow (pcph)		102					
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)		285					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to ML Flow (pcph)		305					

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)		795					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		6.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.971					
f_P		1.00					
ML to Off Flow (pcph)		862					
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)		2,305					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		6.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.971					
f_P		1.00					
GP to GP Flow (pcph)		2,499					

Location	13	14	15	16	17	18	

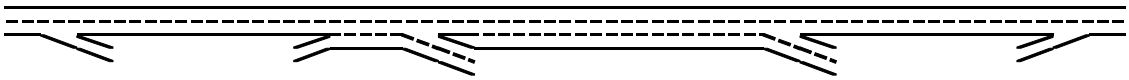
Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Weave Segment Operations							
Weave Type		One-sided					
Weave Length		1,770					
Segment Lanes		3					
Weave Lanes		2					
Weave Flow (pcph)		1,166					
Non-Weave Flow		2,601					
Segment Flow		3,767					
Max Weave Length		5,688					
Length Check		OK					
Ideal Weave Capacity		2,050					
f_{HV}		0.972					
f_P		0.999					
Capacity Condition 1		5,974					
Capacity Condition 2		7,528					
Weave v/c ratio		0.61					
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.73	0.61	0.59	0.61	0.70	0.68	
Segment Density	27.5		21.4	25.3	22.5	25.0	
Segment LOS	C		C	C	C	C	
Over Capacity							

Location	19	20	21	22	23	24	25



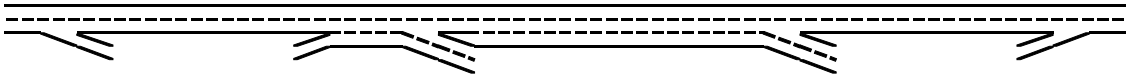
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Define Freeway Segment							
Type	iverge	Basic	Weave	Basic	Basic	Basic	Merge
Length (ft)	1,500	2,590	2,680	900	1,500	2,870	1,500
Accel Length							600
Decel Length	175						
Mainline Volume	2,990	2,060	2,060	1,910	1,910	940	940
On Ramp Volume			570				380
Off Ramp Volume	930		720		970		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	2,990	2,060	2,630	1,910	1,910	940	1,320
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	3	3	3	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	0.978
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,218	2,217	2,831	2,056	2,056	1,012	1,421
GP Flow (pcphpl)	1,609	1,109	944	685	685	506	710
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes							
v/c ratio	0.68	0.47	0.40	0.29	0.29	0.22	0.30
Speed (mph)	64.4	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	25.0	17.1	14.5	10.5	10.5	7.8	10.9
LOS	C	B	B	A	A	A	A
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	3,218		2,210				1,013
GP_{IN} Cap (pcph)	4,700		4,700				4,700
GP_{IN} v/c ratio	0.68		0.47				0.22
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	2,229		2,061		1,014		1,421
GP_{OUT} Cap (pcph)	4,700		4,700		4,700		4,700
GP_{OUT} v/c ratio	0.47		0.44		0.22		0.30

Location	19	20	21	22	23	24	25



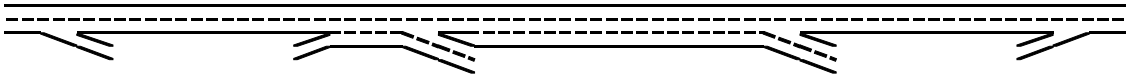
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)			570				380
PHF			0.95				0.95
Total Lanes			1				1
Terrain			Level				Level
Grade %			0.0%				0.0%
Grade Length (mi)			0.00				0.00
Truck & Bus %			7.0%				4.0%
RV %			0.0%				0.0%
E_T			1.5				1.5
E_R			1.2				1.2
f_{HV}			0.966				0.980
f_P			1.00				1.00
On Flow (pcph)			621				408
On Flow (pcphpl)			621				408
Calculate On Ramp Roadway Operations							
On Ramp Type			Right				Right
On Ramp Speed (mph)			45				45
On Ramp Cap (pcph)			2,100				2,100
On Ramp v/c ratio			0.30				0.19

Location	19	20	21	22	23	24	25



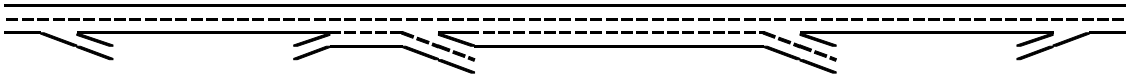
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Off Ramp Flow Rate							
Off Volume (vph)	930		720		970		
PHF	0.95		0.95		0.95		
Total Lanes	1		2		2		
Terrain	Level		Level		Level		
Grade %	0.0%		0.0%		0.0%		
Grade Length (mi)	0.00		0.00		0.00		
Truck & Bus %	2.0%		3.0%		4.0%		
RV %	0.0%		0.0%		0.0%		
E_T	1.5		1.5		1.5		
E_R	1.2		1.2		1.2		
f_{HV}	0.990		0.985		0.980		
f_P	1.00		1.00		1.00		
Off Flow (pcph)	989		769		1,041		
Off Flow (pcphpl)	989		385		521		
Calculate Off Ramp Roadway Operations							
Off Ramp Type	Right		Right		Right		
Off Ramp Speed	45		45		45		
Off Ramp Cap (pcph)	2,100		4,200		4,200		
Off Ramp v/c ratio	0.47		0.18		0.25		
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)							1,013
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)							0.594
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}							1.000
v_{12} (pcph)							1,013
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							1,013
v_{R12a} (pcph)							1,421
Merge Speed Index							0.28
Merge Area Speed							58.5
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							58.5
Merge v/c ratio							0.31
Merge Density							12.6
Merge LOS							B

Location	19	20	21	22	23	24	25



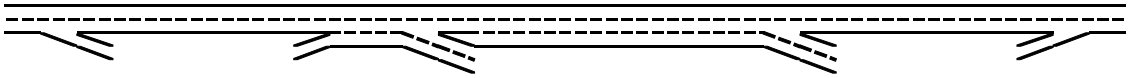
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)	3,218						
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)	0.634						
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}	1.000						
v_{12} (pcph)	3,218						
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)	3,218						
Diverge Speed Index	0.39						
Diverge Area Speed	56.1						
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed	56.1						
Diverge v/c ratio	0.73						
Diverge Density	30.4						
Diverge LOS	D						
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)			57				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			7.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.966				
f_P			1.00				
On to Off Flow (pcph)			74				
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)			513				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
On to ML Flow (pcph)			651				

Location	19	20	21	22	23	24	25



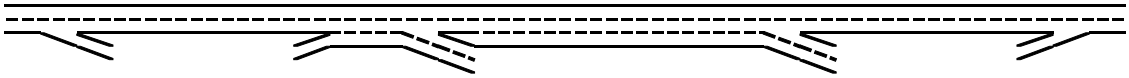
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)			663				
PHF			0.83				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
ML to Off Flow (pcph)			811				
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)			1,397				
PHF			0.825				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
GP to GP Flow (pcph)			1,719				

Location	19	20	21	22	23	24	25



Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Weave Segment Operations							
Weave Type			One-sided				
Weave Length			1,680				
Segment Lanes			3				
Weave Lanes			3				
Weave Flow (pcph)			1,462				
Non-Weave Flow			1,792				
Segment Flow			3,254				
Max Weave Length			5,672				
Length Check			OK				
Ideal Weave Capacity			2,045				
f_{HV}			0.985				
f_P			0.997				
Capacity Condition 1			6,023				
Capacity Condition 2			7,651				
Weave v/c ratio			0.53				
Interchange Density			0.666666667				
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate			0				
Weave LC Rate			564				
Non-Weave LC Rate 1			702				
Non-Weave LC Rate 2			2,089				
Non-Weave LC Rate 3			-1,643				
Segment LC Rate			1,266				
Weave Intensity Factor			0.181				
Weave Speed			57.3				
Non-Weave Speed			59.8				
Segment Speed			58.7				
Weave Density			18.5				
Weave LOS			B				
Summarize Segment Operations							
Segment v/c ratio	0.73	0.47	0.53	0.29	0.29	0.22	0.31
Segment Density	30.4	17.1	18.5	10.5	10.5	7.8	12.6
Segment LOS	D	B	B	A	A	A	B
Over Capacity							

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segment		
Type		Basic
Length (ft)		8,600
Accel Length		
Decel Length		
Mainline Volume		1,320
On Ramp Volume		
Off Ramp Volume		
Express Lane Volume		
EL On Ramp Volume		
EL Off Ramp Volume		
Calculate Flow Rate in General Purpose Lanes (		
GP Volume (vph)		1,320
PHF		0.95
GP Lanes		2
Terrain		Level
Grade %		0.0%
Grade Length (mi)		0.00
Truck & Bus %		4.5%
RV %		0.0%
E_T		1.5
E_R		1.2
f_{HV}		0.978
f_P		1.00
GP Flow (pcph)		1,421
GP Flow (pcphpl)		710
Calculate Speed in General Purpose Lanes		
Lane Width (ft)		
Shoulder Width		
TRD		
f_{LW}		
f_{LC}		
Calculated FFS		
Measured FFS		
FFS Curve		65
Calculate Operations in General Purpose Lanes		
v/c ratio		0.30
Speed (mph)		65.0
Density (pcphpl)		10.9
LOS		A
Calculate Operations for Entering GP Lanes		
GP_{IN} Vol (pcph)		
GP_{IN} Cap (pcph)		
GP_{IN} v/c ratio		
Calculate Operations for Exiting GP Lanes		
GP_{OUT} Vol (pcph)		
GP_{OUT} Cap (pcph)		
GP_{OUT} v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in Express Lanes (EL)		
Calculate Speed in Express Lanes		
Calculate Operations in Express Lanes		
Calculate On Ramp Flow Rate		
On Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On Flow (pcph)		
On Flow (pcphpl)		
Calculate On Ramp Roadway Operations		
On Ramp Type		
On Ramp Speed (mph)		
On Ramp Cap (pcph)		
On Ramp v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flow Rate		
Off Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
Off Flow (pcph)		
Off Flow (pcphpl)		
Calculate Off Ramp Roadway Operations		
Off Ramp Type		
Off Ramp Speed		
Off Ramp Cap (pcph)		
Off Ramp v/c ratio		
Determine Adjacent Ramp for Three-Lane Main		
Up Type		
Up Distance		
Up Flow (pcph)		
Down Type		
Down Distance		
Down Flow (pcph)		
Calculate Merge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FM} (Eqn 13-3)		
P_{FM} (Eqn 13-4)		
P_{FM} (Eqn 13-5)		
P_{FM}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
v_{R12a} (pcph)		
Merge Speed Index		
Merge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Merge v/c ratio		
Merge Density		
Merge LOS		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FD} (Eqn 13-9)		
P_{FD} (Eqn 13-10)		
P_{FD} (Eqn 13-11)		
P_{FD}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
Diverge Speed Index		
Diverge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Diverge v/c ratio		
Diverge Density		
Diverge LOS		
**Calculate On Ramp to Off Ramp Flow Rate for **		
On to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to Off Flow (pcph)		
Calculate On Ramp to Mainline Flow Rate for W		
On to ML Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to ML Flow (pcph)		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to Off Ramp Flow Rate for W		
ML to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
ML to Off Flow (pcph)		
Calculate General Purpose Lanes to General Pu		
GP to GP Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
GP to GP Flow (pcph)		

Location		26

Key

<> Express Lane (HOV)

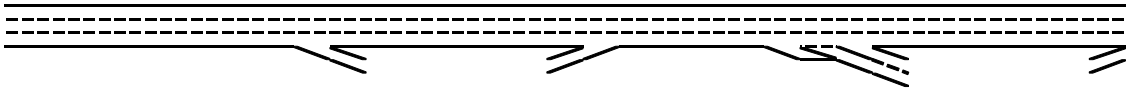
No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segment Operations		
Weave Type		
Weave Length		
Segment Lanes		
Weave Lanes		
Weave Flow (pcph)		
Non-Weave Flow		
Segment Flow		
Max Weave Length		
Length Check		
Ideal Weave Capacity		
f_{HV}		
f_P		
Capacity Condition 1		
Capacity Condition 2		
Weave v/c ratio		
Interchange Density		
Lane Changes On to ML		
Lane Changes ML to Off		
Lane Changes On to Off		
Min Lane Change Rate		
Weave LC Rate		
Non-Weave LC Rate 1		
Non-Weave LC Rate 2		
Non-Weave LC Rate 3		
Segment LC Rate		
Weave Intensity Factor		
Weave Speed		
Non-Weave Speed		
Segment Speed		
Weave Density		
Weave LOS		
Summarize Segment Operations		
Segment v/c ratio		0.30
Segment Density		10.9
Segment LOS		A
Over Capacity		

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP No Project Conditions
Timee Period: 2035 PM Peak Hour

Location	1	2	3	4	5	6	



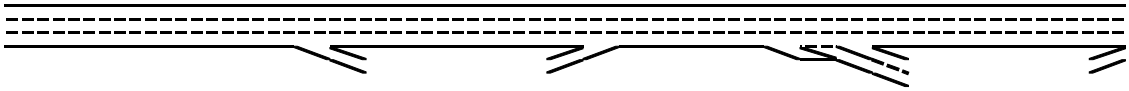
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Define Freeway Segment							
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	
Length (ft)	1,780	1,500	2,960	1,500	1,500	1,250	
Accel Length				270			
Decel Length		120			1,500		
Mainline Volume	6,150	6,150	4,930	4,930	5,950	4,670	
On Ramp Volume				1,020			
Off Ramp Volume		1,220			1,280		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (GP)							
GP Volume (vph)	6,150	6,150	4,930	5,950	5,950	4,670	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	3	3	3	3	3	3	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	6,551	6,551	5,252	6,338	6,338	4,975	
GP Flow (pcphpl)	2,184	2,184	1,751	2,113	2,113	1,658	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.93	0.93	0.74	0.90	0.90	0.71	
Speed (mph)	56.3	56.3	63.3	57.8	57.8	64.1	
Density (pcphpl)	38.8	38.8	27.7	36.6	36.6	25.9	
LOS	E	E	D	E	E	C	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		6,551		5,254	6,338		
GP_{IN} Cap (pcph)		7,050		7,050	7,050		
GP_{IN} v/c ratio		0.93		0.75	0.90		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		5,294		6,338	4,971		
GP_{OUT} Cap (pcph)		7,050		7,050	7,050		
GP_{OUT} v/c ratio		0.75		0.90	0.71		

Location	1	2	3	4	5	6	



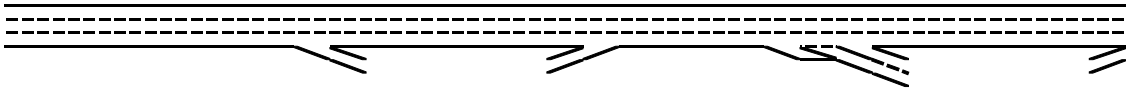
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)				1,020			
PHF				0.95			
Total Lanes				1			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				2.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.990			
f_P				1.00			
On Flow (pcph)				1,084			
On Flow (pcphpl)				1,084			
Calculate On Ramp Roadway Operations							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.52			

Location	1	2	3	4	5	6	



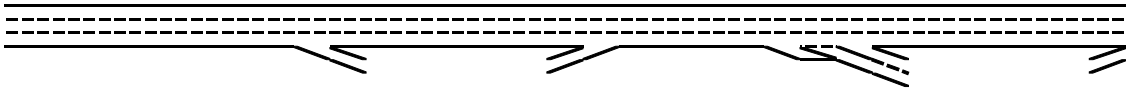
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Off Ramp Flow Rate							
Off Volume (vph)		1,220			1,280		
PHF		0.98			0.95		
Total Lanes		1			2		
Terrain		Level			Level		
Grade %		0.0%			0.0%		
Grade Length (mi)		0.00			0.00		
Truck & Bus %		2.0%			3.0%		
RV %		0.0%			0.0%		
E_T		1.5			1.5		
E_R		1.2			1.2		
f_{HV}		0.990			0.985		
f_P		1.00			1.00		
Off Flow (pcph)		1,257			1,368		
Off Flow (pcphpl)		1,257			684		
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right			Right		
Off Ramp Speed		45			45		
Off Ramp Cap (pcph)		2,100			4,200		
Off Ramp v/c ratio		0.60			0.33		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps							
Up Type		No		Off			
Up Distance				2,960			
Up Flow (pcph)				1,257			
Down Type		On		No			
Down Distance		2,960					
Down Flow (pcph)		1,084					
Calculate Merge Influence Area Operations							
Effective v_P (pcph)				5,254			
Up Ramp L_{EQ}				1,428			
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)				0.585			
P_{FM} (Eqn 13-4)				0.681			
P_{FM} (Eqn 13-5)							
P_{FM}				0.585			
v_{12} (pcph)				3,074			
v_3 (pcph)				2,180			
v_{34} (pcph)							
v_{12a} (pcph)				3,074			
v_{R12a} (pcph)				4,158			
Merge Speed Index				0.55			
Merge Area Speed				52.4			
Outer Lanes Volume				2,180			
Outer Lanes Speed				59.0			
Segment Speed				54.5			
Merge v/c ratio				0.90			
Merge Density				35.7			
Merge LOS				E			

Location	1	2	3	4	5	6	



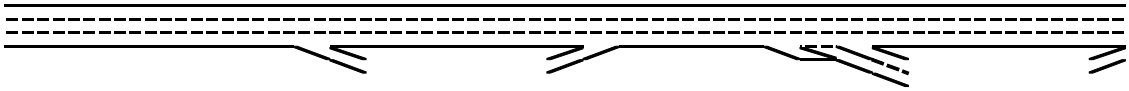
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)		6,551			6,338		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}		2,276					
P_{FD} (Eqn 13-9)		0.538			0.539		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		0.538			0.450		
v_{12} (pcph)		4,108			3,604		
v_3 (pcph)		2,444			2,734		
v_{34} (pcph)							
v_{12a} (pcph)		4,108			3,638		
Diverge Speed Index		0.41			0.42		
Diverge Area Speed		55.5			55.3		
Outer Lanes Volume		2,444			2,700		
Outer Lanes Speed		65.7			64.7		
Segment Speed		58.9			58.9		
Diverge v/c ratio		0.93			0.83		
Diverge Density		38.5			22.0		
Diverge LOS		E			C		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to Mainline Flow Rate for Weave Segments							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	1	2	3	4	5	6	



Key

<> Express Lane (HOV)

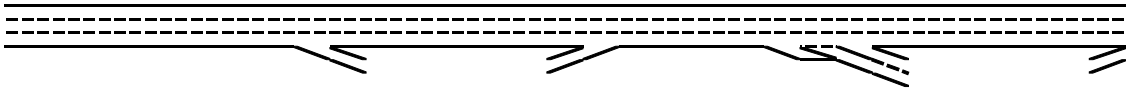
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Mainline to Off Ramp Flow Rate for Weave Segments							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP No Project Conditions
Timee Period: 2035 PM Peak Hour

Location	1	2	3	4	5	6	



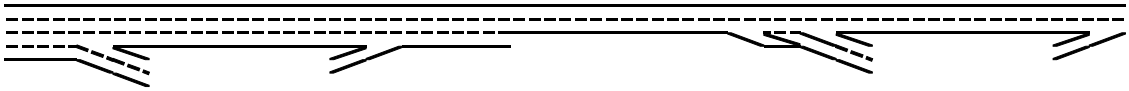
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Weave Segment Operations							
Weave Type							
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.93	0.93	0.74	0.90	0.83	0.71	
Segment Density	38.8	38.5	27.7	35.7	22.0	25.9	
Segment LOS	E	E	D	E	C	C	
Over Capacity							

Location	7	8	9	10	11	12	



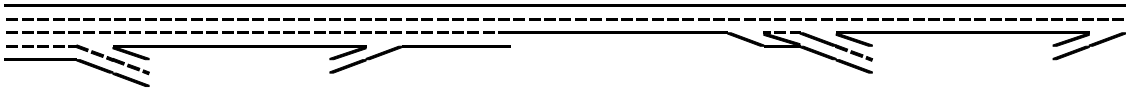
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Define Freeway Segment							
Type	Weave	Basic	Merge	Basic	Diverge	Basic	
Length (ft)	3,370	1,920	1,500	3,300	1,500	1,800	
Accel Length			375				
Decel Length					1,500		
Mainline Volume	4,670	3,850	3,850	4,170	4,170	3,160	
On Ramp Volume	900		320				
Off Ramp Volume	1,720				1,010		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	5,570	3,850	4,170	4,170	4,170	3,160	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	4	3	3	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	5,934	4,101	4,442	4,442	4,442	3,366	
GP Flow (pcphpl)	1,483	1,367	1,481	2,221	2,221	1,683	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.63	0.58	0.63	0.95	0.95	0.72	
Speed (mph)	64.9	65.0	64.9	55.4	55.4	63.9	
Density (pcphpl)	22.9	21.0	22.8	40.1	40.1	26.4	
LOS	C	C	C	E	E	D	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	4,972		4,102		4,442		
GP_{IN} Cap (pcph)	7,050		7,050		4,700		
GP_{IN} v/c ratio	0.71		0.58		0.95		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	4,096		4,442		3,368		
GP_{OUT} Cap (pcph)	7,050		7,050		4,700		
GP_{OUT} v/c ratio	0.58		0.63		0.72		

Location	7	8	9	10	11	12	



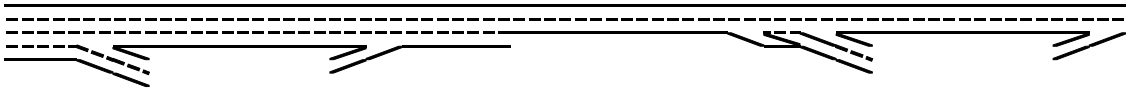
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	900		320				
PHF	0.95		0.95				
Total Lanes	1		1				
Terrain	Level		Level				
Grade %	0.0%		0.0%				
Grade Length (mi)	0.00		0.00				
Truck & Bus %	3.0%		2.0%				
RV %	0.0%		0.0%				
E_T	1.5		1.5				
E_R	1.2		1.2				
f_{HV}	0.985		0.990				
f_P	1.00		1.00				
On Flow (pcph)	962		340				
On Flow (pcphpl)	962		340				
Calculate On Ramp Roadway Operations							
On Ramp Type	Right		Right				
On Ramp Speed (mph)	25		25				
On Ramp Cap (pcph)	1,900		1,900				
On Ramp v/c ratio	0.51		0.18				

Location	7	8	9	10	11	12	



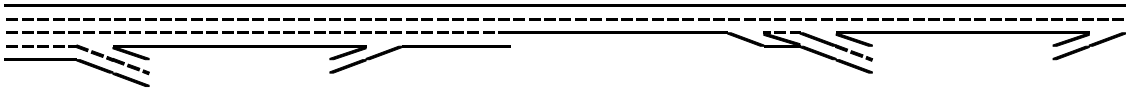
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Off Ramp Flow Rate							
Off Volume (vph)	1,720				1,010		
PHF	0.95				0.95		
Total Lanes	2				2		
Terrain	Level				Level		
Grade %	0.0%				0.0%		
Grade Length (mi)	0.00				0.00		
Truck & Bus %	3.0%				2.0%		
RV %	0.0%				0.0%		
E_T	1.5				1.5		
E_R	1.2				1.2		
f_{HV}	0.985				0.990		
f_P	1.00				1.00		
Off Flow (pcph)	1,838				1,074		
Off Flow (pcphpl)	919				537		
Calculate Off Ramp Roadway Operations							
Off Ramp Type	Right				Right		
Off Ramp Speed	45				45		
Off Ramp Cap (pcph)	4,200				4,200		
Off Ramp v/c ratio	0.44				0.26		
Determine Adjacent Ramp for Three-Lane Main							
Up Type			No				
Up Distance							
Up Flow (pcph)							
Down Type			No				
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)			4,102				
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)			0.588				
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}			0.588				
v_{12} (pcph)			2,412				
v_3 (pcph)			1,690				
v_{34} (pcph)							
v_{12a} (pcph)			2,412				
v_{R12a} (pcph)			2,752				
Merge Speed Index			0.36				
Merge Area Speed			56.6				
Outer Lanes Volume			1,690				
Outer Lanes Speed			60.7				
Segment Speed			58.1				
Merge v/c ratio			0.60				
Merge Density			24.4				
Merge LOS			C				

Location	7	8	9	10	11	12	



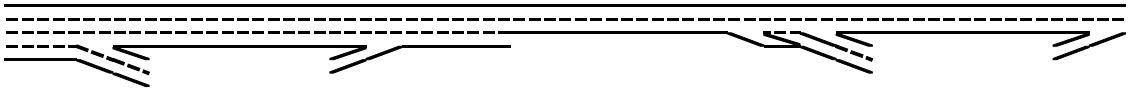
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)					4,442		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)					0.600		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}					1.000		
v_{12} (pcph)					4,442		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)					4,442		
Diverge Speed Index					0.39		
Diverge Area Speed					55.9		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed					55.9		
Diverge v/c ratio					1.01		
Diverge Density					29.0		
Diverge LOS					F		
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)	50						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to Off Flow (pcph)	53						
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)	850						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to ML Flow (pcph)	908						

Location	7	8	9	10	11	12	



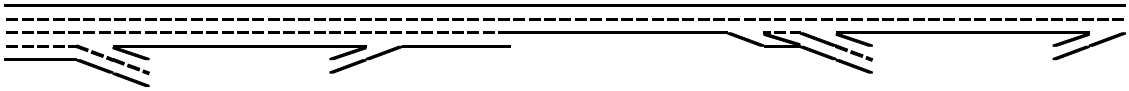
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)	1,670						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
ML to Off Flow (pcph)	1,784						
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)	3,000						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
GP to GP Flow (pcph)	3,205						

Location	7	8	9	10	11	12	



Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Weave Segment Operations							
Weave Type	One-sided						
Weave Length	2,370						
Segment Lanes	4						
Weave Lanes	2						
Weave Flow (pcph)	2,692						
Non-Weave Flow	3,259						
Segment Flow	5,951						
Max Weave Length	7,276						
Length Check	OK						
Ideal Weave Capacity	1,975						
f_{HV}	0.985						
f_P	0.998						
Capacity Condition 1	7,765						
Capacity Condition 2	5,215						
Weave v/c ratio	1.12						
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	1.12	0.58	0.60	0.95	1.01	0.72	
Segment Density	-	21.0	24.4	40.1	-	26.4	
Segment LOS	F	C	C	E	F	D	
Over Capacity	Weave				Diverge		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Define Freeway Segment							
Type	Merge	Weave	Basic	Merge	Merge	Basic	D
Length (ft)	1,000	2,770	1,420	1,150	1,500	1,020	
Accel Length	620			340	1,260		
Decel Length							
Mainline Volume	3,160	3,810	3,920	3,920	4,540	4,800	
On Ramp Volume	650	440		620	260		
Off Ramp Volume		330					
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	3,810	4,250	3,920	4,540	4,800	4,800	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	2	3	2	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	4,059	4,527	4,176	4,836	5,113	5,113	
GP Flow (pcphpl)	2,029	1,509	2,088	2,418	2,557	2,557	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.86	0.64	0.89	1.03	1.09	1.09	
Speed (mph)	59.4	64.8	58.3	-	-	-	
Density (pcphpl)	34.2	23.3	35.8	-	-	-	
LOS	D	C	E	F	F	F	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	3,368	4,060		4,177	4,837		
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700		
GP_{IN} v/c ratio	0.72	0.86		0.89	1.03		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	4,059	4,177		4,836	5,113		
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700		
GP_{OUT} v/c ratio	0.86	0.89		1.03	1.09		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	650	440		620	260		
PHF	0.95	0.95		0.95	0.95		
Total Lanes	1	1		1	1		
Terrain	Level	Level		Level	Level		
Grade %	0.0%	0.0%		0.0%	0.0%		
Grade Length (mi)	0.00	0.00		0.00	0.00		
Truck & Bus %	2.0%	2.0%		2.0%	2.0%		
RV %	0.0%	0.0%		0.0%	0.0%		
E_T	1.5	1.5		1.5	1.5		
E_R	1.2	1.2		1.2	1.2		
f_{HV}	0.990	0.990		0.990	0.990		
f_P	1.00	1.00		1.00	1.00		
On Flow (pcph)	691	468		659	276		
On Flow (pcphpl)	691	468		659	276		
Calculate On Ramp Roadway Operations							
On Ramp Type	Right	Right		Right	Right		
On Ramp Speed (mph)	25	45		25	45		
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100		
On Ramp v/c ratio	0.36	0.22		0.35	0.13		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Off Ramp Flow Rate							
Off Volume (vph)		330					
PHF		0.95					
Total Lanes		2					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		2.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.990					
f_P		1.00					
Off Flow (pcph)		351					
Off Flow (pcphpl)		175					
Calculate Off Ramp Roadway Operations							
Off Ramp Type							
Off Ramp Speed							
Off Ramp Cap (pcph)							
Off Ramp v/c ratio							
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)	3,368			4,177	4,837		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)	0.595			0.587	0.613		
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}	1.000			1.000	1.000		
v_{12} (pcph)	3,368			4,177	4,837		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)	3,368			4,177	4,837		
v_{R12a} (pcph)	4,059			4,836	5,113		
Merge Speed Index	0.52			-	-		
Merge Area Speed	53.1			-	-		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed	53.1						
Merge v/c ratio	0.88			1.05	1.11		
Merge Density	32.9			-	-		
Merge LOS	D			F	F		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)							
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)							
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}							
v_{12} (pcph)							
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							
Diverge Speed Index							
Diverge Area Speed							
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio							
Diverge Density							
Diverge LOS							
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)		110					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to Off Flow (pcph)		118					
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)		330					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to ML Flow (pcph)		353					

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)		220					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
ML to Off Flow (pcph)		235					
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)		3,590					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
GP to GP Flow (pcph)		3,836					

Location	13	14	15	16	17	18	

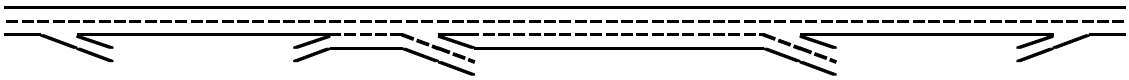
Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Weave Segment Operations							
Weave Type		One-sided					
Weave Length		1,770					
Segment Lanes		3					
Weave Lanes		2					
Weave Flow (pcph)		588					
Non-Weave Flow		3,953					
Segment Flow		4,541					
Max Weave Length		3,827					
Length Check		OK					
Ideal Weave Capacity		2,193					
f_{HV}		0.985					
f_P		0.999					
Capacity Condition 1		6,473					
Capacity Condition 2		18,250					
Weave v/c ratio		0.69					
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.88	0.69	0.89	1.05	1.11	1.09	
Segment Density	32.9		35.8	-	-	-	
Segment LOS	D		E	F	F	F	
Over Capacity				Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes In GP Lanes Out GP Lanes Merge	Segment GP Lanes	Segment GP Lanes In

Location	19	20	21	22	23	24	25



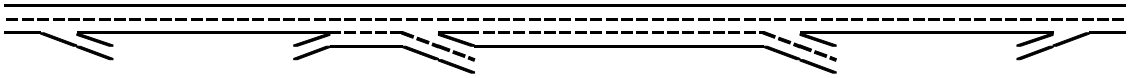
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Define Freeway Segment							
Type	iverge	Basic	Weave	Basic	Basic	Basic	Merge
Length (ft)	1,500	2,590	2,680	900	1,500	2,870	1,500
Accel Length							600
Decel Length	175						
Mainline Volume	4,800	4,420	4,420	4,620	4,620	2,500	2,500
On Ramp Volume			1,040				570
Off Ramp Volume	380		840		2,120		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	4,800	4,420	5,460	4,620	4,620	2,500	3,070
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	3	3	3	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	0.988
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,113	4,708	5,816	4,922	4,922	2,663	3,270
GP Flow (pcphpl)	2,557	2,354	1,939	1,641	1,641	1,332	1,635
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes							
v/c ratio	1.09	1.00	0.83	0.70	0.70	0.57	0.70
Speed (mph)	-	-	60.9	64.2	64.2	65.0	64.2
Density (pcphpl)	-	-	31.8	25.6	25.6	20.5	25.5
LOS	F	F	D	C	C	C	C
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	5,113		4,705				2,664
GP_{IN} Cap (pcph)	4,700		4,700				4,700
GP_{IN} v/c ratio	1.09		1.00				0.57
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	4,709		4,923		2,668		3,270
GP_{OUT} Cap (pcph)	4,700		4,700		4,700		4,700
GP_{OUT} v/c ratio	1.00		1.05		0.57		0.70

Location	19	20	21	22	23	24	25



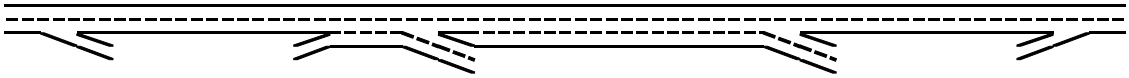
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)			1,040				570
PHF			0.95				0.95
Total Lanes			1				1
Terrain			Level				Level
Grade %			0.0%				0.0%
Grade Length (mi)			0.00				0.00
Truck & Bus %			3.0%				2.0%
RV %			0.0%				0.0%
E_T			1.5				1.5
E_R			1.2				1.2
f_{HV}			0.985				0.990
f_P			1.00				1.00
On Flow (pcph)			1,111				606
On Flow (pcphpl)			1,111				606
Calculate On Ramp Roadway Operations							
On Ramp Type			Right				Right
On Ramp Speed (mph)			45				45
On Ramp Cap (pcph)			2,100				2,100
On Ramp v/c ratio			0.53				0.29

Location	19	20	21	22	23	24	25



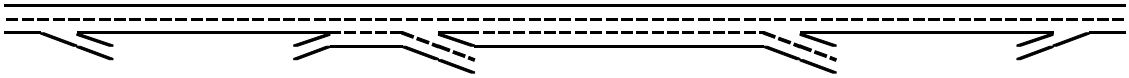
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Off Ramp Flow Rate							
Off Volume (vph)	380		840		2,120		
PHF	0.95		0.95		0.95		
Total Lanes	1		2		2		
Terrain	Level		Level		Level		
Grade %	0.0%		0.0%		0.0%		
Grade Length (mi)	0.00		0.00		0.00		
Truck & Bus %	2.0%		2.0%		2.0%		
RV %	0.0%		0.0%		0.0%		
E_T	1.5		1.5		1.5		
E_R	1.2		1.2		1.2		
f_{HV}	0.990		0.990		0.990		
f_P	1.00		1.00		1.00		
Off Flow (pcph)	404		893		2,254		
Off Flow (pcphpl)	404		447		1,127		
Calculate Off Ramp Roadway Operations							
Off Ramp Type	Right		Right		Right		
Off Ramp Speed	45		45		45		
Off Ramp Cap (pcph)	2,100		4,200		4,200		
Off Ramp v/c ratio	0.19		0.21		0.54		
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)							2,664
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)							0.594
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}							1.000
v_{12} (pcph)							2,664
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							2,664
v_{R12a} (pcph)							3,270
Merge Speed Index							0.37
Merge Area Speed							56.5
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							56.5
Merge v/c ratio							0.71
Merge Density							26.9
Merge LOS							C

Location	19	20	21	22	23	24	25



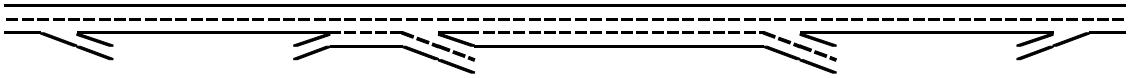
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)	5,113						
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)	0.614						
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}	1.000						
v_{12} (pcph)	5,113						
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)	5,113						
Diverge Speed Index	-						
Diverge Area Speed	-						
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio	1.16						
Diverge Density	-						
Diverge LOS	F						
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)			104				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			7.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.966				
f_P			1.00				
On to Off Flow (pcph)			135				
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)			936				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
On to ML Flow (pcph)			1,188				

Location	19	20	21	22	23	24	25



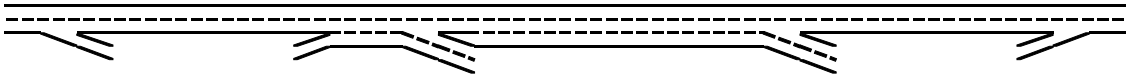
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)			736				
PHF			0.83				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
ML to Off Flow (pcph)			900				
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)			3,684				
PHF			0.825				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
GP to GP Flow (pcph)			4,532				

Location	19	20	21	22	23	24	25



Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Weave Segment Operations							
Weave Type			One-sided				
Weave Length			1,680				
Segment Lanes			3				
Weave Lanes			3				
Weave Flow (pcph)			2,088				
Non-Weave Flow			4,667				
Segment Flow			6,755				
Max Weave Length			4,115				
Length Check			OK				
Ideal Weave Capacity			2,164				
f_{HV}			0.985				
f_P			0.997				
Capacity Condition 1			6,376				
Capacity Condition 2			11,124				
Weave v/c ratio			1.04				
Interchange Density			0.666666667				
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate			0				
Weave LC Rate			564				
Non-Weave LC Rate 1			1,294				
Non-Weave LC Rate 2			2,730				
Non-Weave LC Rate 3			-423				
Segment LC Rate			1,858				
Weave Intensity Factor			0.245				
Weave Speed			55.2				
Non-Weave Speed			54.2				
Segment Speed			54.5				
Weave Density			-				
Weave LOS			F				
Summarize Segment Operations							
Segment v/c ratio	1.16	1.00	1.04	0.70	0.70	0.57	0.71
Segment Density	-	-	-	25.6	25.6	20.5	26.9
Segment LOS	F	F	F	C	C	C	C
Over Capacity	GP Lanes Out GP Lanes Diverge	Segment GP Lanes	In GP Lanes Out GP Lanes Weave				

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segment		
Type		Basic
Length (ft)		8,600
Accel Length		
Decel Length		
Mainline Volume		3,070
On Ramp Volume		
Off Ramp Volume		
Express Lane Volume		
EL On Ramp Volume		
EL Off Ramp Volume		
Calculate Flow Rate in General Purpose Lanes		
GP Volume (vph)		3,070
PHF		0.95
GP Lanes		2
Terrain		Level
Grade %		0.0%
Grade Length (mi)		0.00
Truck & Bus %		2.4%
RV %		0.0%
E_T		1.5
E_R		1.2
f_{HV}		0.988
f_P		1.00
GP Flow (pcph)		3,270
GP Flow (pcphpl)		1,635
Calculate Speed in General Purpose Lanes		
Lane Width (ft)		
Shoulder Width		
TRD		
f_{LW}		
f_{LC}		
Calculated FFS		
Measured FFS		
FFS Curve		65
Calculate Operations in General Purpose Lanes		
v/c ratio		0.70
Speed (mph)		64.2
Density (pcphpl)		25.5
LOS		C
Calculate Operations for Entering GP Lanes		
GP_{IN} Vol (pcph)		
GP_{IN} Cap (pcph)		
GP_{IN} v/c ratio		
Calculate Operations for Exiting GP Lanes		
GP_{OUT} Vol (pcph)		
GP_{OUT} Cap (pcph)		
GP_{OUT} v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in Express Lanes (EL)		
Calculate Speed in Express Lanes		
Calculate Operations in Express Lanes		
Calculate On Ramp Flow Rate		
On Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On Flow (pcph)		
On Flow (pcphpl)		
Calculate On Ramp Roadway Operations		
On Ramp Type		
On Ramp Speed (mph)		
On Ramp Cap (pcph)		
On Ramp v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flow Rate		
Off Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
Off Flow (pcph)		
Off Flow (pcphpl)		
Calculate Off Ramp Roadway Operations		
Off Ramp Type		
Off Ramp Speed		
Off Ramp Cap (pcph)		
Off Ramp v/c ratio		
Determine Adjacent Ramp for Three-Lane Main		
Up Type		
Up Distance		
Up Flow (pcph)		
Down Type		
Down Distance		
Down Flow (pcph)		
Calculate Merge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FM} (Eqn 13-3)		
P_{FM} (Eqn 13-4)		
P_{FM} (Eqn 13-5)		
P_{FM}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
v_{R12a} (pcph)		
Merge Speed Index		
Merge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Merge v/c ratio		
Merge Density		
Merge LOS		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FD} (Eqn 13-9)		
P_{FD} (Eqn 13-10)		
P_{FD} (Eqn 13-11)		
P_{FD}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
Diverge Speed Index		
Diverge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Diverge v/c ratio		
Diverge Density		
Diverge LOS		
**Calculate On Ramp to Off Ramp Flow Rate for **		
On to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to Off Flow (pcph)		
Calculate On Ramp to Mainline Flow Rate for W		
On to ML Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to ML Flow (pcph)		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to Off Ramp Flow Rate for W		
ML to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
ML to Off Flow (pcph)		
Calculate General Purpose Lanes to General Pu		
GP to GP Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
GP to GP Flow (pcph)		

Location		26

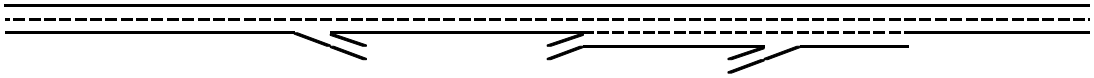
Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segment Operations		
Weave Type		
Weave Length		
Segment Lanes		
Weave Lanes		
Weave Flow (pcph)		
Non-Weave Flow		
Segment Flow		
Max Weave Length		
Length Check		
Ideal Weave Capacity		
f_{HV}		
f_P		
Capacity Condition 1		
Capacity Condition 2		
Weave v/c ratio		
Interchange Density		
Lane Changes On to ML		
Lane Changes ML to Off		
Lane Changes On to Off		
Min Lane Change Rate		
Weave LC Rate		
Non-Weave LC Rate 1		
Non-Weave LC Rate 2		
Non-Weave LC Rate 3		
Segment LC Rate		
Weave Intensity Factor		
Weave Speed		
Non-Weave Speed		
Segment Speed		
Weave Density		
Weave LOS		
Summarize Segment Operations		
Segment v/c ratio		0.70
Segment Density		25.5
Segment LOS		C
Over Capacity		

Location	1	2	3	4	5	6



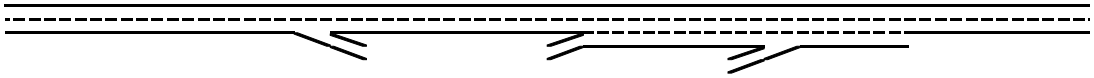
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Define Freeway Segment						
Type	Basic	Diverge	Basic	Basic	Merge	Basic
Length (ft)	8,330	1,500	1,800	1,000	1,500	870
Accel Length					720	
Decel Length		150				
Mainline Volume	2,800	2,800	2,340	2,340	3,670	4,670
On Ramp Volume				1,330	1,000	
Off Ramp Volume		460				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	2,800	2,800	2,340	3,670	4,670	4,670
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	3	3	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,977	2,977	2,488	3,902	4,965	4,965
GP Flow (pcphpl)	1,488	1,488	1,244	1,301	1,655	2,482
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.63	0.63	0.53	0.55	0.70	1.06
Speed (mph)	64.9	64.9	65.0	65.0	64.1	-
Density (pcphpl)	22.9	22.9	19.1	20.0	25.8	-
LOS	C	C	C	C	C	F
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)		2,977		2,488	3,902	
GP_{IN} Cap (pcph)		4,700		4,700	7,050	
GP_{IN} v/c ratio		0.63		0.53	0.55	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)		2,485			4,965	
GP_{OUT} Cap (pcph)		4,700			7,050	
GP_{OUT} v/c ratio		0.53			0.70	

Location	1	2	3	4	5	6



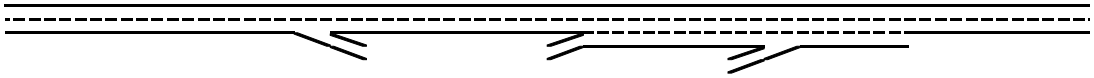
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)				1,330	1,000	
PHF				0.95	0.95	
Total Lanes				1	1	
Terrain				Level	Level	
Grade %				0.0%	0.0%	
Grade Length (mi)				0.00	0.00	
Truck & Bus %				2.0%	2.0%	
RV %				0.0%	0.0%	
E_T				1.5	1.5	
E_R				1.2	1.2	
f_{HV}				0.990	0.990	
f_P				1.00	1.00	
On Flow (pcph)				1,414	1,063	
On Flow (pcphpl)				1,414	1,063	
Calculate On Ramp Roadway Operations						
On Ramp Type				Right	Right	
On Ramp Speed (mph)				25	45	
On Ramp Cap (pcph)				1,900	2,100	
On Ramp v/c ratio				0.74	0.51	

Location	1	2	3	4	5	6



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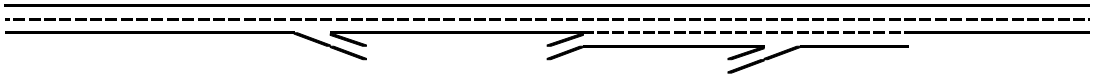
<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Off Ramp Flow Rate						
Off Volume (vph)		460				
PHF		0.95				
Total Lanes		1				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
Off Flow (pcph)		491				
Off Flow (pcphpl)		491				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		2,100				
Off Ramp v/c ratio		0.23				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type					On	
Up Distance					1,000	
Up Flow (pcph)					1,414	
Down Type					No	
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)					3,902	
Up Ramp L_{EQ}					1,334	
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)					0.598	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}					0.598	
v_{12} (pcph)					2,332	
v_3 (pcph)					1,570	
v_{34} (pcph)						
v_{12a} (pcph)					2,332	
v_{R12a} (pcph)					3,395	
Merge Speed Index					0.37	
Merge Area Speed					56.4	
Outer Lanes Volume					1,570	
Outer Lanes Speed					61.1	
Segment Speed					57.8	
Merge v/c ratio					0.74	
Merge Density					27.0	
Merge LOS					C	

Location	1	2	3	4	5	6



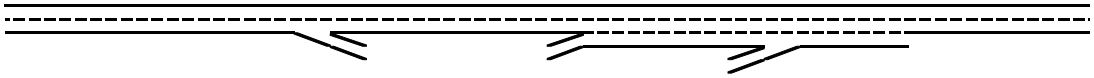
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)		2,977				
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)		0.663				
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}		1.000				
v_{12} (pcph)		2,977				
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)		2,977				
Diverge Speed Index		0.34				
Diverge Area Speed		57.1				
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed		57.1				
Diverge v/c ratio		0.68				
Diverge Density		28.5				
Diverge LOS		D				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	1	2	3	4	5	6



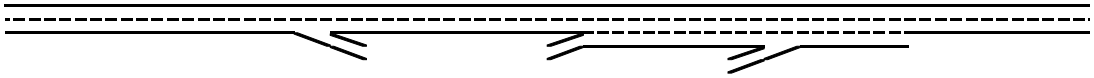
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Location	1	2	3	4	5	6



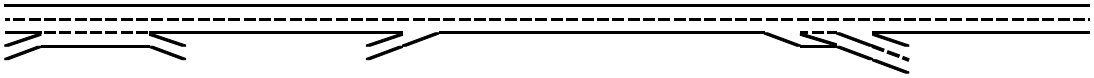
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.63	0.68	0.53	0.55	0.74	1.06
Segment Density	22.9	28.5	19.1	20.0	27.0	-
Segment LOS	C	D	C	C	C	F
Over Capacity						Segment GP Lanes

Location	7	8	9	10	11	12



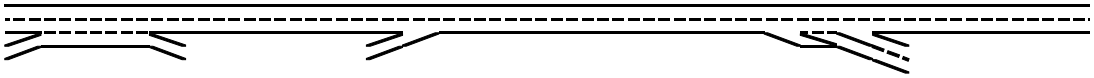
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Basic	Diverge	Basic
Length (ft)	3,050	1,120	1,500	2,210	1,500	1,830
Accel Length			450			
Decel Length					1,500	
Mainline Volume	4,670	4,150	4,150	4,530	4,530	3,820
On Ramp Volume	820		380			
Off Ramp Volume	1,340				710	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	5,490	4,150	4,530	4,530	4,530	3,820
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,837	4,412	4,816	4,816	4,816	4,061
GP Flow (pcphpl)	1,946	2,206	2,408	2,408	2,408	2,031
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.83	0.94	1.02	1.02	1.02	0.86
Speed (mph)	60.8	55.8	-	-	-	59.4
Density (pcphpl)	32.0	39.5	-	-	-	34.2
LOS	D	E	F	F	F	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,965		4,412		4,816	
GP_{IN} Cap (pcph)	4,700		4,700		4,700	
GP_{IN} v/c ratio	1.06		0.94		1.02	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	4,398		4,816		4,061	
GP_{OUT} Cap (pcph)	4,700		4,700		4,700	
GP_{OUT} v/c ratio	0.94		1.02		0.86	

Location	7	8	9	10	11	12



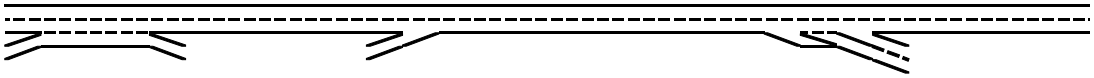
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5			
E_R	1.2	1.2	1.2			
f_{HV}	0.990	0.990	0.990			
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	820		380			
PHF	0.95		0.95			
Total Lanes	1		1			
Terrain	Level		Level			
Grade %	0.0%		0.0%			
Grade Length (mi)	0.00		0.00			
Truck & Bus %	2.0%		2.0%			
RV %	0.0%		0.0%			
E_T	1.5		1.5			
E_R	1.2		1.2			
f_{HV}	0.990		0.990			
f_P	1.00		1.00			
On Flow (pcph)	872		404			
On Flow (pcphpl)	872		404			
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right			
On Ramp Speed (mph)	45		25			
On Ramp Cap (pcph)	2,100		1,900			
On Ramp v/c ratio	0.42		0.21			

Location	7	8	9	10	11	12



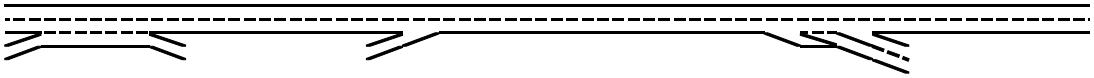
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	1,340				710	
PHF	0.95				0.95	
Total Lanes	1				2	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	4.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.980				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	1,439				755	
Off Flow (pcphpl)	1,439				377	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				4,200	
Off Ramp v/c ratio	0.69				0.18	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			4,412			
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.590			
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000			
v_{12} (pcph)			4,412			
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			4,412			
v_{R12a} (pcph)			4,816			
Merge Speed Index			-			
Merge Area Speed			-			
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Merge v/c ratio			1.05			
Merge Density			-			
Merge LOS			F			

Location	7	8	9	10	11	12



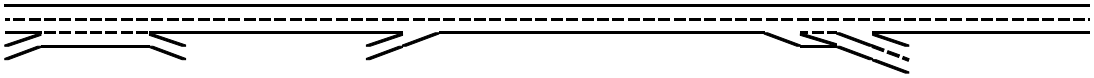
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					4,816	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.605	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					4,816	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					4,816	
Diverge Speed Index					-	
Diverge Area Speed					-	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio					1.09	
Diverge Density					-	
Diverge LOS					F	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	82					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	88					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	738					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	788					

Location	7	8	9	10	11	12



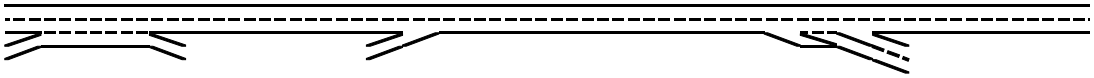
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	1,258					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
ML to Off Flow (pcph)	1,495					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	3,412					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
GP to GP Flow (pcph)	4,054					

Location	7	8	9	10	11	12



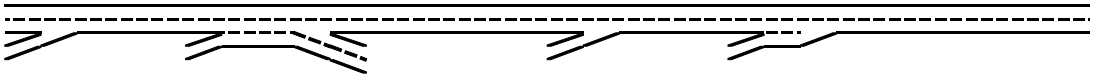
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,050					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	2,283					
Non-Weave Flow	4,142					
Segment Flow	6,425					
Max Weave Length	6,185					
Length Check	OK					
Ideal Weave Capacity	2,034					
f_{HV}	0.989					
f_P	0.998					
Capacity Condition 1	6,025					
Capacity Condition 2	6,670					
Weave v/c ratio	1.05					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	1.05	0.94	1.05	1.02	1.09	0.86
Segment Density	-	39.5	-	-	-	34.2
Segment LOS	F	E	F	F	F	D
Over Capacity	In GP Lanes Weave		Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes	Segment GP Lanes In GP Lanes Diverge	

Location	13	14	15	16	17	18



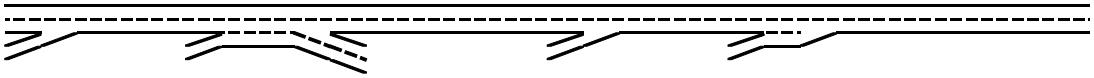
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Define Freeway Segment						
Type	Merge	Weave	Basic	Merge	Merge	Basic
Length (ft)	690	3,344	1,280	1,310	1,500	770
Accel Length	400			500	1,450	
Decel Length						
Mainline Volume	3,820	4,300	3,560	3,560	4,100	4,460
On Ramp Volume	480	20		540	360	
Off Ramp Volume		760				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,300	4,320	3,560	4,100	4,460	4,460
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	3	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,572	4,593	3,785	4,359	4,742	4,742
GP Flow (pcphpl)	2,286	1,531	1,892	2,179	2,371	2,371
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.97	0.65	0.81	0.93	1.01	1.01
Speed (mph)	53.9	64.8	61.6	56.4	-	-
Density (pcphpl)	42.4	23.6	30.7	38.7	-	-
LOS	E	C	D	E	F	F
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,061	4,571		3,785	4,359	
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{IN} v/c ratio	0.86	0.97		0.81	0.93	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	4,572	3,785		4,359	4,742	
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{OUT} v/c ratio	0.97	0.81		0.93	1.01	

Location	13	14	15	16	17	18



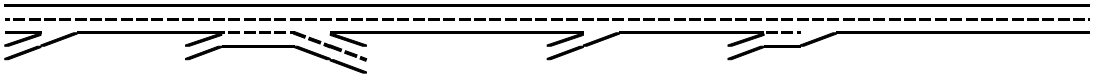
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T		1.5	1.5	1.5	1.5	
E_R		1.2	1.2	1.2	1.2	
f_{HV}		0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	480	20		540	360	
PHF	0.95	0.95		0.95	0.95	
Total Lanes	1	1		1	1	
Terrain	Level	Level		Level	Level	
Grade %	0.0%	0.0%		0.0%	0.0%	
Grade Length (mi)	0.00	0.00		0.00	0.00	
Truck & Bus %	2.0%	3.0%		2.0%	2.0%	
RV %	0.0%	0.0%		0.0%	0.0%	
E_T	1.5	1.5		1.5	1.5	
E_R	1.2	1.2		1.2	1.2	
f_{HV}	0.990	0.985		0.990	0.990	
f_P	1.00	1.00		1.00	1.00	
On Flow (pcph)	510	21		574	383	
On Flow (pcphpl)	510	21		574	383	
Calculate On Ramp Roadway Operations						
On Ramp Type	Right	Right		Right	Right	
On Ramp Speed (mph)	25	45		25	45	
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100	
On Ramp v/c ratio	0.27	0.01		0.30	0.18	

Location	13	14	15	16	17	18



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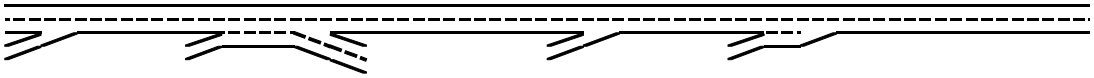
<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)		760				
PHF		0.95				
Total Lanes		2				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		808				
Off Flow (pcphpl)		404				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		4,200				
Off Ramp v/c ratio		0.19				
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)	4,061			3,785	4,359	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)	0.589			0.592	0.618	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}	1.000			1.000	1.000	
v_{12} (pcph)	4,061			3,785	4,359	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)	4,061			3,785	4,359	
v_{R12a} (pcph)	4,572			4,359	4,742	
Merge Speed Index	0.68			0.60	-	
Merge Area Speed	49.4			51.2	-	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed	49.4			51.2		
Merge v/c ratio	0.99			0.95	1.03	
Merge Density	38.4			36.1	-	
Merge LOS	E			E	F	

Location	13	14	15	16	17	18



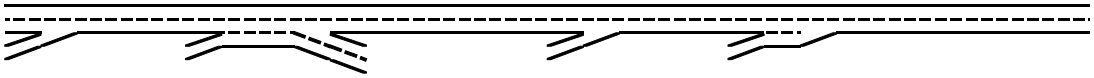
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)						
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)						
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}						
v_{12} (pcph)						
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)						
Diverge Speed Index						
Diverge Area Speed						
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio						
Diverge Density						
Diverge LOS						
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)		50				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to Off Flow (pcph)		53				
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)		-30				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to ML Flow (pcph)		-32				

Location	13	14	15	16	17	18



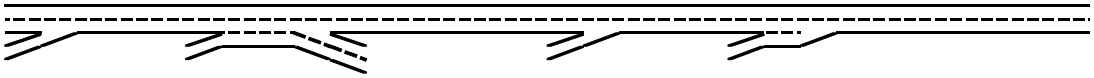
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)		710				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
ML to Off Flow (pcph)		770				
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)		3,590				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
GP to GP Flow (pcph)		3,892				

Location	13	14	15	16	17	18



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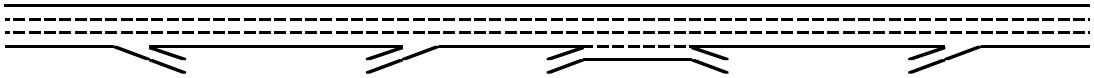
<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Weave Segment Operations						
Weave Type		One-sided				
Weave Length		2,344				
Segment Lanes		3				
Weave Lanes		2				
Weave Flow (pcph)		738				
Non-Weave Flow		3,946				
Segment Flow		4,683				
Max Weave Length		4,106				
Length Check		OK				
Ideal Weave Capacity		2,215				
f_{HV}		0.971				
f_P		1.000				
Capacity Condition 1		6,453				
Capacity Condition 2		14,795				
Weave v/c ratio		0.70				
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.99	0.70	0.81	0.95	1.03	1.01
Segment Density	38.4		30.7	36.1	-	-
Segment LOS	E		D	E	F	F
Over Capacity					Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes

Location	19	20	21	22	23	24



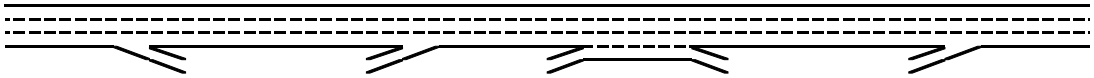
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Define Freeway Segment						
Type	Diverge	Basic	Merge	Weave	Basic	Merge
Length (ft)	1,500	1,680	1,000	3,140	1,610	1,180
Accel Length			380			550
Decel Length	200					
Mainline Volume	4,460	3,680	3,680	4,080	4,300	4,300
On Ramp Volume			400	1,330		540
Off Ramp Volume	780			1,110		
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,460	3,680	4,080	5,410	4,300	4,840
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	4	3	3
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	4.2%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.979	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,742	3,912	4,338	5,814	4,572	5,146
GP Flow (pcphpl)	1,581	1,304	1,446	1,454	1,524	1,715
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.67	0.55	0.62	0.62	0.65	0.73
Speed (mph)	64.5	65.0	65.0	65.0	64.8	63.6
Density (pcphpl)	24.5	20.1	22.3	22.4	23.5	27.0
LOS	C	C	C	C	C	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,742		3,912	4,382		4,572
GP_{IN} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{IN} v/c ratio	0.67		0.55	0.62		0.65
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,903		4,338	4,634		5,146
GP_{OUT} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{OUT} v/c ratio	0.55		0.62	0.66		0.73

Location	19	20	21	22	23	24



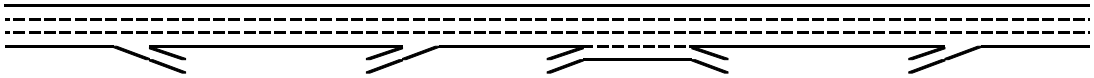
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)			400	1,330		540
PHF			0.95	0.95		0.95
Total Lanes			1	1		1
Terrain			Level	Level		Level
Grade %			0.0%	0.0%		0.0%
Grade Length (mi)			0.00	0.00		0.00
Truck & Bus %			2.0%	4.6%		2.0%
RV %			0.0%	0.0%		0.0%
E_T			1.5	1.5		1.5
E_R			1.2	1.2		1.2
f_{HV}			0.990	0.978		0.990
f_P			1.00	1.00		1.00
On Flow (pcph)			425	1,432		574
On Flow (pcphpl)			425	1,432		574
Calculate On Ramp Roadway Operations						
On Ramp Type			Right	Right		Right
On Ramp Speed (mph)			25	45		25
On Ramp Cap (pcph)			1,900	2,100		1,900
On Ramp v/c ratio			0.22	0.68		0.30

Location	19	20	21	22	23	24



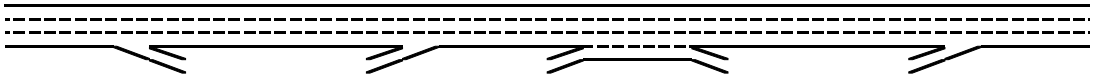
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	780			1,110		
PHF	0.95			0.95		
Total Lanes	1			1		
Terrain	Level			Level		
Grade %	0.0%			0.0%		
Grade Length (mi)	0.00			0.00		
Truck & Bus %	4.2%			2.0%		
RV %	0.0%			0.0%		
E_T	1.5			1.5		
E_R	1.2			1.2		
f_{HV}	0.979			0.990		
f_P	1.00			1.00		
Off Flow (pcph)	838			1,180		
Off Flow (pcphpl)	838			1,180		
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right			Right		
Off Ramp Speed	45			45		
Off Ramp Cap (pcph)	2,100			2,100		
Off Ramp v/c ratio	0.40			0.56		
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type	No		Off			No
Up Distance			1,680			
Up Flow (pcph)			838			
Down Type	On		No			On
Down Distance	1,500					1,180
Down Flow (pcph)	425					851
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,912			4,572
Up Ramp L_{EQ}			2			
Down Ramp L_{EQ}						5,049
P_{FM} (Eqn 13-3)			0.588			0.593
P_{FM} (Eqn 13-4)			0.694			
P_{FM} (Eqn 13-5)						
P_{FM}			0.588			0.593
v_{12} (pcph)			2,301			2,710
v_3 (pcph)			1,611			1,861
v_{34} (pcph)						
v_{12a} (pcph)			2,301			2,710
v_{R12a} (pcph)			2,726			3,285
Merge Speed Index			0.36			0.40
Merge Area Speed			56.7			55.9
Outer Lanes Volume			1,611			1,861
Outer Lanes Speed			61.0			60.1
Segment Speed			58.2			57.3
Merge v/c ratio			0.59			0.71
Merge Density			24.2			27.4
Merge LOS			C			C

Location	19	20	21	22	23	24



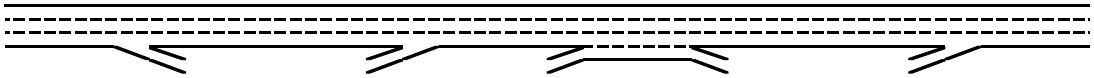
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)	4,742					
Up Ramp L_{EQ}						
Down Ramp L_{EQ}	617					
P_{FD} (Eqn 13-9)	0.603					
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}	0.603					
v_{12} (pcph)	3,192					
v_3 (pcph)	1,550					
v_{34} (pcph)						
v_{12a} (pcph)	3,192					
Diverge Speed Index	0.37					
Diverge Area Speed	56.4					
Outer Lanes Volume	1,550					
Outer Lanes Speed	69.2					
Segment Speed	60.0					
Diverge v/c ratio	0.73					
Diverge Density	29.9					
Diverge LOS	D					
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)				133		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to Off Flow (pcph)				142		
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)				1,197		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to ML Flow (pcph)				1,279		

Location	19	20	21	22	23	24



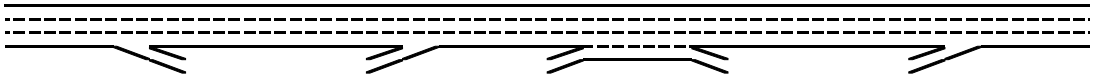
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)				977		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
ML to Off Flow (pcph)				1,059		
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)				3,103		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
GP to GP Flow (pcph)				3,364		

Location	19	20	21	22	23	24



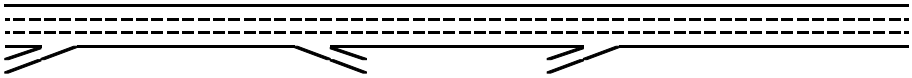
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Weave Segment Operations						
Weave Type				One-sided		
Weave Length				2,140		
Segment Lanes				4		
Weave Lanes				2		
Weave Flow (pcph)				2,338		
Non-Weave Flow				3,506		
Segment Flow				5,845		
Max Weave Length				6,682		
Length Check				OK		
Ideal Weave Capacity				2,003		
f_{HV}				0.974		
f_P				0.997		
Capacity Condition 1				7,780		
Capacity Condition 2				5,826		
Weave v/c ratio				0.97		
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.73	0.55	0.59	0.97	0.65	0.71
Segment Density	29.9	20.1	24.2		23.5	27.4
Segment LOS	D	C	C		C	C
Over Capacity						

Location	25	26	27	28	29



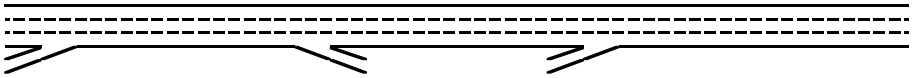
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segment					
Type	Merge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	1,500	2,830	1,500	750
Accel Length	580			590	
Decel Length		140			
Mainline Volume	4,840	5,640	4,640	4,640	5,380
On Ramp Volume	800			740	
Off Ramp Volume		1,000			
Express Lane Volume					
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP					
GP Volume (vph)	5,640	5,640	4,640	5,380	5,380
PHF	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,996	5,996	4,933	5,720	5,720
GP Flow (pcphpl)	1,999	1,999	1,644	1,907	1,907
Calculate Speed in General Purpose Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calculated FFS					
Measured FFS					
FFS Curve	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.85	0.85	0.70	0.81	0.81
Speed (mph)	59.9	59.9	64.2	61.4	61.4
Density (pcphpl)	33.4	33.4	25.6	31.1	31.1
LOS	D	D	C	D	D
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)	5,146	5,996		4,933	
GP_{IN} Cap (pcph)	7,050	7,050		7,050	
GP_{IN} v/c ratio	0.73	0.85		0.70	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	5,996	4,933		5,720	
GP_{OUT} Cap (pcph)	7,050	7,050		7,050	
GP_{OUT} v/c ratio	0.85	0.70		0.81	

Location	25	26	27	28	29



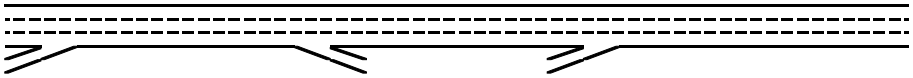
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)					
PHF					
Express Lanes	0	0	0	0	0
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P					
EL Flow (pcph)					
EL Flow (pcphpl)					
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS					
FFS					
	io				
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio					
Calculate On Ramp Flow Rate					
On Volume (vph)	800			740	
PHF	0.95			0.95	
Total Lanes	1			1	
Terrain	Level			Level	
Grade %	0.0%			0.0%	
Grade Length (mi)	0.00			0.00	
Truck & Bus %	2.0%			2.0%	
RV %	0.0%			0.0%	
E_T	1.5			1.5	
E_R	1.2			1.2	
f_{HV}	0.990			0.990	
f_P	1.00			1.00	
On Flow (pcph)	851			787	
On Flow (pcphpl)	851			787	
Calculate On Ramp Roadway Operations					
On Ramp Type	Right			Right	
On Ramp Speed (mph)	45			45	
On Ramp Cap (pcph)	2,100			2,100	
On Ramp v/c ratio	0.41			0.37	

Location	25	26	27	28	29



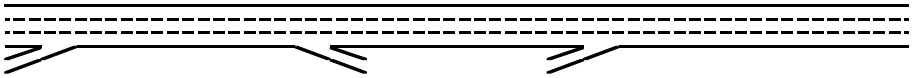
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flow Rate					
Off Volume (vph)		1,000			
PHF		0.95			
Total Lanes		1			
Terrain		Level			
Grade %		0.0%			
Grade Length (mi)		0.00			
Truck & Bus %		2.0%			
RV %		0.0%			
E_T		1.5			
E_R		1.2			
f_{HV}		0.990			
f_P		1.00			
Off Flow (pcph)		1,063			
Off Flow (pcphpl)		1,063			
Calculate Off Ramp Roadway Operations					
Off Ramp Type		Right			
Off Ramp Speed		45			
Off Ramp Cap (pcph)		2,100			
Off Ramp v/c ratio		0.51			
Determine Adjacent Ramp for Three-Lane Mainline					
Up Type	On	On		Off	
Up Distance	1,180	3,000		2,830	
Up Flow (pcph)	574	851		1,063	
Down Type	Off	On		No	
Down Distance	3,000	2,830			
Down Flow (pcph)	1,063	787			
Calculate Merge Influence Area Operations					
Effective v_P (pcph)	5,146			4,933	
Up Ramp L_{EQ}	1,492			1,437	
Down Ramp L_{EQ}	6,193				
P_{FM} (Eqn 13-3)	0.594			0.594	
P_{FM} (Eqn 13-4)				0.682	
P_{FM} (Eqn 13-5)	0.642				
P_{FM}	0.642			0.594	
v_{12} (pcph)	3,303			2,930	
v_3 (pcph)	1,843			2,003	
v_{34} (pcph)					
v_{12a} (pcph)	3,303			2,930	
v_{R12a} (pcph)	4,153			3,717	
Merge Speed Index	0.52			0.43	
Merge Area Speed	53.1			55.1	
Outer Lanes Volume	1,843			2,003	
Outer Lanes Speed	60.2			59.6	
Segment Speed	55.1			56.6	
Merge v/c ratio	0.90			0.81	
Merge Density	33.8			30.4	
Merge LOS	D			D	

Location	25	26	27	28	29



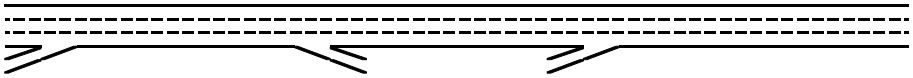
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)		5,996			
Up Ramp L_{EQ}		6,639			
Down Ramp L_{EQ}		1,390			
P_{FD} (Eqn 13-9)		0.561			
P_{FD} (Eqn 13-10)		0.561			
P_{FD} (Eqn 13-11)					
P_{FD}		0.561			
v_{12} (pcph)		3,832			
v_3 (pcph)		2,165			
v_{34} (pcph)					
v_{12a} (pcph)		3,832			
Diverge Speed Index		0.39			
Diverge Area Speed		55.9			
Outer Lanes Volume		2,165			
Outer Lanes Speed		66.8			
Segment Speed		59.4			
Diverge v/c ratio		0.87			
Diverge Density		35.9			
Diverge LOS		E			
Calculate On Ramp to Off Ramp Flow Rate for Wea					
On to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to Off Flow (pcph)					
Calculate On Ramp to Mainline Flow Rate for Weav					
On to ML Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to ML Flow (pcph)					

Location	25	26	27	28	29



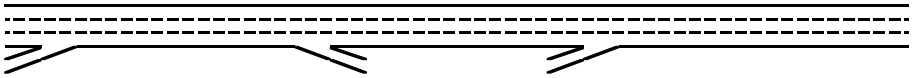
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to Off Ramp Flow Rate for Weav					
ML to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
ML to Off Flow (pcph)					
Calculate General Purpose Lanes to General Purpo					
GP to GP Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
GP to GP Flow (pcph)					

Location	25	26	27	28	29



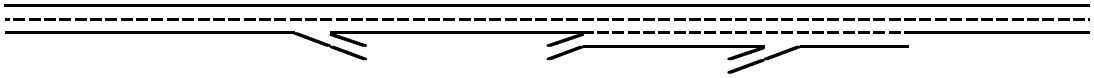
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segment Operations					
Weave Type					
Weave Length					
Segment Lanes					
Weave Lanes					
Weave Flow (pcph)					
Non-Weave Flow					
Segment Flow					
Max Weave Length					
Length Check					
Ideal Weave Capacity					
f_{HV}					
f_P					
Capacity Condition 1					
Capacity Condition 2					
Weave v/c ratio					
Interchange Density					
Lane Changes On to ML					
Lane Changes ML to Off					
Lane Changes On to Off					
Min Lane Change Rate					
Weave LC Rate					
Non-Weave LC Rate 1					
Non-Weave LC Rate 2					
Non-Weave LC Rate 3					
Segment LC Rate					
Weave Intensity Factor					
Weave Speed					
Non-Weave Speed					
Segment Speed					
Weave Density					
Weave LOS					
Summarize Segment Operations					
Segment v/c ratio	0.90	0.87	0.70	0.81	0.81
Segment Density	33.8	35.9	25.6	30.4	31.1
Segment LOS	D	E	C	D	D
Over Capacity					

Location	1	2	3	4	5	6



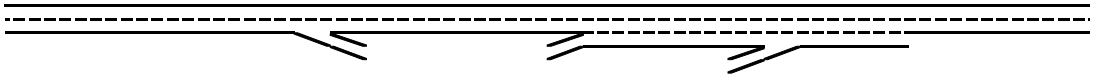
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Define Freeway Segment						
Type	Basic	Diverge	Basic	Basic	Merge	Basic
Length (ft)	8,330	1,500	1,800	1,000	1,500	870
Accel Length					720	
Decel Length		150				
Mainline Volume	1,830	1,830	1,380	1,380	2,390	2,600
On Ramp Volume				1,010	210	
Off Ramp Volume		450				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	1,830	1,830	1,380	2,390	2,600	2,600
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	3	3	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	1,946	1,946	1,467	2,541	2,764	2,764
GP Flow (pcphpl)	973	973	734	847	921	1,382
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.41	0.41	0.31	0.36	0.39	0.59
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	15.0	15.0	11.3	13.0	14.2	21.3
LOS	B	B	B	B	B	C
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)		1,946		1,467	2,541	
GP_{IN} Cap (pcph)		4,700		4,700	7,050	
GP_{IN} v/c ratio		0.41		0.31	0.36	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)		1,467			2,764	
GP_{OUT} Cap (pcph)		4,700			7,050	
GP_{OUT} v/c ratio		0.31			0.39	

Location	1	2	3	4	5	6



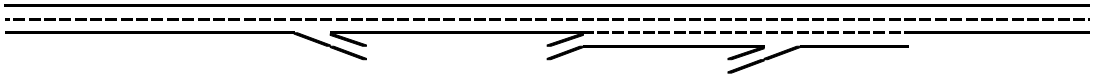
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)				1,010	210	
PHF				0.95	0.95	
Total Lanes				1	1	
Terrain				Level	Level	
Grade %				0.0%	0.0%	
Grade Length (mi)				0.00	0.00	
Truck & Bus %				2.0%	2.0%	
RV %				0.0%	0.0%	
E_T				1.5	1.5	
E_R				1.2	1.2	
f_{HV}				0.990	0.990	
f_P				1.00	1.00	
On Flow (pcph)				1,074	223	
On Flow (pcphpl)				1,074	223	
Calculate On Ramp Roadway Operations						
On Ramp Type				Right	Right	
On Ramp Speed (mph)				25	45	
On Ramp Cap (pcph)				1,900	2,100	
On Ramp v/c ratio				0.57	0.11	

Location	1	2	3	4	5	6



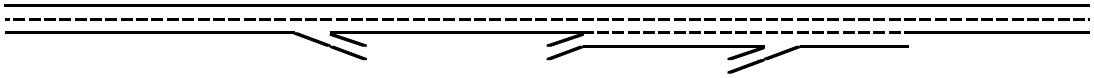
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Off Ramp Flow Rate						
Off Volume (vph)		450				
PHF		0.95				
Total Lanes		1				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		478				
Off Flow (pcphpl)		478				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		2,100				
Off Ramp v/c ratio		0.23				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type					On	
Up Distance					1,000	
Up Flow (pcph)					1,074	
Down Type					No	
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)					2,541	
Up Ramp L_{EQ}					863	
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)					0.598	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}					0.598	
v_{12} (pcph)					1,519	
v_3 (pcph)					1,022	
v_{34} (pcph)						
v_{12a} (pcph)					1,519	
v_{R12a} (pcph)					1,742	
Merge Speed Index					0.28	
Merge Area Speed					58.6	
Outer Lanes Volume					1,022	
Outer Lanes Speed					63.1	
Segment Speed					60.2	
Merge v/c ratio					0.38	
Merge Density					14.4	
Merge LOS					B	

Location	1	2	3	4	5	6



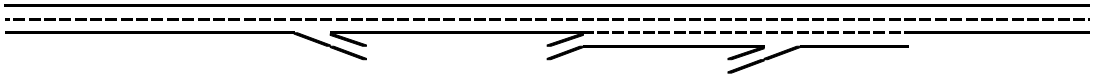
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)		1,946				
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)		0.689				
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}		1.000				
v_{12} (pcph)		1,946				
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)		1,946				
Diverge Speed Index		0.34				
Diverge Area Speed		57.2				
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed		57.2				
Diverge v/c ratio		0.44				
Diverge Density		19.6				
Diverge LOS		B				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	1	2	3	4	5	6



Key

<> Express Lane (HOV)

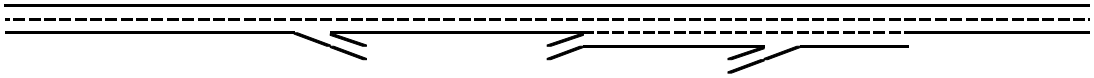
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 CIP No Project
Time Period: 2035 PM Peak Hour

Location	1	2	3	4	5	6



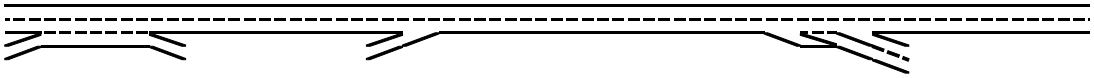
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.41	0.44	0.31	0.36	0.38	0.59
Segment Density	15.0	19.6	11.3	13.0	14.4	21.3
Segment LOS	B	B	B	B	B	C
Over Capacity						

Location	7	8	9	10	11	12



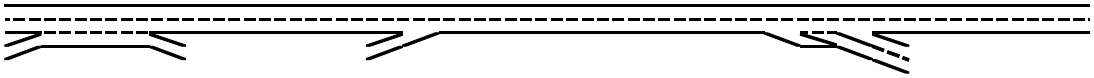
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Basic	Diverge	Basic
Length (ft)	3,050	1,120	1,500	2,210	1,500	1,830
Accel Length			450			
Decel Length					1,500	
Mainline Volume	2,600	2,990	2,990	3,810	3,810	3,300
On Ramp Volume	920		820			
Off Ramp Volume	530				510	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,520	2,990	3,810	3,810	3,810	3,300
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,742	3,179	4,051	4,051	4,051	3,508
GP Flow (pcphpl)	1,247	1,589	2,025	2,025	2,025	1,754
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.53	0.68	0.86	0.86	0.86	0.75
Speed (mph)	65.0	64.5	59.5	59.5	59.5	63.2
Density (pcphpl)	19.2	24.6	34.1	34.1	34.1	27.7
LOS	C	C	D	D	D	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	2,759		3,179		4,051	
GP_{IN} Cap (pcph)	4,700		4,700		4,700	
GP_{IN} v/c ratio	0.59		0.68		0.86	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,179		4,051		3,508	
GP_{OUT} Cap (pcph)	4,700		4,700		4,700	
GP_{OUT} v/c ratio	0.68		0.86		0.75	

Location	7	8	9	10	11	12



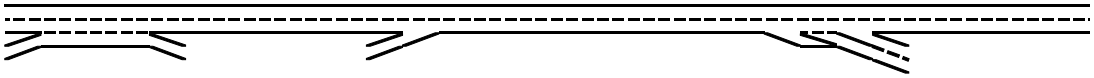
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5			
E_R	1.2	1.2	1.2			
f_{HV}	0.990	0.990	0.990			
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	920		820			
PHF	0.95		0.95			
Total Lanes	1		1			
Terrain	Level		Level			
Grade %	0.0%		0.0%			
Grade Length (mi)	0.00		0.00			
Truck & Bus %	3.0%		2.0%			
RV %	0.0%		0.0%			
E_T	1.5		1.5			
E_R	1.2		1.2			
f_{HV}	0.985		0.990			
f_P	1.00		1.00			
On Flow (pcph)	983		872			
On Flow (pcphpl)	983		872			
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right			
On Ramp Speed (mph)	45		25			
On Ramp Cap (pcph)	2,100		1,900			
On Ramp v/c ratio	0.47		0.46			

Location	7	8	9	10	11	12



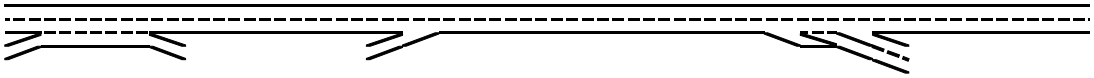
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	530				510	
PHF	0.95				0.95	
Total Lanes	1				2	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	2.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.990				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	563				542	
Off Flow (pcphpl)	563				271	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				4,200	
Off Ramp v/c ratio	0.27				0.13	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,179			
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.590			
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000			
v_{12} (pcph)			3,179			
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			3,179			
v_{R12a} (pcph)			4,051			
Merge Speed Index			0.52			
Merge Area Speed			53.0			
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed			53.0			
Merge v/c ratio			0.88			
Merge Density			33.8			
Merge LOS			D			

Location	7	8	9	10	11	12



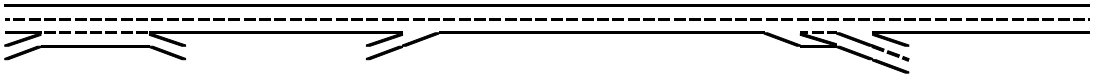
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					4,051	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.634	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					4,051	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					4,051	
Diverge Speed Index					0.35	
Diverge Area Speed					57.0	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed					57.0	
Diverge v/c ratio					0.92	
Diverge Density					25.6	
Diverge LOS					C	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	92					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	98					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	828					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	885					

Location	7	8	9	10	11	12



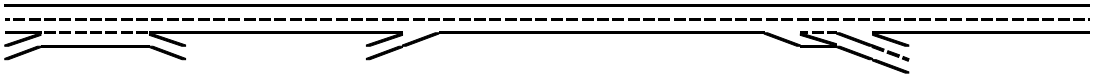
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	438					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
ML to Off Flow (pcph)	520					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	2,162					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
GP to GP Flow (pcph)	2,569					

Location	7	8	9	10	11	12



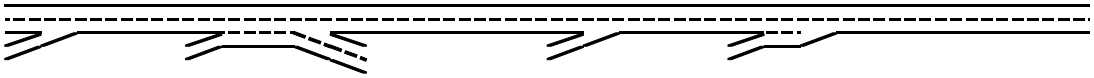
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,050					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	1,405					
Non-Weave Flow	2,667					
Segment Flow	4,072					
Max Weave Length	6,072					
Length Check	OK					
Ideal Weave Capacity	2,042					
f_{HV}	0.989					
f_P	0.997					
Capacity Condition 1	6,040					
Capacity Condition 2	6,857					
Weave v/c ratio	0.66					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.66	0.68	0.88	0.86	0.92	0.75
Segment Density		24.6	33.8	34.1	25.6	27.7
Segment LOS		C	D	D	C	D
Over Capacity						

Location	13	14	15	16	17	18



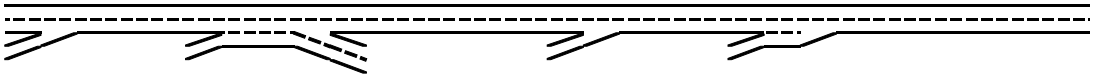
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Define Freeway Segment						
Type	Merge	Weave	Basic	Merge	Merge	Basic
Length (ft)	690	3,344	1,280	1,310	1,500	770
Accel Length	400			500	1,450	
Decel Length						
Mainline Volume	3,300	3,900	3,440	3,440	4,050	4,500
On Ramp Volume	600	350		610	450	
Off Ramp Volume		810				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,900	4,250	3,440	4,050	4,500	4,500
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	3	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,146	4,518	3,657	4,306	4,784	4,784
GP Flow (pcphpl)	2,073	1,506	1,829	2,153	2,392	2,392
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.88	0.64	0.78	0.92	1.02	1.02
Speed (mph)	58.6	64.8	62.4	57.0	-	-
Density (pcphpl)	35.4	23.2	29.3	37.8	-	-
LOS	E	C	D	E	F	F
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	3,508	4,146		3,657	4,306	
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{IN} v/c ratio	0.75	0.88		0.78	0.92	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	4,146	3,657		4,306	4,784	
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{OUT} v/c ratio	0.88	0.78		0.92	1.02	

Location	13	14	15	16	17	18



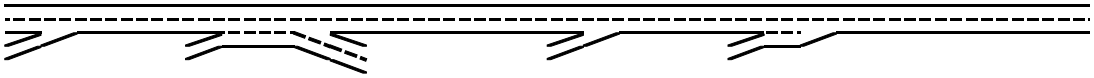
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T		1.5	1.5	1.5	1.5	
E_R		1.2	1.2	1.2	1.2	
f_{HV}		0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	600	350		610	450	
PHF	0.95	0.95		0.95	0.95	
Total Lanes	1	1		1	1	
Terrain	Level	Level		Level	Level	
Grade %	0.0%	0.0%		0.0%	0.0%	
Grade Length (mi)	0.00	0.00		0.00	0.00	
Truck & Bus %	2.0%	2.0%		2.0%	2.0%	
RV %	0.0%	0.0%		0.0%	0.0%	
E_T	1.5	1.5		1.5	1.5	
E_R	1.2	1.2		1.2	1.2	
f_{HV}	0.990	0.990		0.990	0.990	
f_P	1.00	1.00		1.00	1.00	
On Flow (pcph)	638	372		649	478	
On Flow (pcphpl)	638	372		649	478	
Calculate On Ramp Roadway Operations						
On Ramp Type	Right	Right		Right	Right	
On Ramp Speed (mph)	25	45		25	45	
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100	
On Ramp v/c ratio	0.34	0.18		0.34	0.23	

Location	13	14	15	16	17	18



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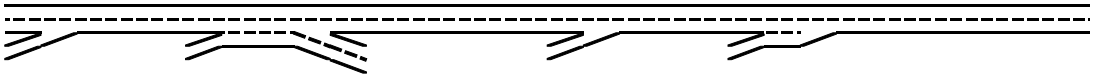
<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)		810				
PHF		0.95				
Total Lanes		2				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		861				
Off Flow (pcphpl)		431				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		4,200				
Off Ramp v/c ratio		0.21				
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)	3,508			3,657	4,306	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)	0.589			0.592	0.618	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}	1.000			1.000	1.000	
v_{12} (pcph)	3,508			3,657	4,306	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)	3,508			3,657	4,306	
v_{R12a} (pcph)	4,146			4,306	4,784	
Merge Speed Index	0.55			0.59	-	
Merge Area Speed	52.4			51.5	-	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed	52.4			51.5		
Merge v/c ratio	0.90			0.94	1.04	
Merge Density	35.0			35.6	-	
Merge LOS	E			E	F	

Location	13	14	15	16	17	18



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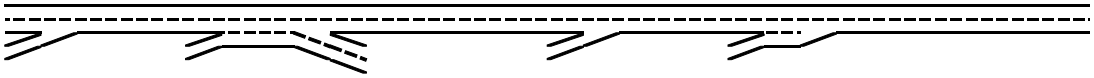
<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)						
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)						
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}						
v_{12} (pcph)						
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)						
Diverge Speed Index						
Diverge Area Speed						
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio						
Diverge Density						
Diverge LOS						
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)		50				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to Off Flow (pcph)		53				
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)		300				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to ML Flow (pcph)		321				

Location	13	14	15	16	17	18



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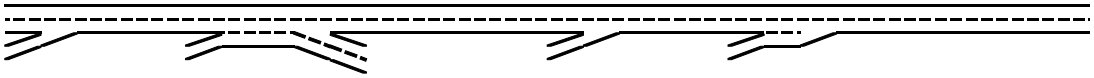
<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)		760				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
ML to Off Flow (pcph)		824				
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)		3,140				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
GP to GP Flow (pcph)		3,404				

Location	13	14	15	16	17	18



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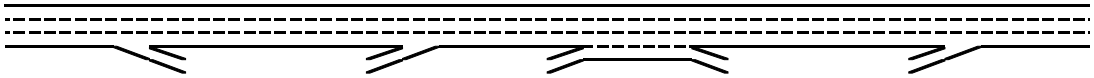
<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Weave Segment Operations						
Weave Type		One-sided				
Weave Length		2,344				
Segment Lanes		3				
Weave Lanes		2				
Weave Flow (pcph)		1,145				
Non-Weave Flow		3,458				
Segment Flow		4,602				
Max Weave Length		5,040				
Length Check		OK				
Ideal Weave Capacity		2,144				
f_{HV}		0.972				
f_P		0.999				
Capacity Condition 1		6,245				
Capacity Condition 2		9,371				
Weave v/c ratio		0.72				
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.90	0.72	0.78	0.94	1.04	1.02
Segment Density	35.0		29.3	35.6	-	-
Segment LOS	E		D	E	F	F
Over Capacity					Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes

Location	19	20	21	22	23	24



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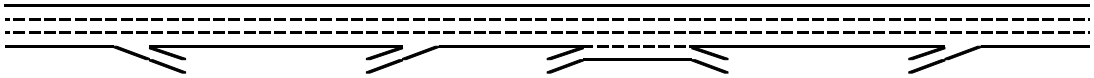
<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Define Freeway Segment						
Type	Diverge	Basic	Merge	Weave	Basic	Merge
Length (ft)	1,500	1,680	1,000	3,140	1,610	1,180
Accel Length			380			550
Decel Length	200					
Mainline Volume	4,500	3,560	3,560	3,900	4,690	4,690
On Ramp Volume			340	1,660		620
Off Ramp Volume	940			870		
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,500	3,560	3,900	5,560	4,690	5,310
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	4	3	3
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	4.2%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.979	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,784	3,785	4,146	5,976	4,986	5,645
GP Flow (pcphpl)	1,595	1,262	1,382	1,494	1,662	1,882
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.68	0.54	0.59	0.64	0.71	0.80
Speed (mph)	64.5	65.0	65.0	64.9	64.0	61.7
Density (pcphpl)	24.7	19.4	21.3	23.0	26.0	30.5
LOS	C	C	C	C	C	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,784		3,785	4,211		4,983
GP_{IN} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{IN} v/c ratio	0.68		0.54	0.60		0.71
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,785		4,146	5,051		5,645
GP_{OUT} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{OUT} v/c ratio	0.54		0.59	0.72		0.80

Location	19	20	21	22	23	24



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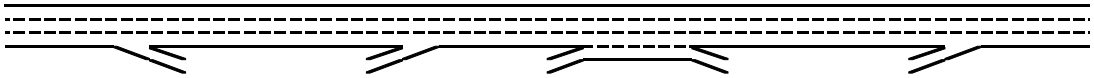
<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)			340	1,660		620
PHF			0.95	0.95		0.95
Total Lanes			1	1		1
Terrain			Level	Level		Level
Grade %			0.0%	0.0%		0.0%
Grade Length (mi)			0.00	0.00		0.00
Truck & Bus %			2.0%	2.0%		3.0%
RV %			0.0%	0.0%		0.0%
E_T			1.5	1.5		1.5
E_R			1.2	1.2		1.2
f_{HV}			0.990	0.990		0.985
f_P			1.00	1.00		1.00
On Flow (pcph)			361	1,765		662
On Flow (pcphpl)			361	1,765		662
Calculate On Ramp Roadway Operations						
On Ramp Type			Right	Right		Right
On Ramp Speed (mph)			25	45		25
On Ramp Cap (pcph)			1,900	2,100		1,900
On Ramp v/c ratio			0.19	0.84		0.35

Location	19	20	21	22	23	24



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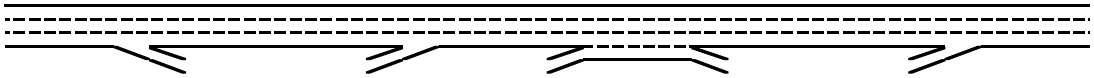
<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	940			870		
PHF	0.95			0.95		
Total Lanes	1			1		
Terrain	Level			Level		
Grade %	0.0%			0.0%		
Grade Length (mi)	0.00			0.00		
Truck & Bus %	2.0%			2.0%		
RV %	0.0%			0.0%		
E_T	1.5			1.5		
E_R	1.2			1.2		
f_{HV}	0.990			0.990		
f_P	1.00			1.00		
Off Flow (pcph)	999			925		
Off Flow (pcphpl)	999			925		
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right			Right		
Off Ramp Speed	45			45		
Off Ramp Cap (pcph)	2,100			2,100		
Off Ramp v/c ratio	0.48			0.44		
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type	No		Off			No
Up Distance			1,680			
Up Flow (pcph)			999			
Down Type	On		No			On
Down Distance	1,500					1,180
Down Flow (pcph)	361					919
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,785			4,983
Up Ramp L_{EQ}			-39			
Down Ramp L_{EQ}						5,455
P_{FM} (Eqn 13-3)			0.588			0.593
P_{FM} (Eqn 13-4)			0.696			
P_{FM} (Eqn 13-5)						
P_{FM}			0.588			0.593
v_{12} (pcph)			2,226			2,954
v_3 (pcph)			1,559			2,029
v_{34} (pcph)						
v_{12a} (pcph)			2,226			2,954
v_{R12a} (pcph)			2,587			3,617
Merge Speed Index			0.35			0.44
Merge Area Speed			56.9			54.9
Outer Lanes Volume			1,559			2,029
Outer Lanes Speed			61.2			59.5
Segment Speed			58.4			56.5
Merge v/c ratio			0.56			0.79
Merge Density			23.1			29.9
Merge LOS			C			D

Location	19	20	21	22	23	24



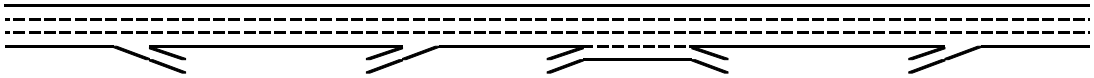
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)	4,784					
Up Ramp L_{EQ}						
Down Ramp L_{EQ}	575					
P_{FD} (Eqn 13-9)	0.594					
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}	0.594					
v_{12} (pcph)	3,249					
v_3 (pcph)	1,535					
v_{34} (pcph)						
v_{12a} (pcph)	3,249					
Diverge Speed Index	0.39					
Diverge Area Speed	56.1					
Outer Lanes Volume	1,535					
Outer Lanes Speed	69.2					
Segment Speed	59.7					
Diverge v/c ratio	0.74					
Diverge Density	30.4					
Diverge LOS	D					
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)				166		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to Off Flow (pcph)				177		
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)				1,494		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to ML Flow (pcph)				1,596		

Location	19	20	21	22	23	24



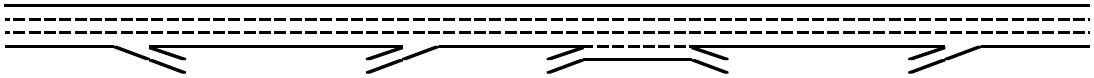
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)				704		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
ML to Off Flow (pcph)				763		
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)				3,196		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
GP to GP Flow (pcph)				3,465		

Location	19	20	21	22	23	24



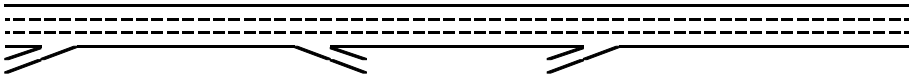
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Weave Segment Operations						
Weave Type				One-sided		
Weave Length				2,140		
Segment Lanes				4		
Weave Lanes				2		
Weave Flow (pcph)				2,360		
Non-Weave Flow				3,642		
Segment Flow				6,002		
Max Weave Length				6,604		
Length Check				OK		
Ideal Weave Capacity				2,008		
f_{HV}				0.975		
f_P				0.996		
Capacity Condition 1				7,803		
Capacity Condition 2				5,930		
Weave v/c ratio				0.98		
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.74	0.54	0.56	0.98	0.71	0.79
Segment Density	30.4	19.4	23.1		26.0	29.9
Segment LOS	D	C	C		C	D
Over Capacity						

Location	25	26	27	28	29



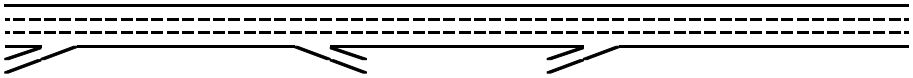
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segment					
Type	Merge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	1,500	2,830	1,500	750
Accel Length	580			590	
Decel Length		140			
Mainline Volume	5,310	6,170	5,350	5,350	6,530
On Ramp Volume	860			1,180	
Off Ramp Volume		820			
Express Lane Volume					
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP					
GP Volume (vph)	6,170	6,170	5,350	6,530	6,530
PHF	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	6,560	6,560	5,688	6,942	6,942
GP Flow (pcphpl)	2,187	2,187	1,896	2,314	2,314
Calculate Speed in General Purpose Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calculated FFS					
Measured FFS					
FFS Curve	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.93	0.93	0.81	0.98	0.98
Speed (mph)	56.2	56.2	61.5	53.2	53.2
Density (pcphpl)	38.9	38.9	30.8	43.5	43.5
LOS	E	E	D	E	E
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)	5,641	6,560		5,682	
GP_{IN} Cap (pcph)	7,050	7,050		7,050	
GP_{IN} v/c ratio	0.80	0.93		0.81	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	6,560	5,688		6,942	
GP_{OUT} Cap (pcph)	7,050	7,050		7,050	
GP_{OUT} v/c ratio	0.93	0.81		0.98	

Location	25	26	27	28	29



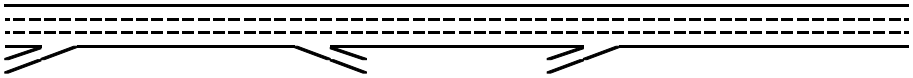
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)					
PHF					
Express Lanes	0	0	0	0	0
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P					
EL Flow (pcph)					
EL Flow (pcphpl)					
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS					
FFS					
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio					
Calculate On Ramp Flow Rate					
On Volume (vph)	860			1,180	
PHF	0.95			0.95	
Total Lanes	1			1	
Terrain	Level			Level	
Grade %	0.0%			0.0%	
Grade Length (mi)	0.00			0.00	
Truck & Bus %	3.0%			3.0%	
RV %	0.0%			0.0%	
E_T	1.5			1.5	
E_R	1.2			1.2	
f_{HV}	0.985			0.985	
f_P	1.00			1.00	
On Flow (pcph)	919			1,261	
On Flow (pcphpl)	919			1,261	
Calculate On Ramp Roadway Operations					
On Ramp Type	Right			Right	
On Ramp Speed (mph)	45			45	
On Ramp Cap (pcph)	2,100			2,100	
On Ramp v/c ratio	0.44			0.60	

Location	25	26	27	28	29



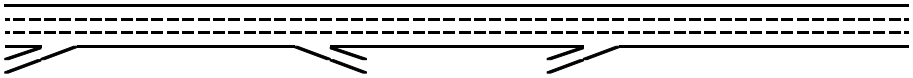
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flow Rate					
Off Volume (vph)		820			
PHF		0.95			
Total Lanes		1			
Terrain		Level			
Grade %		0.0%			
Grade Length (mi)		0.00			
Truck & Bus %		2.0%			
RV %		0.0%			
E_T		1.5			
E_R		1.2			
f_{HV}		0.990			
f_P		1.00			
Off Flow (pcph)		872			
Off Flow (pcphpl)		872			
Calculate Off Ramp Roadway Operations					
Off Ramp Type		Right			
Off Ramp Speed		45			
Off Ramp Cap (pcph)		2,100			
Off Ramp v/c ratio		0.42			
Determine Adjacent Ramp for Three-Lane Mainline					
Up Type	On	On		Off	
Up Distance	1,180	3,000		2,830	
Up Flow (pcph)	662	919		872	
Down Type	Off	On		No	
Down Distance	3,000	2,830			
Down Flow (pcph)	872	1,261			
Calculate Merge Influence Area Operations					
Effective v_P (pcph)	5,641			5,682	
Up Ramp L_{EQ}	1,613			1,699	
Down Ramp L_{EQ}	5,079				
P_{FM} (Eqn 13-3)	0.594			0.594	
P_{FM} (Eqn 13-4)				0.665	
P_{FM} (Eqn 13-5)	0.625				
P_{FM}	0.625			0.594	
v_{12} (pcph)	3,526			3,375	
v_3 (pcph)	2,115			2,307	
v_{34} (pcph)					
v_{12a} (pcph)	3,526			3,375	
v_{R12a} (pcph)	4,445			4,636	
Merge Speed Index	0.60			0.67	
Merge Area Speed	51.2			49.6	
Outer Lanes Volume	2,115			2,307	
Outer Lanes Speed	59.2			58.4	
Segment Speed	53.5			52.2	
Merge v/c ratio	0.97			1.01	
Merge Density	36.1			37.4	
Merge LOS	E			F	

Location	25	26	27	28	29



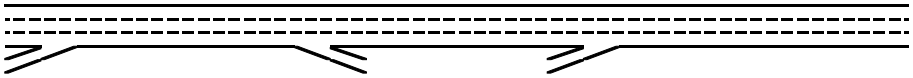
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)		6,560			
Up Ramp L_{EQ}		5,905			
Down Ramp L_{EQ}		2,039			
P_{FD} (Eqn 13-9)		0.556			
P_{FD} (Eqn 13-10)		0.556			
P_{FD} (Eqn 13-11)					
P_{FD}		0.556			
v_{12} (pcph)		4,034			
v_3 (pcph)		2,526			
v_{34} (pcph)					
v_{12a} (pcph)		4,034			
Diverge Speed Index		0.38			
Diverge Area Speed		56.3			
Outer Lanes Volume		2,526			
Outer Lanes Speed		65.4			
Segment Speed		59.5			
Diverge v/c ratio		0.92			
Diverge Density		37.7			
Diverge LOS		E			
Calculate On Ramp to Off Ramp Flow Rate for Wea					
On to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to Off Flow (pcph)					
Calculate On Ramp to Mainline Flow Rate for Weav					
On to ML Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to ML Flow (pcph)					

Location	25	26	27	28	29



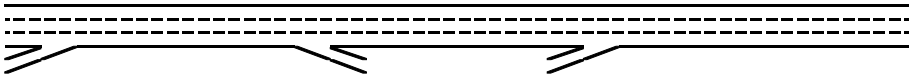
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to Off Ramp Flow Rate for Weav					
ML to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
ML to Off Flow (pcph)					
Calculate General Purpose Lanes to General Purpo					
GP to GP Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
GP to GP Flow (pcph)					

Location	25	26	27	28	29



Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segment Operations					
Weave Type					
Weave Length					
Segment Lanes					
Weave Lanes					
Weave Flow (pcph)					
Non-Weave Flow					
Segment Flow					
Max Weave Length					
Length Check					
Ideal Weave Capacity					
f_{HV}					
f_P					
Capacity Condition 1					
Capacity Condition 2					
Weave v/c ratio					
Interchange Density					
Lane Changes On to ML					
Lane Changes ML to Off					
Lane Changes On to Off					
Min Lane Change Rate					
Weave LC Rate					
Non-Weave LC Rate 1					
Non-Weave LC Rate 2					
Non-Weave LC Rate 3					
Segment LC Rate					
Weave Intensity Factor					
Weave Speed					
Non-Weave Speed					
Segment Speed					
Weave Density					
Weave LOS					
Summarize Segment Operations					
Segment v/c ratio	0.97	0.92	0.81	1.01	0.98
Segment Density	36.1	37.7	30.8	-	43.5
Segment LOS	E	E	D	F	E
Over Capacity				Merge	

Leisch Method for Weaving Analysis

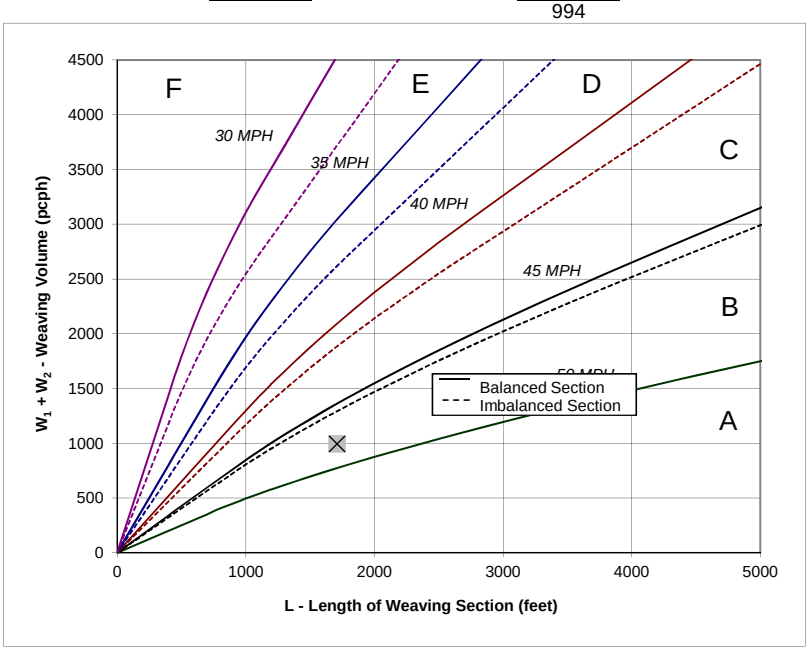
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

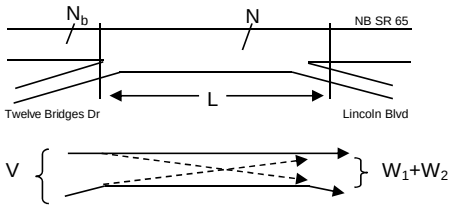
Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project AM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	2,630	Volume (vph)*	410	Volume (vph)*	560
Truck Percentage	5%	Truck Percentage	7%	Truck Percentage	3%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	2,689	Volume (pcph)	425	Volume (pcph)	569
			994		



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **48.1**
4. Weaving Intensity Factor (k) **1.50**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **968**
6. Level of Service (LOS) **B**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

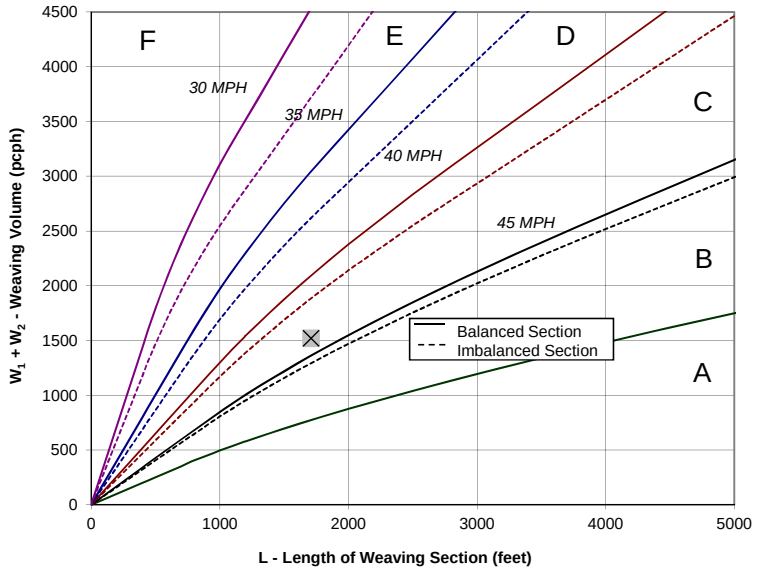
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

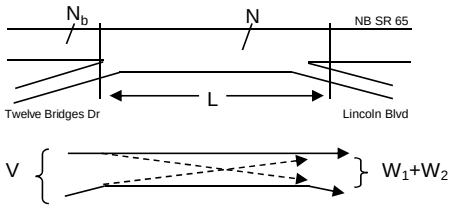
Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project PM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,460	Volume (vph)*	853	Volume (vph)*	653
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,526	Volume (pcph)	861	Volume (pcph)	659



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **43.9**
4. Weaving Intensity Factor (k) **2.11**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **2,086**
6. Level of Service (LOS) **F**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

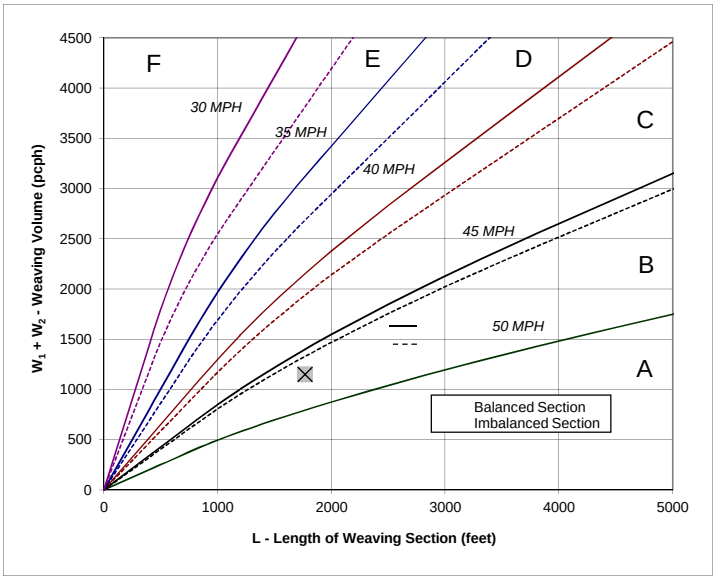
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,770

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,480	Volume (vph)*	315	Volume (vph)*	825
Truck Percentage	5%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,558	Volume (pcph)	319	Volume (pcph)	834

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project AM
Freeway	NB SR 65
On-ramp	Sunset Blvd
Off-ramp	Placer Pkwy



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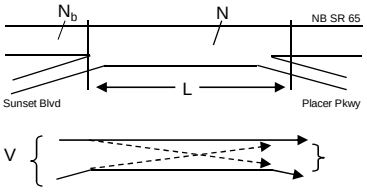

Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 46.6
4. Weaving Intensity Factor (k) 1.74
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,264
6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

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Leisch Method for Weaving Analysis

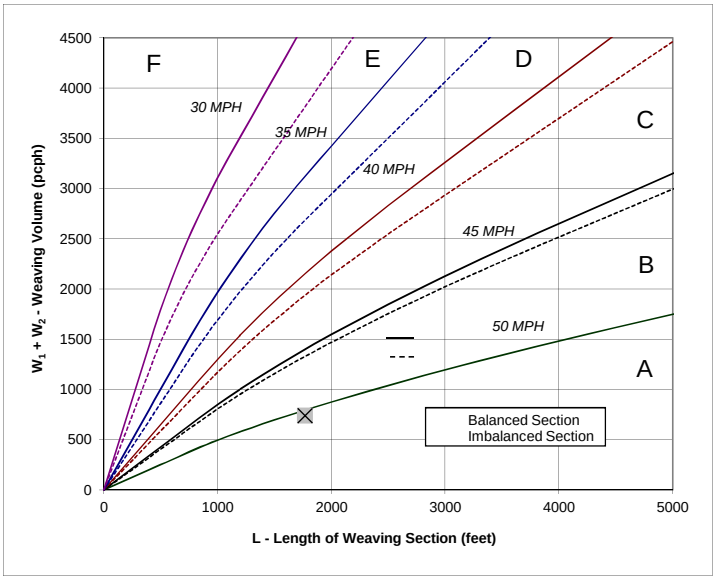
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,770

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project PM
Freeway	NB SR 65
On-ramp	Sunset Blvd
Off-ramp	Placer Pkwy

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,250	Volume (vph)*	422	Volume (vph)*	312
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,301	Volume (pcph)	427	Volume (pcph)	316



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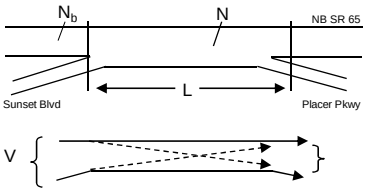


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**40 MPH** and **45 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	49.4
4. Weaving Intensity Factor (k)	1.28
5. Service Volume (SV, pcph) $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$	1,464
6. Level of Service (LOS)	D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

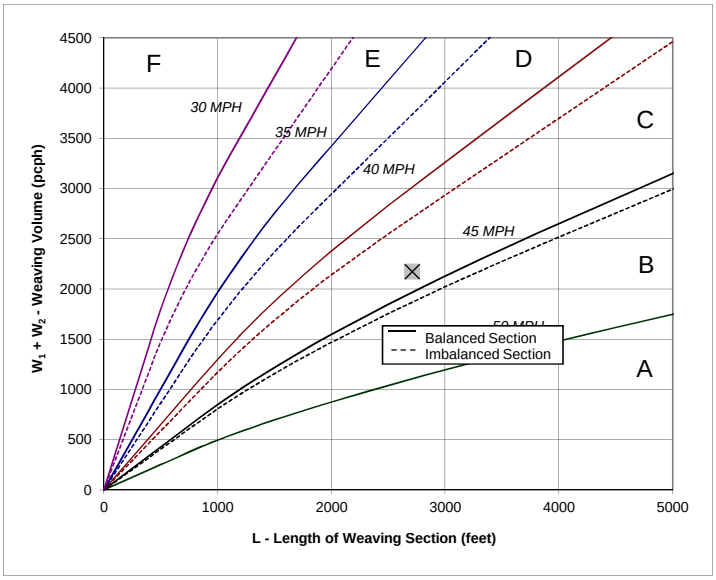
Data Input

Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,710

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,460	Volume (vph)*	396	Volume (vph)*	1,756
Truck Percentage	5%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,583	Volume (pcph)	400	Volume (pcph)	1,773

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project AM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd



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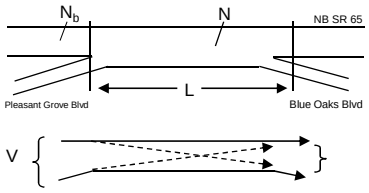


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **44.0**
4. Weaving Intensity Factor (k) **2.85**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,580**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

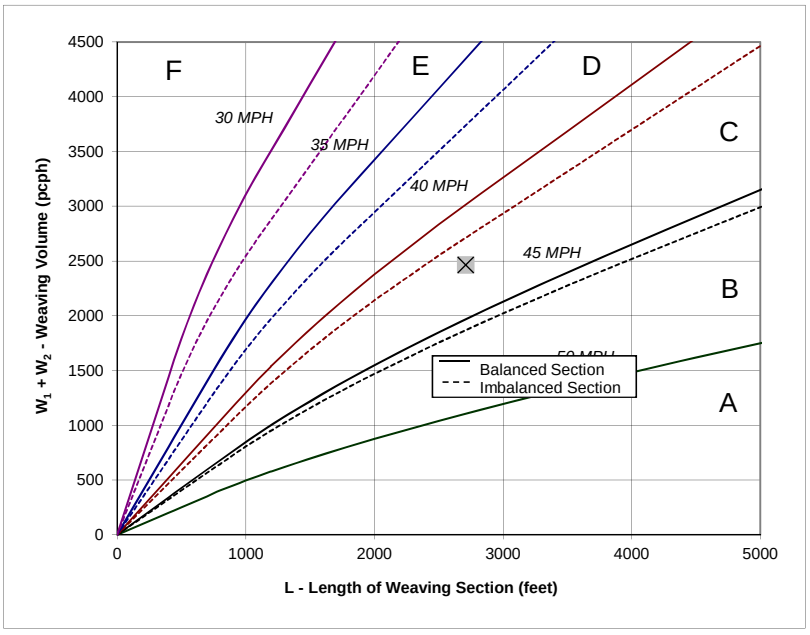
Data Input

Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,710

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project PM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,570	Volume (vph)*	810	Volume (vph)*	1,630
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,637	Volume (pcph)	818	Volume (pcph)	1,646



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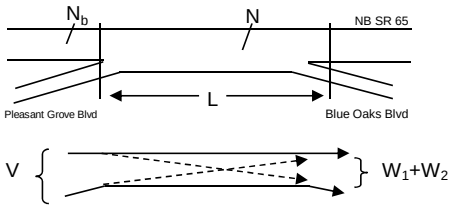


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 42.6
4. Weaving Intensity Factor (k) 2.27
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] 1,668
6. Level of Service (LOS) E

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

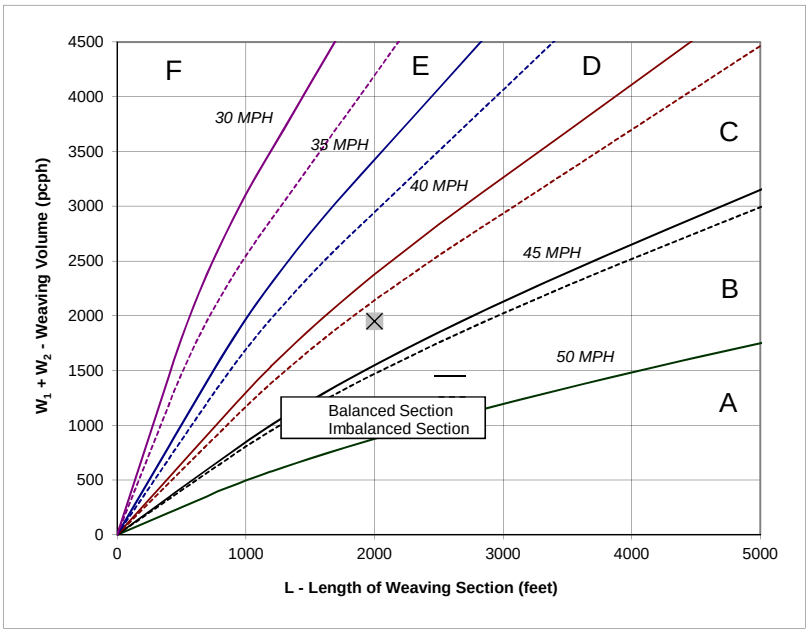
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project AM
Freeway	NB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,490	Volume (vph)*	705	Volume (vph)*	1,225
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,545	Volume (pcph)	712	Volume (pcph)	1,237



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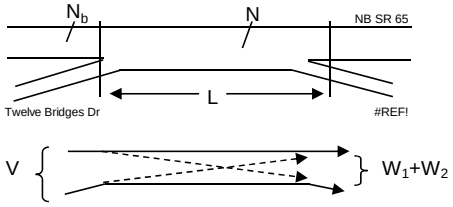


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **42.6**
4. Weaving Intensity Factor (k) **2.27**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **2,149**
6. Level of Service (LOS) **F**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

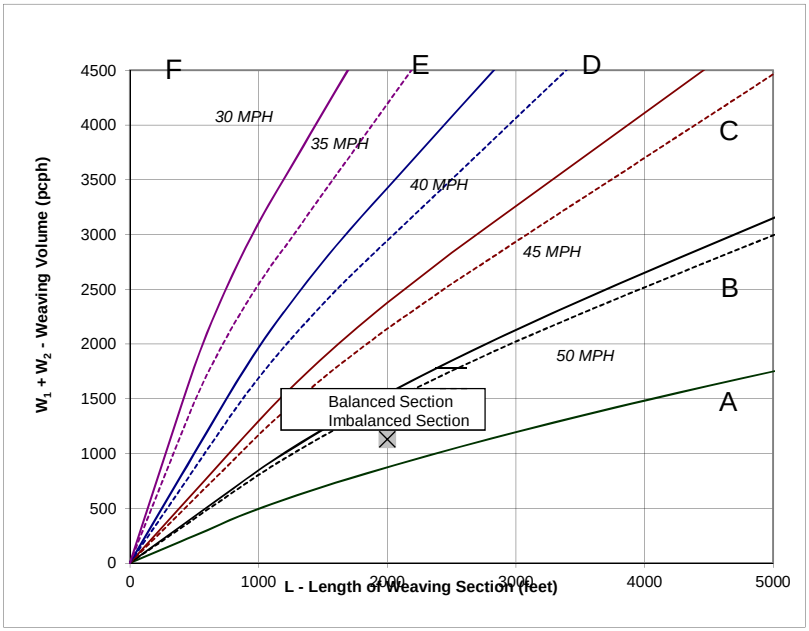
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project PM
Freeway	NB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,520	Volume (vph)*	754	Volume (vph)*	364
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,555	Volume (pcph)	762	Volume (pcph)	368



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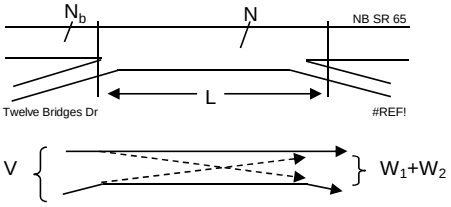


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **48.1**
4. Weaving Intensity Factor (k) **1.50**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,247**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

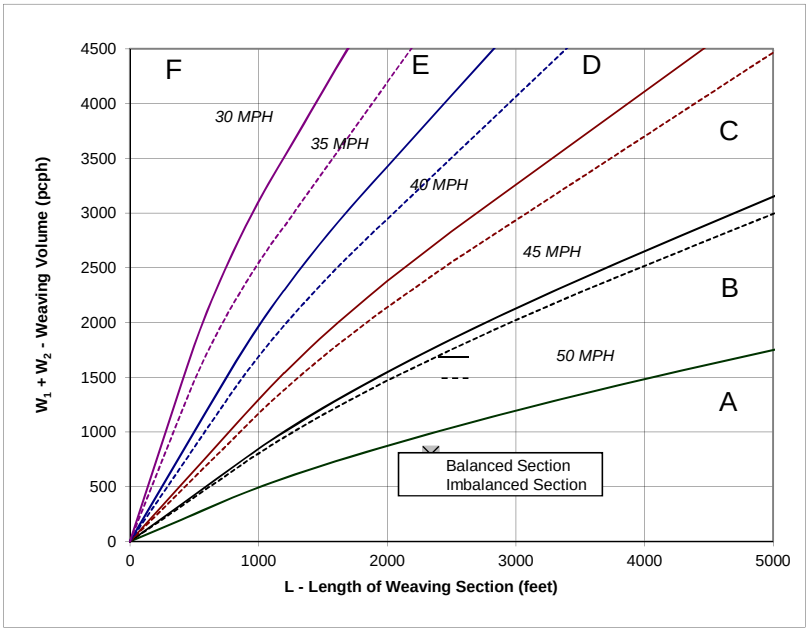
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,340

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project AM
Freeway	SB SR 65
On-ramp	Placer Pkwy
Off-ramp	Sunset Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,320	Volume (vph)*	20	Volume (vph)*	760
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,363	Volume (pcph)	20	Volume (pcph)	776



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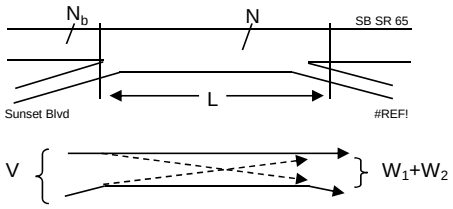

Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **50.1**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,454**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

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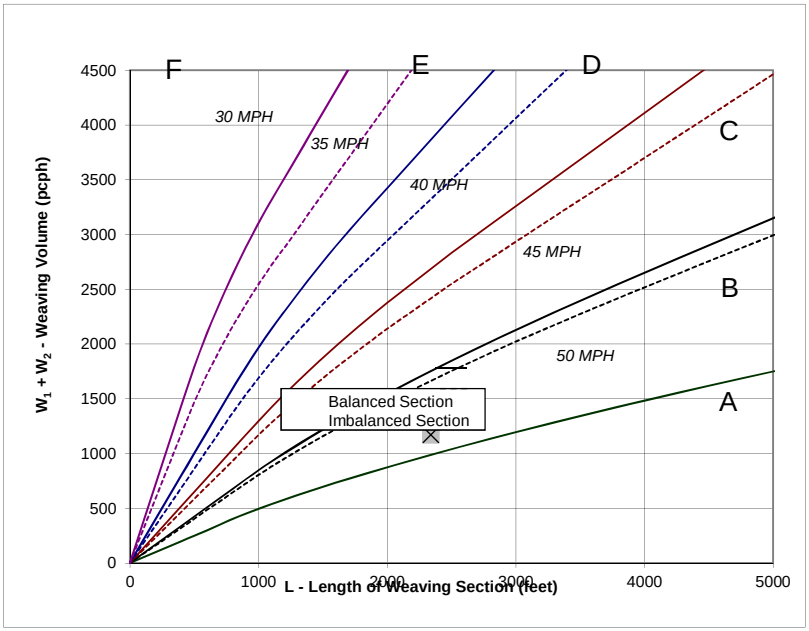
Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,340

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project PM
Freeway	SB SR 65
On-ramp	Placer Pkwy
Off-ramp	Sunset Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,250	Volume (vph)*	350	Volume (vph)*	810
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,293	Volume (pcph)	354	Volume (pcph)	818



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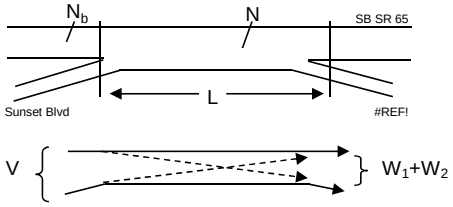


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **48.8**
4. Weaving Intensity Factor (k) **1.39**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,477**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

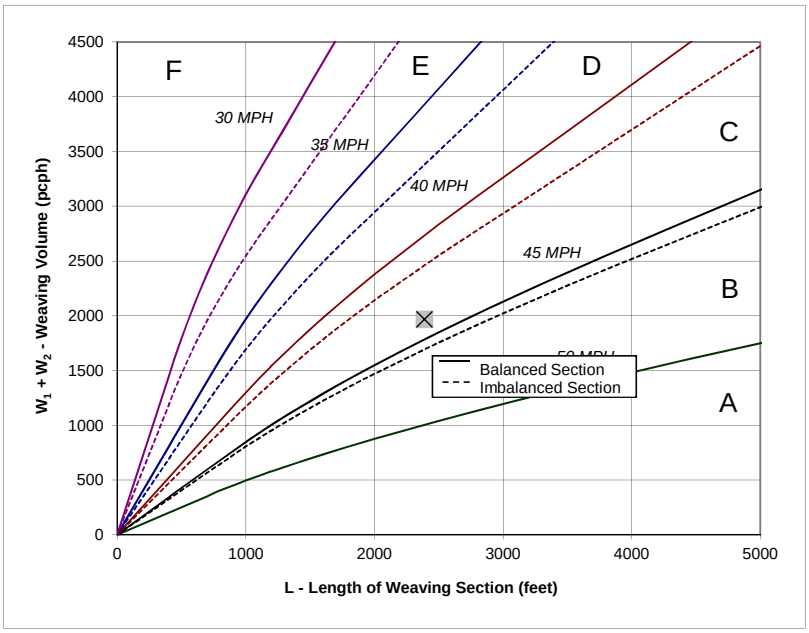
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,390

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project AM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,410	Volume (vph)*	1,077	Volume (vph)*	857
Truck Percentage	2%	Truck Percentage	5%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,464	Volume (pcph)	1,102	Volume (pcph)	866



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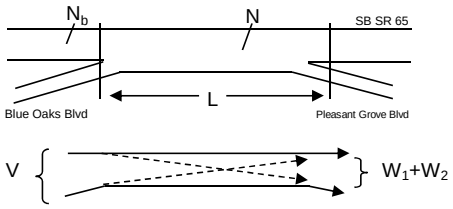


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **44.0**
4. Weaving Intensity Factor (k) **2.10**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,604**
6. Level of Service (LOS) **E**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

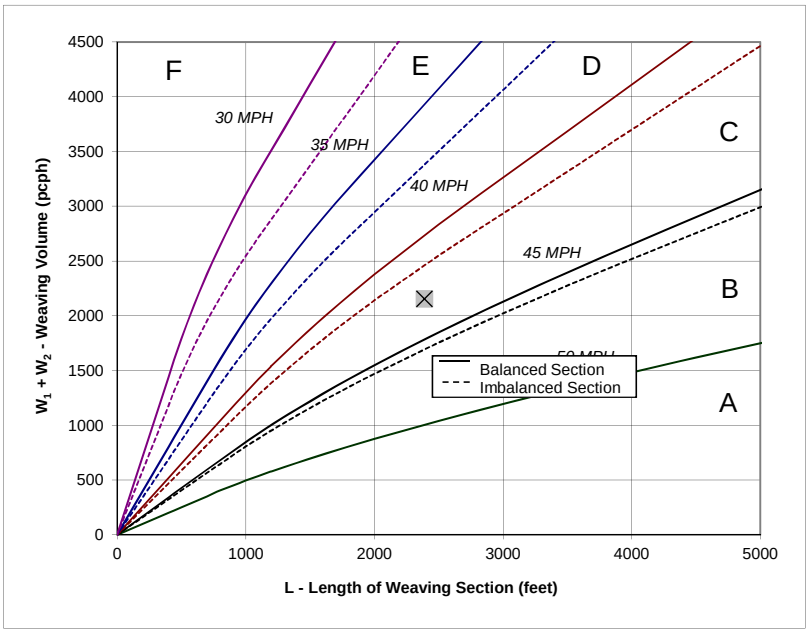
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

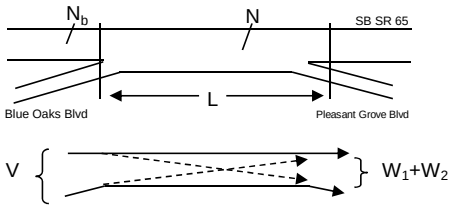
Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,390

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP No Project PM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,560	Volume (vph)*	1,461	Volume (vph)*	671
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,616	Volume (pcph)	1,475	Volume (pcph)	678



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **42.6**
4. Weaving Intensity Factor (k) **2.27**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **2,158**
6. Level of Service (LOS) **F**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

2035 CIP PLUS PROJECT CONDITIONS

CITY OF ROSEVILLE INTERSECTIONS

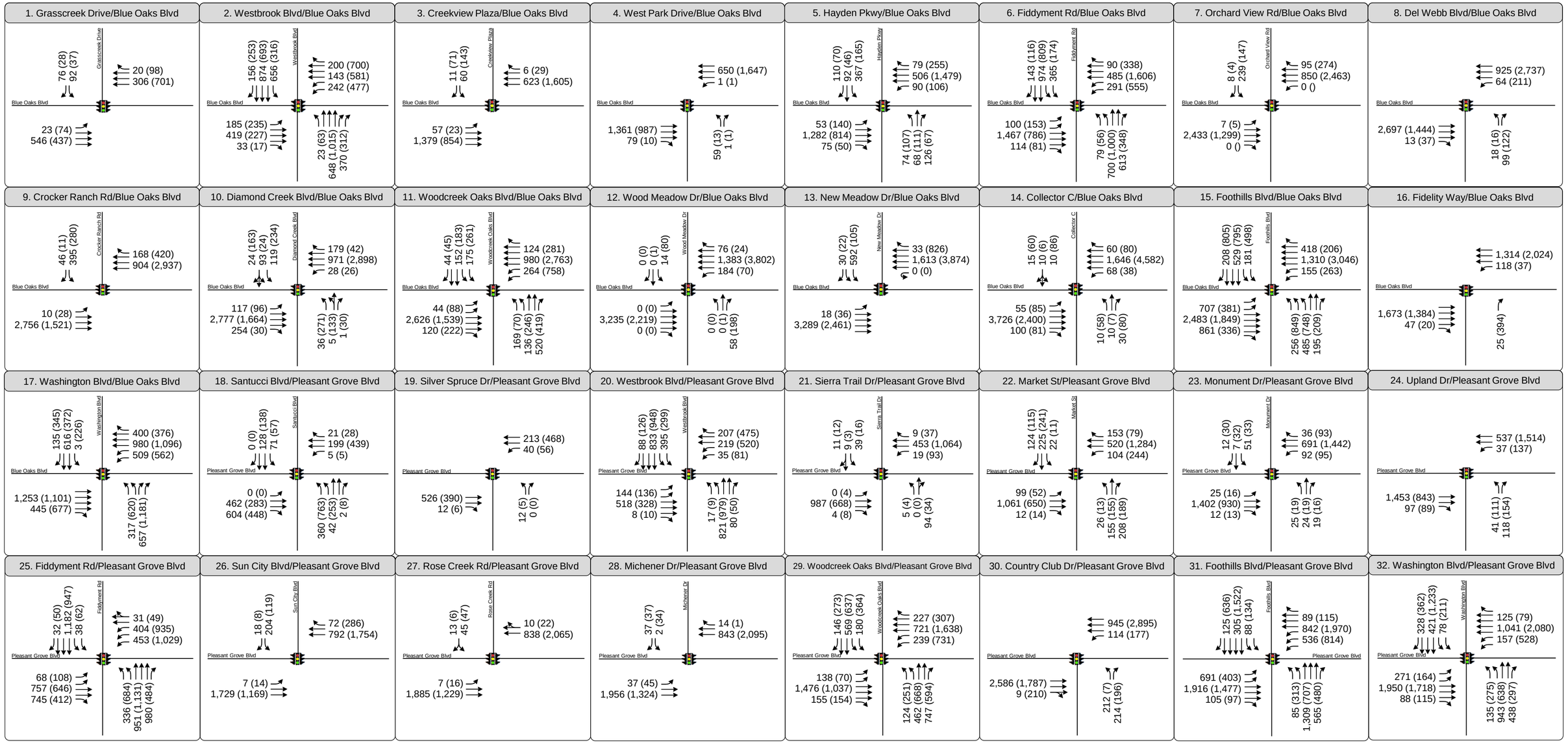
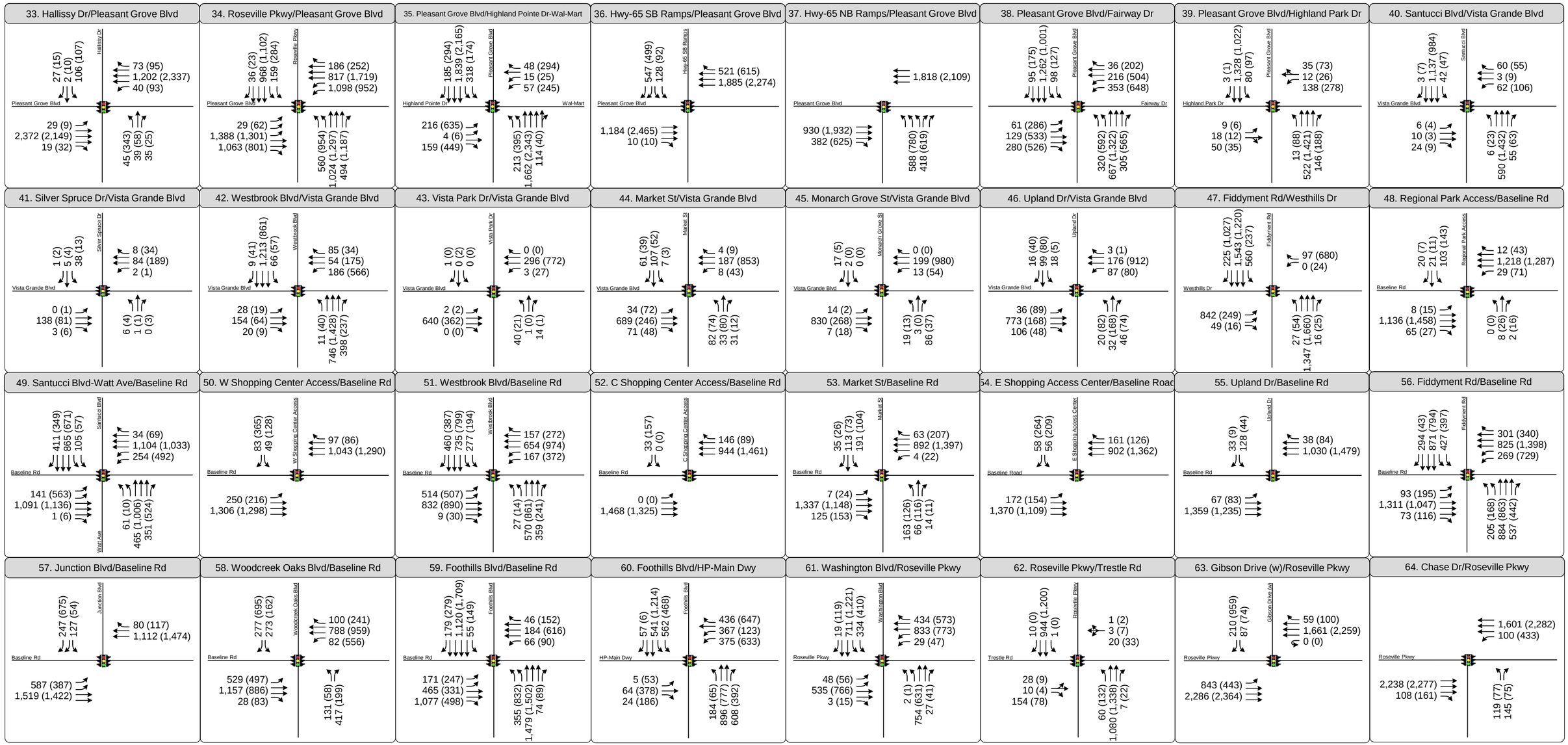


Figure C-2a

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP Plus Project Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure C-2b

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP Plus Project Conditions

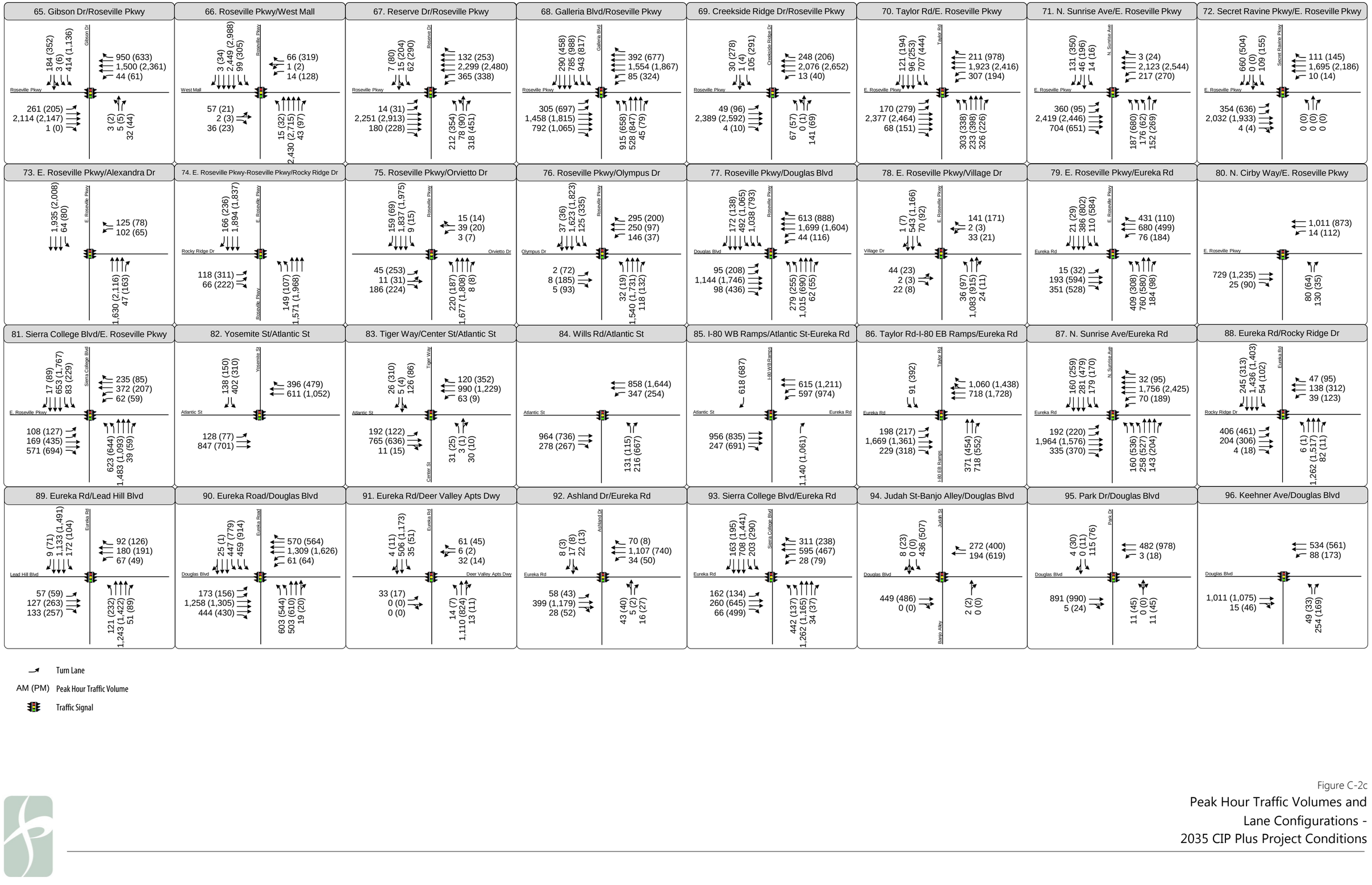
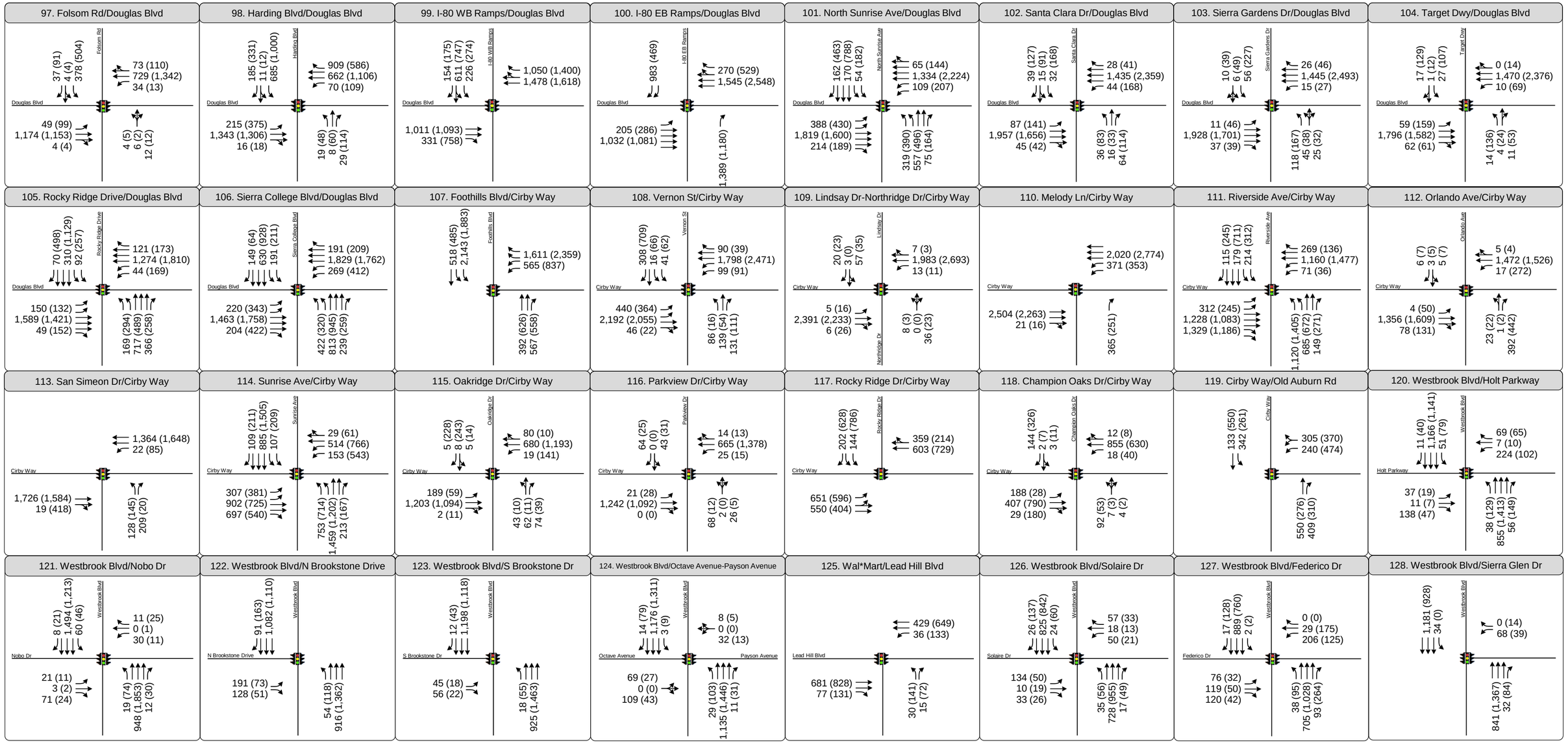


Figure C-2c

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP Plus Project Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure C-2d

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP Plus Project Conditions

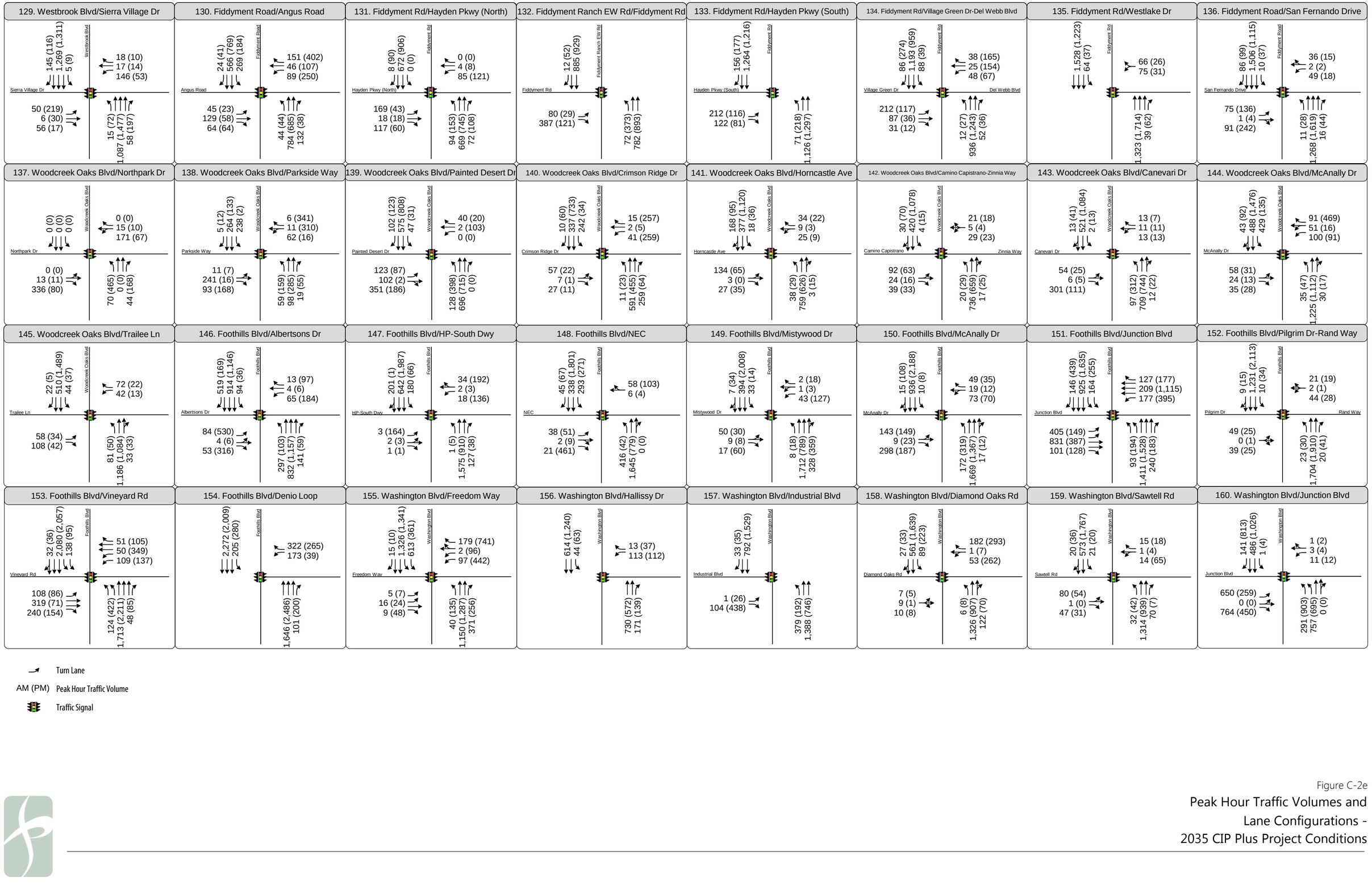
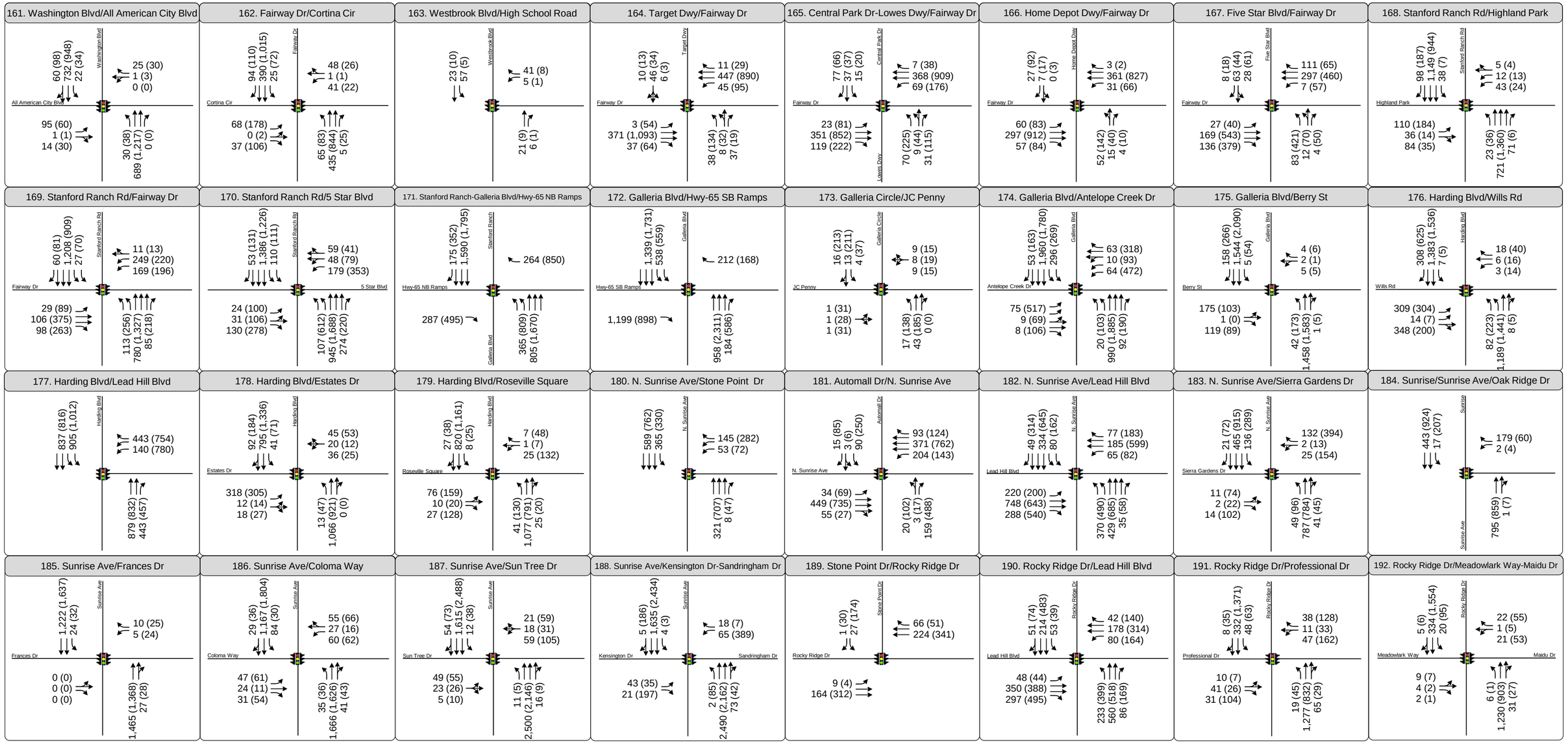


Figure C-2e

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP Plus Project Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure C-2f

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP Plus Project Conditions

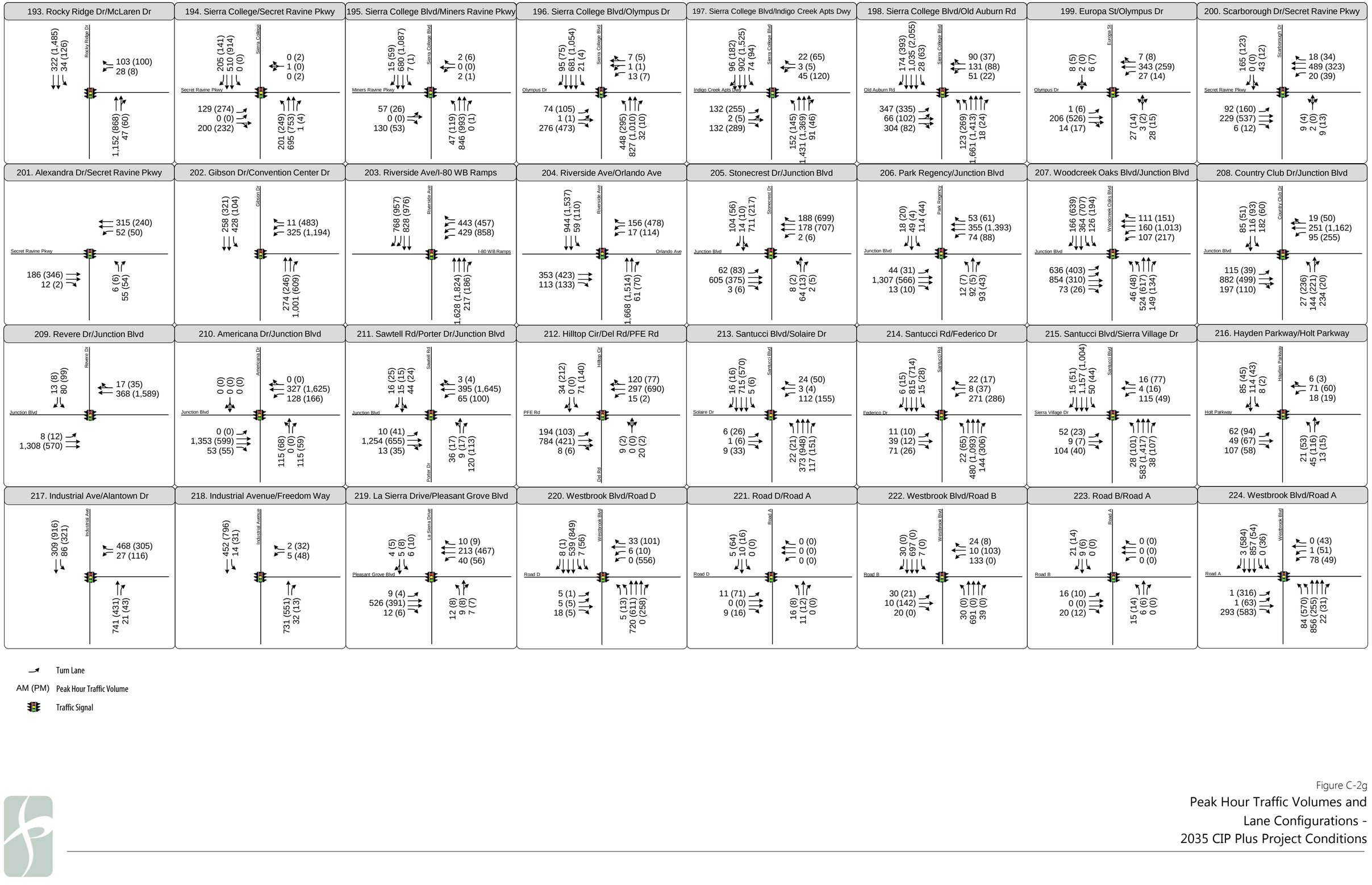
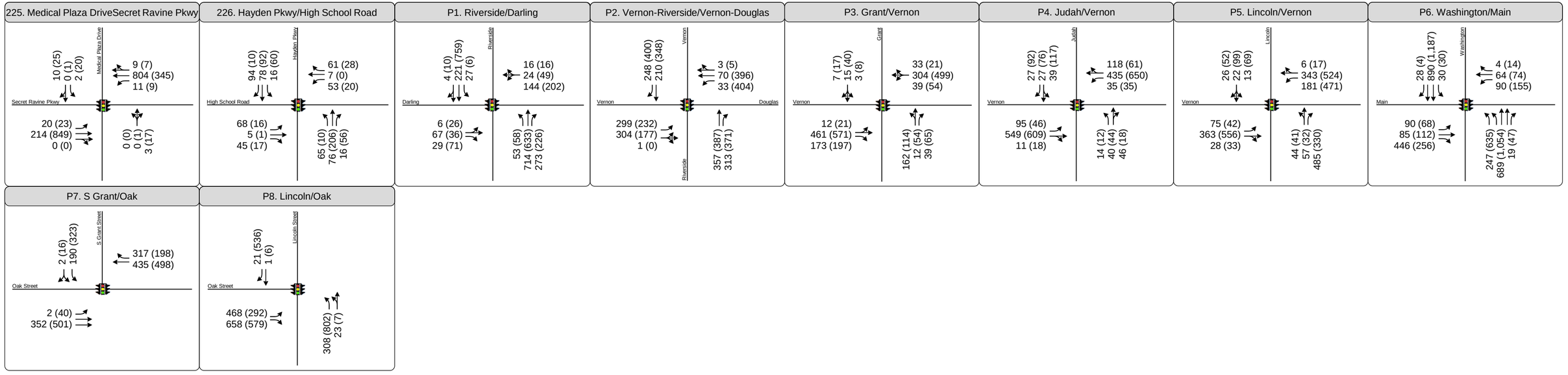


Figure C-2g

Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP Plus Project Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

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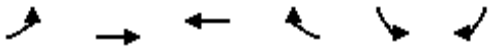
Figure C-2h

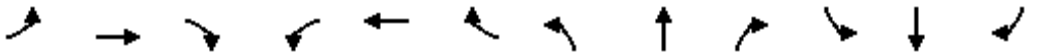
Peak Hour Traffic Volumes and Lane Configurations - 2035 CIP Plus Project Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	23	546	306	20	92	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1548	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	575	322	21	97	80
RTOR Reduction (vph)	0	0	0	16	0	40
Lane Group Flow (vph)	24	575	322	5	97	40
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.6	16.2	11.6	11.6	24.5	24.5
Effective Green, g (s)	0.6	16.2	11.6	11.6	24.5	24.5
Actuated g/C Ratio	0.01	0.33	0.24	0.24	0.50	0.50
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	22	1692	1211	369	890	786
v/s Ratio Prot	0.01	c0.11	0.06		c0.05	
v/s Ratio Perm				0.00		0.03
v/c Ratio	1.09	0.34	0.27	0.01	0.11	0.05
Uniform Delay, d1	24.1	12.2	15.1	14.2	6.4	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	221.9	0.1	0.1	0.0	0.2	0.1
Delay (s)	246.0	12.3	15.2	14.2	6.6	6.3
Level of Service	F	B	B	B	A	A
Approach Delay (s)		21.7	15.1		6.5	
Approach LOS		C	B		A	

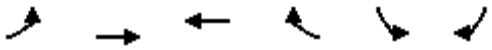
Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	419	33	242	143	200	23	648	370	656	874	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.91	0.88	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	195	441	35	255	151	211	24	682	389	691	920	164
RTOR Reduction (vph)	0	0	29	0	0	168	0	0	278	0	0	79
Lane Group Flow (vph)	195	441	6	255	151	43	24	682	111	691	920	85
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.2	14.7	14.7	9.8	16.3	16.3	1.8	23.3	23.3	21.4	42.9	42.9
Effective Green, g (s)	9.2	16.7	15.7	10.8	18.3	17.3	2.8	25.3	24.3	22.4	44.9	43.9
Actuated g/C Ratio	0.11	0.20	0.18	0.13	0.21	0.20	0.03	0.30	0.29	0.26	0.53	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	191	997	292	435	1092	321	58	1510	795	465	2680	816
v/s Ratio Prot	c0.11	c0.09		0.07	0.03		0.01	c0.13		c0.39	0.18	
v/s Ratio Perm			0.00			0.03			0.04			0.05
v/c Ratio	1.02	0.44	0.02	0.59	0.14	0.13	0.41	0.45	0.14	1.49	0.34	0.10
Uniform Delay, d1	38.0	30.2	28.5	35.1	27.1	27.8	40.4	24.3	22.7	31.4	11.6	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	70.7	0.3	0.0	2.0	0.1	0.2	4.7	0.2	0.1	230.0	0.1	0.1
Delay (s)	108.7	30.5	28.5	37.1	27.1	28.0	45.1	24.5	22.7	261.4	11.7	10.6
Level of Service	F	C	C	D	C	C	D	C	C	F	B	B
Approach Delay (s)		53.1			31.6			24.4			108.8	
Approach LOS		D			C			C			F	

Intersection Summary			
HCM Average Control Delay	66.1	HCM Level of Service	E
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	85.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	57	1379	623	6	60	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1547	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1547	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	1452	656	6	63	12
RTOR Reduction (vph)	0	0	0	4	0	7
Lane Group Flow (vph)	60	1452	656	2	63	5
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.4	26.5	19.1	19.1	22.2	22.2
Effective Green, g (s)	3.4	26.5	19.1	19.1	22.2	22.2
Actuated g/C Ratio	0.06	0.47	0.34	0.34	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	106	2377	1713	521	693	612
v/s Ratio Prot	0.03	c0.29	0.13		c0.04	
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.57	0.61	0.38	0.00	0.09	0.01
Uniform Delay, d1	25.9	11.3	14.3	12.5	10.9	10.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	0.5	0.1	0.0	0.3	0.0
Delay (s)	32.7	11.7	14.5	12.5	11.1	10.6
Level of Service	C	B	B	B	B	B
Approach Delay (s)		12.6	14.4		11.0	
Approach LOS		B	B		B	

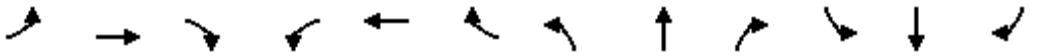
Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1361	79	1	650	59	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1547	1770	5085	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1547	1770	5085	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1433	83	1	684	62	1
RTOR Reduction (vph)	0	51	0	0	0	1
Lane Group Flow (vph)	1433	32	1	684	62	0
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	21.5	21.5	0.7	26.2	21.2	21.2
Effective Green, g (s)	21.5	21.5	0.7	26.2	21.2	21.2
Actuated g/C Ratio	0.39	0.39	0.01	0.47	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1973	600	22	2405	677	598
v/s Ratio Prot	c0.28		0.00	c0.13	c0.04	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.73	0.05	0.05	0.28	0.09	0.00
Uniform Delay, d1	14.4	10.6	27.0	8.9	10.9	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0	0.9	0.1	0.3	0.0
Delay (s)	15.8	10.6	27.9	9.0	11.2	10.6
Level of Service	B	B	C	A	B	B
Approach Delay (s)	15.5			9.0	11.2	
Approach LOS	B			A	B	

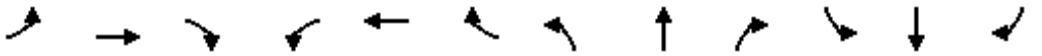
Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	1282	75	90	506	79	74	68	126	367	92	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	1349	79	95	533	83	78	72	133	386	97	116
RTOR Reduction (vph)	0	0	42	0	0	53	0	0	113	0	0	79
Lane Group Flow (vph)	56	1349	37	95	533	30	78	72	20	386	97	37
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.1	32.4	32.4	7.1	33.4	33.4	6.8	13.2	13.2	23.3	29.7	29.7
Effective Green, g (s)	7.1	34.4	33.4	8.1	35.4	34.4	7.8	14.2	14.2	24.3	30.7	30.7
Actuated g/C Ratio	0.07	0.36	0.35	0.08	0.37	0.36	0.08	0.15	0.15	0.25	0.32	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	131	1822	551	149	1875	567	144	276	234	448	596	506
v/s Ratio Prot	0.03	c0.27		c0.05	0.10		0.04	c0.04		c0.22	0.05	
v/s Ratio Perm			0.02			0.02			0.01			0.02
v/c Ratio	0.43	0.74	0.07	0.64	0.28	0.05	0.54	0.26	0.08	0.86	0.16	0.07
Uniform Delay, d1	42.5	26.9	20.9	42.5	21.4	20.1	42.4	36.2	35.3	34.2	23.4	22.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	1.7	0.1	8.6	0.1	0.0	4.1	0.5	0.2	15.5	0.1	0.1
Delay (s)	44.7	28.6	21.0	51.2	21.5	20.2	46.5	36.8	35.4	49.8	23.6	22.8
Level of Service	D	C	C	D	C	C	D	D	D	D	C	C
Approach Delay (s)		28.8			25.3			38.8			40.3	
Approach LOS		C			C			D			D	

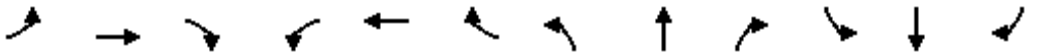
Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1467	114	291	485	90	79	700	613	365	974	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1553	3433	5085	1554	3433	3539	1558	3433	3539	1558
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1553	3433	5085	1554	3433	3539	1558	3433	3539	1558
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	1544	120	306	511	95	83	737	645	384	1025	151
RTOR Reduction (vph)	0	0	83	0	0	72	0	0	175	0	0	96
Lane Group Flow (vph)	105	1544	37	306	511	23	83	737	470	384	1025	55
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.7	25.9	25.9	9.0	22.2	22.2	7.1	31.8	31.8	9.0	33.7	33.7
Effective Green, g (s)	13.7	28.9	26.9	10.0	25.2	23.2	8.1	35.2	32.8	10.0	37.1	34.7
Actuated g/C Ratio	0.14	0.30	0.28	0.10	0.26	0.24	0.08	0.37	0.34	0.10	0.39	0.36
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	491	1536	437	359	1339	377	291	1302	534	359	1372	565
v/s Ratio Prot	0.03	c0.30		c0.09	0.10		0.02	0.21		c0.11	0.29	
v/s Ratio Perm			0.02			0.01			c0.30			0.04
v/c Ratio	0.21	1.01	0.09	0.85	0.38	0.06	0.29	0.57	0.88	1.07	0.75	0.10
Uniform Delay, d1	36.2	33.4	25.3	42.1	28.9	27.9	41.1	24.2	29.6	42.9	25.3	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	24.2	0.1	16.9	0.3	0.1	0.2	0.9	16.2	67.2	2.7	0.1
Delay (s)	36.3	57.6	25.5	59.0	29.1	28.0	41.3	25.0	45.8	110.1	27.9	20.3
Level of Service	D	E	C	E	C	C	D	C	D	F	C	C
Approach Delay (s)		54.2			39.0			35.1			47.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	45.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	95.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

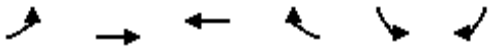


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2433	0	0	850	95	0	0	0	239	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Util. Factor	1.00	0.91			0.91	1.00				1.00		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				1770		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	2561	0	0	895	100	0	0	0	252	0	8
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	0	6
Lane Group Flow (vph)	7	2561	0	0	895	63	0	0	0	252	0	2
Turn Type	Prot		Perm	Perm		Perm				Prot		custom
Protected Phases	7	4			8					6		
Permitted Phases			4	8		8						6
Actuated Green, G (s)	1.1	48.9			43.8	43.8				15.6		15.6
Effective Green, g (s)	2.1	51.9			46.8	46.8				16.6		16.6
Actuated g/C Ratio	0.03	0.70			0.63	0.63				0.22		0.22
Clearance Time (s)	4.0	6.0			6.0	6.0				4.0		4.0
Vehicle Extension (s)	2.0	4.1			4.1	4.1				2.0		2.0
Lane Grp Cap (vph)	50	3542			3194	994				394		353
v/s Ratio Prot	0.00	c0.50			0.18					c0.14		
v/s Ratio Perm						0.04						0.00
v/c Ratio	0.14	0.72			0.28	0.06				0.64		0.01
Uniform Delay, d1	35.3	6.9			6.2	5.4				26.2		22.5
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	0.5	0.8			0.1	0.0				2.5		0.0
Delay (s)	35.8	7.7			6.3	5.4				28.7		22.5
Level of Service	D	A			A	A				C		C
Approach Delay (s)		7.8			6.2			0.0			28.6	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2697	13	64	925	18	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2839	14	67	974	19	104
RTOR Reduction (vph)	0	3	0	0	0	90
Lane Group Flow (vph)	2839	11	67	974	19	14
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.3	55.3	7.0	66.3	11.0	11.0
Effective Green, g (s)	58.3	58.3	8.0	69.3	12.0	12.0
Actuated g/C Ratio	0.66	0.66	0.09	0.79	0.14	0.14
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	3361	1046	161	3995	241	215
v/s Ratio Prot	c0.56		c0.04	0.19	c0.01	
v/s Ratio Perm		0.01				0.01
v/c Ratio	0.84	0.01	0.42	0.24	0.08	0.07
Uniform Delay, d1	11.5	5.1	37.9	2.5	33.3	33.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.0	0.6	0.0	0.1	0.0
Delay (s)	13.7	5.1	38.5	2.6	33.3	33.3
Level of Service	B	A	D	A	C	C
Approach Delay (s)	13.6			4.9	33.3	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	88.2	Sum of lost time (s)	9.9
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



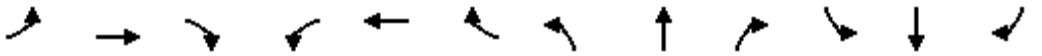
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	2756	904	168	395	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1536	1770	1558
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1536	1770	1558
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	2901	952	177	416	48
RTOR Reduction (vph)	0	0	0	74	0	35
Lane Group Flow (vph)	11	2901	952	103	416	13
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.1	51.6	46.5	46.5	22.9	22.9
Effective Green, g (s)	2.1	54.6	49.5	49.5	23.9	23.9
Actuated g/C Ratio	0.02	0.64	0.58	0.58	0.28	0.28
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	44	3251	2947	890	495	436
v/s Ratio Prot	0.01	c0.57	0.19		c0.24	
v/s Ratio Perm				0.07		0.01
v/c Ratio	0.25	0.89	0.32	0.12	0.84	0.03
Uniform Delay, d1	40.9	12.9	9.3	8.1	29.0	22.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	3.6	0.1	0.1	11.7	0.0
Delay (s)	42.0	16.6	9.4	8.2	40.7	22.3
Level of Service	D	B	A	A	D	C
Approach Delay (s)		16.7	9.2		38.8	
Approach LOS		B	A		D	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	85.4	Sum of lost time (s)	6.9
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

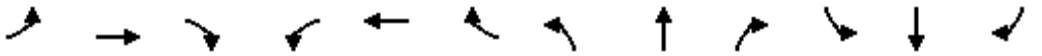
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	117	2777	254	28	971	179	36	5	1	119	93	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.6	3.6	3.6	3.9	3.9	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1681	1704	1583	1681	1713	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1681	1704	1583	1681	1713	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	123	2923	267	29	1022	188	38	5	1	125	98	25
RTOR Reduction (vph)	0	0	43	0	0	76	0	0	1	0	6	0
Lane Group Flow (vph)	123	2923	224	29	1022	112	21	22	0	112	130	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	13.9	92.4	92.4	4.8	83.3	83.3	9.6	9.6	9.6	18.7	18.7	
Effective Green, g (s)	14.9	95.4	95.4	5.8	86.3	86.3	10.6	10.6	10.6	19.7	19.7	
Actuated g/C Ratio	0.10	0.66	0.66	0.04	0.60	0.60	0.07	0.07	0.07	0.14	0.14	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.6	4.6	4.6	4.9	4.9	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	4.5	4.5	4.5	3.1	3.1	
Lane Grp Cap (vph)	182	3346	1042	71	3026	942	123	125	116	228	233	
v/s Ratio Prot	c0.07	c0.57		0.02	0.20		0.01	c0.01		0.07	c0.08	
v/s Ratio Perm			0.14			0.07			0.00			
v/c Ratio	0.68	0.87	0.21	0.41	0.34	0.12	0.17	0.18	0.00	0.49	0.56	
Uniform Delay, d1	62.7	19.9	9.9	67.9	14.9	12.8	63.1	63.1	62.3	58.0	58.6	
Progression Factor	1.00	1.00	1.00	1.29	0.27	0.40	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.6	3.5	0.5	1.4	0.3	0.2	1.1	1.2	0.0	1.7	2.9	
Delay (s)	70.3	23.5	10.4	88.9	4.4	5.4	64.2	64.3	62.3	59.7	61.5	
Level of Service	E	C	B	F	A	A	E	E	E	E	E	
Approach Delay (s)		24.1			6.5			64.2			60.7	
Approach LOS		C			A			E			E	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



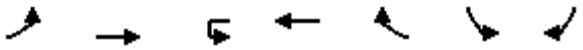
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	2626	120	264	980	124	169	136	520	175	152	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.7	4.7	3.0	2.7	2.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	2764	126	278	1032	131	178	143	547	184	160	46
RTOR Reduction (vph)	0	0	58	0	0	63	0	0	122	0	0	41
Lane Group Flow (vph)	46	2764	68	278	1032	68	178	143	425	184	160	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.2	75.4	75.4	12.0	72.2	72.2	24.6	26.3	26.3	11.6	13.3	13.3
Effective Green, g (s)	16.2	78.4	78.4	13.0	75.2	75.2	25.6	29.3	27.3	12.6	16.3	16.3
Actuated g/C Ratio	0.11	0.54	0.54	0.09	0.52	0.52	0.18	0.20	0.19	0.09	0.11	0.11
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.8	3.8	2.0	3.8	3.8
Lane Grp Cap (vph)	384	2749	856	308	3323	821	606	715	298	298	398	178
v/s Ratio Prot	0.01	c0.54		c0.08	0.16		0.05	0.04		c0.05	c0.05	
v/s Ratio Perm			0.04			0.04			c0.27			0.00
v/c Ratio	0.12	1.01	0.08	0.90	0.31	0.08	0.29	0.20	1.43	0.62	0.40	0.03
Uniform Delay, d1	58.0	33.3	16.0	65.4	20.0	17.6	51.8	48.1	58.9	63.9	59.8	57.3
Progression Factor	0.81	0.69	1.39	0.80	0.77	1.34	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	13.8	0.1	26.9	0.2	0.2	0.1	0.2	210.6	2.7	0.9	0.1
Delay (s)	46.8	36.9	22.4	79.1	15.6	23.8	51.9	48.3	269.4	66.5	60.7	57.4
Level of Service	D	D	C	E	B	C	D	D	F	E	E	E
Approach Delay (s)		36.5			28.6			188.4			63.1	
Approach LOS		D			C			F			E	

Intersection Summary			
HCM Average Control Delay	59.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



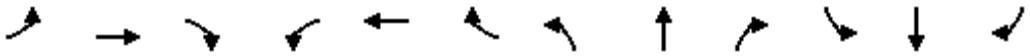
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	3235	0	184	1383	76	0	0	58	14	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0		4.0	2.0	4.0			4.0	4.0		
Lane Util. Factor		0.86		1.00	0.86	1.00			1.00	1.00		
Frt		1.00		1.00	1.00	0.85			0.85	1.00		
Flt Protected		1.00		0.95	1.00	1.00			1.00	0.95		
Satd. Flow (prot)		6408		1770	6408	1583			1583	1770		
Flt Permitted		1.00		0.95	1.00	1.00			1.00	0.95		
Satd. Flow (perm)		6408		1770	6408	1583			1583	1770		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	3405	0	194	1456	80	0	0	61	15	0	0
RTOR Reduction (vph)	0	0	0	0	0	15	0	0	55	0	0	0
Lane Group Flow (vph)	0	3405	0	194	1456	65	0	0	6	15	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		96.0		13.0	114.0	114.0			12.8	3.2		
Effective Green, g (s)		99.0		14.0	117.0	115.0			13.8	4.2		
Actuated g/C Ratio		0.68		0.10	0.81	0.79			0.10	0.03		
Clearance Time (s)		5.0		5.0	5.0	5.0			5.0	5.0		
Vehicle Extension (s)		3.0		3.0	3.0	3.0			3.0	3.0		
Lane Grp Cap (vph)		4375		171	5171	1255			151	51		
v/s Ratio Prot		c0.53		c0.11	0.23					c0.01		
v/s Ratio Perm						0.04			c0.00			
v/c Ratio		0.78		1.13	0.28	0.05			0.04	0.29		
Uniform Delay, d1		15.6		65.5	3.5	3.2			59.6	68.9		
Progression Factor		0.45		0.67	2.22	3.66			1.00	1.00		
Incremental Delay, d2		0.1		107.7	0.0	0.0			0.1	3.2		
Delay (s)		7.2		151.4	7.8	11.9			59.7	72.2		
Level of Service		A		F	A	B			E	E		
Approach Delay (s)		7.2			24.1			59.7			72.2	
Approach LOS		A			C			E			E	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	18	3289	0	1613	33	592	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6		2.6	2.6	3.9	3.9
Lane Util. Factor	1.00	0.86		0.86	1.00	0.97	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	6408		6408	1583	3433	1583
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	6408		6408	1583	3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	3462	0	1698	35	623	32
RTOR Reduction (vph)	0	0	0	0	11	0	25
Lane Group Flow (vph)	19	3462	0	1698	24	623	7
Turn Type	Prot		Prot		Perm		Perm
Protected Phases	7	4	3	8		6	
Permitted Phases					8		6
Actuated Green, G (s)	4.2	105.1		96.9	96.9	29.0	29.0
Effective Green, g (s)	5.2	108.5		100.3	100.3	30.0	30.0
Actuated g/C Ratio	0.04	0.75		0.69	0.69	0.21	0.21
Clearance Time (s)	4.0	6.0		6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.8		4.8	4.8	2.0	2.0
Lane Grp Cap (vph)	63	4795		4433	1095	710	328
v/s Ratio Prot	0.01	c0.54		0.26		c0.18	
v/s Ratio Perm					0.02		0.00
v/c Ratio	0.30	0.72		0.38	0.02	0.88	0.02
Uniform Delay, d1	68.1	10.0		9.4	7.0	55.7	45.8
Progression Factor	1.11	0.63		0.46	0.14	1.00	1.00
Incremental Delay, d2	0.6	0.6		0.1	0.0	11.5	0.0
Delay (s)	76.5	7.0		4.4	1.0	67.2	45.8
Level of Service	E	A		A	A	E	D
Approach Delay (s)		7.3		4.3		66.2	
Approach LOS		A		A		E	

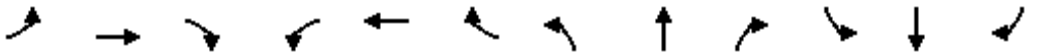
Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	3726	100	68	1646	60	10	10	30	10	10	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.86	1.00	1.00	0.86	1.00	1.00	1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99		1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	
Satd. Flow (prot)	1770	6408	1583	1770	6408	1583	1770	1863	1561		1732	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	
Satd. Flow (perm)	1770	6408	1583	1770	6408	1583	1770	1863	1561		1732	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	3922	105	72	1733	63	11	11	32	11	11	16
RTOR Reduction (vph)	0	0	19	0	0	21	0	0	27	0	15	0
Lane Group Flow (vph)	58	3922	86	72	1733	42	11	11	5	0	23	0
Confl. Peds. (#/hr)							10		10			
Turn Type	Prot		Perm	Prot		Perm	Split		pm+ov	Split		
Protected Phases	7	4		3	8		6	6	3	2	2	
Permitted Phases			4			8			6			
Actuated Green, G (s)	9.2	93.4	93.4	12.0	96.2	96.2	10.0	10.0	22.0		10.1	
Effective Green, g (s)	9.2	93.4	93.4	12.0	96.2	96.2	10.0	10.0	22.0		10.1	
Actuated g/C Ratio	0.06	0.64	0.64	0.08	0.66	0.66	0.07	0.07	0.15		0.07	
Clearance Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	112	4128	1020	146	4251	1050	122	128	285		121	
v/s Ratio Prot	0.03	c0.61		c0.04	c0.27		c0.01	0.01	0.00		c0.01	
v/s Ratio Perm			0.05			0.03			0.00			
v/c Ratio	0.52	0.95	0.08	0.49	0.41	0.04	0.09	0.09	0.02		0.19	
Uniform Delay, d1	65.8	23.7	9.7	63.6	11.3	8.4	63.2	63.2	52.3		63.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	4.0	6.4	0.2	2.6	0.3	0.1	0.3	0.3	0.0		0.8	
Delay (s)	69.8	30.1	9.9	66.2	11.5	8.5	63.6	63.5	52.3		64.4	
Level of Service	E	C	A	E	B	A	E	E	D		E	
Approach Delay (s)		30.2			13.6			56.9			64.4	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

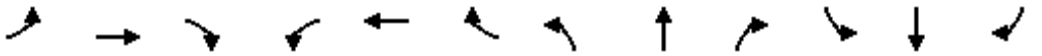


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	707	2483	861	155	1310	418	256	485	195	181	529	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6	2.6	3.0	2.6	2.6	3.0	2.6	3.0	3.0	1.9	1.9
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.94	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	4990	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	4990	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	744	2614	906	163	1379	440	269	511	205	191	557	219
RTOR Reduction (vph)	0	0	127	0	0	138	0	0	0	0	0	179
Lane Group Flow (vph)	744	2614	779	163	1379	302	269	511	205	191	557	40
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			2
Actuated Green, G (s)	42.0	79.9	79.9	10.6	48.5	48.5	12.0	22.5	145.0	12.0	23.2	23.2
Effective Green, g (s)	43.0	83.3	83.3	11.6	51.9	51.9	13.0	25.9	145.0	13.0	26.6	26.6
Actuated g/C Ratio	0.30	0.57	0.57	0.08	0.36	0.36	0.09	0.18	1.00	0.09	0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.4		2.0	6.0	6.0
Lane Grp Cap (vph)	1018	3681	909	275	2294	567	447	632	1583	308	933	290
v/s Ratio Prot	0.22	0.41		0.05	c0.22		0.05	c0.14		c0.06	0.11	
v/s Ratio Perm			c0.49			0.19			0.13			0.03
v/c Ratio	0.73	0.71	0.86	0.59	0.60	0.53	0.60	0.81	0.13	0.62	0.60	0.14
Uniform Delay, d1	45.8	22.2	25.9	64.4	38.1	36.9	63.5	57.2	0.0	63.6	54.3	49.6
Progression Factor	0.80	0.67	0.53	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.8	7.4	2.3	1.2	3.6	1.6	7.7	0.2	2.8	1.9	0.6
Delay (s)	38.5	15.6	21.1	66.7	39.3	40.5	65.1	64.9	0.2	66.4	56.2	50.2
Level of Service	D	B	C	E	D	D	E	E	A	E	E	D
Approach Delay (s)		20.7			41.8			51.5			56.9	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	10.8
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

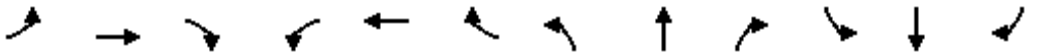
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1673	47	118	1314	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	4.0		5.0
Lane Util. Factor	0.86	1.00	1.00	0.91		1.00
Frt	1.00	0.85	1.00	1.00		0.86
Flt Protected	1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)	6408	1583	1770	5085		1611
Flt Permitted	1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)	6408	1583	1770	5085		1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1761	49	124	1383	0	26
RTOR Reduction (vph)	0	9	0	0	0	23
Lane Group Flow (vph)	1761	40	124	1383	0	3
Turn Type		Perm	Prot			Over
Protected Phases	4		3	Free		3
Permitted Phases		4				
Actuated Green, G (s)	119.5	119.5	15.5	145.0		15.5
Effective Green, g (s)	119.5	119.5	15.5	145.0		15.5
Actuated g/C Ratio	0.82	0.82	0.11	1.00		0.11
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	5281	1305	189	5085		172
v/s Ratio Prot	c0.27		c0.07	0.27		0.00
v/s Ratio Perm		0.03				
v/c Ratio	0.33	0.03	0.66	0.27		0.02
Uniform Delay, d1	3.1	2.3	62.2	0.0		57.9
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.0	0.0	7.9	0.1		0.0
Delay (s)	3.1	2.3	70.1	0.1		58.0
Level of Service	A	A	E	A		E
Approach Delay (s)	3.1			5.9	58.0	
Approach LOS	A			A	E	

Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1253	445	509	980	400	317	0	657	3	616	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	6.0	2.0	4.0	2.0	4.0		4.0	6.0	4.0	2.0
Lane Util. Factor		0.86	1.00	0.97	0.91	1.00	0.97		0.88	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		6408	1583	3433	5085	1583	3433		2787	1770	3539	1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		6408	1583	3433	5085	1583	3433		2787	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1319	468	536	1032	421	334	0	692	3	648	142
RTOR Reduction (vph)	0	0	188	0	0	0	0	0	445	0	0	0
Lane Group Flow (vph)	0	1319	280	536	1032	421	334	0	247	3	648	142
Turn Type			Prot	Prot		Free	Prot		custom	Split		Free
Protected Phases		4	4	3	8		2		2 3	1	1	
Permitted Phases						Free						Free
Actuated Green, G (s)		47.8	47.8	26.3	78.1	145.0	17.4		49.7	31.5	31.5	145.0
Effective Green, g (s)		49.8	47.8	28.3	80.1	145.0	19.4		51.7	31.5	33.5	145.0
Actuated g/C Ratio		0.34	0.33	0.20	0.55	1.00	0.13		0.36	0.22	0.23	1.00
Clearance Time (s)		6.0	6.0	4.0	6.0		6.0			6.0	6.0	
Vehicle Extension (s)		4.8	4.8	2.0	4.8		2.0			4.7	4.7	
Lane Grp Cap (vph)		2201	522	670	2809	1583	459		994	385	818	1583
v/s Ratio Prot		c0.21	0.18	c0.16	0.20		c0.10		0.09	0.00	c0.18	
v/s Ratio Perm						0.27						0.09
v/c Ratio		0.60	0.54	0.80	0.37	0.27	0.73		0.25	0.01	0.79	0.09
Uniform Delay, d1		39.4	39.6	55.7	18.2	0.0	60.3		32.9	44.5	52.5	0.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.6	1.8	6.4	0.4	0.4	4.8		0.0	0.0	6.0	0.1
Delay (s)		40.0	41.4	62.1	18.6	0.4	65.1		33.0	44.5	58.4	0.1
Level of Service		D	D	E	B	A	E		C	D	E	A
Approach Delay (s)		40.4			26.5			43.4			47.9	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

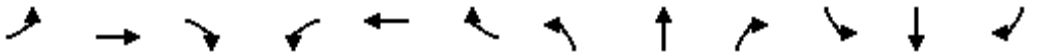


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	462	604	5	199	21	360	42	2	71	128	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	486	636	5	209	22	379	44	2	75	135	0
RTOR Reduction (vph)	0	0	436	0	0	13	0	0	1	0	0	0
Lane Group Flow (vph)	0	486	200	5	209	9	379	44	1	75	135	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		19.5	19.5	0.5	25.0	25.0	12.3	20.5	20.5	4.7	12.9	
Effective Green, g (s)		21.5	20.5	1.5	27.0	26.0	13.3	22.5	21.5	5.7	14.9	
Actuated g/C Ratio		0.33	0.31	0.02	0.41	0.40	0.20	0.35	0.33	0.09	0.23	
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1167	498	41	1466	631	700	1221	522	155	809	
v/s Ratio Prot		c0.14		0.00	c0.06		c0.11	0.01		0.04	c0.04	
v/s Ratio Perm			0.13			0.01			0.00			
v/c Ratio		0.42	0.40	0.12	0.14	0.01	0.54	0.04	0.00	0.48	0.17	
Uniform Delay, d1		17.0	17.5	31.2	11.9	11.8	23.2	14.2	14.7	28.3	20.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.5	1.3	0.0	0.0	0.9	0.0	0.0	2.4	0.1	
Delay (s)		17.2	18.1	32.5	11.9	11.9	24.1	14.2	14.7	30.7	20.3	
Level of Service		B	B	C	B	B	C	B	B	C	C	
Approach Delay (s)		17.7			12.4			23.0			24.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	13.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

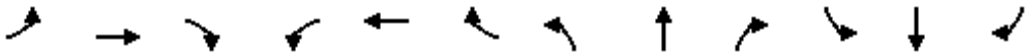
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	526	12	40	213	12	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3539	1583	1770	3539	1770	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (perm)	3539	1583	1770	3539	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	554	13	42	224	13	0
RTOR Reduction (vph)	0	9	0	0	0	0
Lane Group Flow (vph)	554	4	42	224	13	0
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	13.1	13.1	2.2	20.3	8.1	
Effective Green, g (s)	13.1	13.1	2.2	20.3	8.1	
Actuated g/C Ratio	0.34	0.34	0.06	0.53	0.21	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1207	540	101	1871	373	
v/s Ratio Prot	c0.16		c0.02	0.06		
v/s Ratio Perm		0.00			c0.01	
v/c Ratio	0.46	0.01	0.42	0.12	0.03	
Uniform Delay, d1	9.9	8.4	17.5	4.6	12.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.0	2.8	0.0	0.0	
Delay (s)	10.2	8.4	20.2	4.6	12.1	
Level of Service	B	A	C	A	B	
Approach Delay (s)	10.1			7.1	12.1	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	38.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



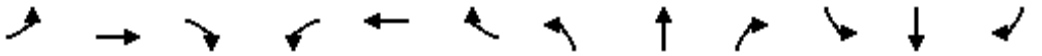
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	518	8	35	219	207	17	821	80	395	833	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	152	545	8	37	231	218	18	864	84	416	877	93
RTOR Reduction (vph)	0	0	6	0	0	175	0	0	51	0	0	48
Lane Group Flow (vph)	152	545	2	37	231	43	18	864	33	416	877	45
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.2	22.3	22.3	3.8	16.9	16.9	2.3	31.1	31.1	14.6	43.4	43.4
Effective Green, g (s)	10.2	24.3	23.3	4.8	18.9	17.9	3.3	33.1	32.1	15.6	45.4	44.4
Actuated g/C Ratio	0.11	0.26	0.25	0.05	0.21	0.19	0.04	0.36	0.35	0.17	0.49	0.48
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	381	1346	402	180	729	309	123	1276	554	583	2515	766
v/s Ratio Prot	c0.04	c0.11		0.01	0.07		0.01	c0.24		c0.12	0.17	
v/s Ratio Perm			0.00			0.03			0.02			0.03
v/c Ratio	0.40	0.40	0.01	0.21	0.32	0.14	0.15	0.68	0.06	0.71	0.35	0.06
Uniform Delay, d1	37.9	27.8	25.6	41.7	31.0	30.6	42.9	24.8	19.8	36.0	14.2	12.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	0.0	0.6	0.3	0.2	0.6	1.4	0.0	4.1	0.1	0.0
Delay (s)	38.6	28.0	25.6	42.2	31.2	30.8	43.4	26.3	19.9	40.1	14.3	12.6
Level of Service	D	C	C	D	C	C	D	C	B	D	B	B
Approach Delay (s)		30.3			31.9			26.0			21.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



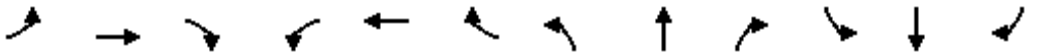
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	987	4	19	453	9	5	0	94	39	9	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.91	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	1770	1583		1770	1703	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	1770	1583		1770	1703	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1039	4	20	477	9	5	0	99	41	9	12
RTOR Reduction (vph)	0	0	2	0	0	4	0	79	0	0	11	0
Lane Group Flow (vph)	0	1039	2	20	477	5	5	20	0	41	10	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		22.3	22.3	0.4	26.7	26.7	7.7	9.9		1.2	3.4	
Effective Green, g (s)		22.3	22.3	0.4	26.7	26.7	7.7	9.9		1.2	3.4	
Actuated g/C Ratio		0.45	0.45	0.01	0.54	0.54	0.15	0.20		0.02	0.07	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1585	709	14	1897	849	274	315		43	116	
v/s Ratio Prot		c0.29		c0.01	0.13		0.00	c0.01		c0.02	0.01	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.66	0.00	1.43	0.25	0.01	0.02	0.06		0.95	0.08	
Uniform Delay, d1		10.7	7.6	24.7	6.2	5.4	17.8	16.2		24.3	21.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0	0.0	399.7	0.1	0.0	0.1	0.1		118.5	0.3	
Delay (s)		11.7	7.6	424.4	6.3	5.4	18.0	16.3		142.8	22.1	
Level of Service		B	A	F	A	A	B	B		F	C	
Approach Delay (s)		11.7			22.8			16.4			101.9	
Approach LOS		B			C			B			F	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	49.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	1061	12	104	520	153	26	155	208	22	225	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	3.0	4.7	4.7	3.0	4.3	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	1117	13	109	547	161	27	163	219	23	237	131
RTOR Reduction (vph)	0	0	5	0	0	95	0	0	173	0	0	101
Lane Group Flow (vph)	104	1117	8	109	547	66	27	163	46	23	237	30
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	7.0	29.0	29.0	7.2	29.2	29.2	3.7	14.4	14.4	3.7	15.7	15.7
Effective Green, g (s)	8.0	30.0	30.0	8.2	30.2	30.2	4.7	15.4	15.4	4.7	16.7	16.7
Actuated g/C Ratio	0.11	0.41	0.41	0.11	0.41	0.41	0.06	0.21	0.21	0.06	0.23	0.23
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.3	5.3	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	193	1448	648	198	1458	652	113	391	333	113	424	361
v/s Ratio Prot	0.06	c0.32		c0.06	0.15		c0.02	0.09		0.01	c0.13	
v/s Ratio Perm			0.00			0.04			0.03			0.02
v/c Ratio	0.54	0.77	0.01	0.55	0.38	0.10	0.24	0.42	0.14	0.20	0.56	0.08
Uniform Delay, d1	30.9	18.7	12.9	30.8	15.0	13.2	32.6	25.1	23.6	32.5	25.0	22.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	2.9	0.0	1.9	0.3	0.1	0.4	0.3	0.1	0.3	0.9	0.0
Delay (s)	32.4	21.6	12.9	32.7	15.3	13.3	33.0	25.3	23.6	32.9	26.0	22.3
Level of Service	C	C	B	C	B	B	C	C	C	C	C	C
Approach Delay (s)		22.4			17.2			24.9			25.1	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	13.7
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

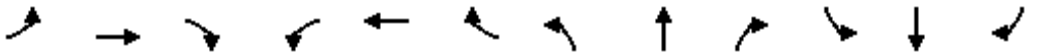


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1402	12	92	691	36	25	24	19	51	7	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	5.7	4.0	4.7	4.7	4.9	4.9	4.9	3.9	4.9	3.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	1476	13	97	727	38	26	25	20	54	7	13
RTOR Reduction (vph)	0	0	4	0	0	15	0	0	19	0	0	12
Lane Group Flow (vph)	26	1476	9	97	727	23	26	25	1	54	7	1
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	2.5	46.7	46.7	7.2	51.4	51.4	5.3	5.3	5.3	7.2	7.2	7.2
Effective Green, g (s)	3.5	47.7	46.7	7.2	52.4	52.4	5.3	5.3	5.3	8.2	7.2	8.2
Actuated g/C Ratio	0.04	0.56	0.54	0.08	0.61	0.61	0.06	0.06	0.06	0.10	0.08	0.10
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.9	4.9	4.9	4.9	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	72	1965	861	148	2159	966	109	115	98	169	156	151
v/s Ratio Prot	0.01	c0.42		c0.05	0.21		c0.01	0.01		c0.03	0.00	
v/s Ratio Perm			0.01			0.01			0.00			0.00
v/c Ratio	0.36	0.75	0.01	0.66	0.34	0.02	0.24	0.22	0.01	0.32	0.04	0.01
Uniform Delay, d1	40.1	14.6	9.0	38.1	8.2	6.6	38.4	38.3	37.8	36.2	36.2	35.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	1.9	0.0	7.7	0.2	0.0	0.4	0.3	0.0	0.4	0.0	0.0
Delay (s)	41.2	16.4	9.0	45.9	8.4	6.6	38.8	38.7	37.9	36.6	36.2	35.2
Level of Service	D	B	A	D	A	A	D	D	D	D	D	D
Approach Delay (s)		16.8			12.5			38.5			36.3	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	17.5
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

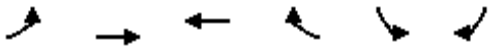
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1453	97	37	537	41	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1529	102	39	565	43	124
RTOR Reduction (vph)	0	44	0	0	0	106
Lane Group Flow (vph)	1529	58	39	565	43	18
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	31.8	31.8	1.3	38.1	8.1	8.1
Effective Green, g (s)	31.8	31.8	1.3	38.1	8.1	8.1
Actuated g/C Ratio	0.57	0.57	0.02	0.68	0.14	0.14
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2002	896	41	2399	255	228
v/s Ratio Prot	c0.43		c0.02	0.16	c0.02	
v/s Ratio Perm		0.04				0.01
v/c Ratio	0.76	0.06	0.95	0.24	0.17	0.08
Uniform Delay, d1	9.3	5.5	27.4	3.5	21.1	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.0	121.0	0.1	0.3	0.1
Delay (s)	11.1	5.5	148.4	3.5	21.4	21.0
Level of Service	B	A	F	A	C	C
Approach Delay (s)	10.8			12.9	21.1	
Approach LOS	B			B	C	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	56.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



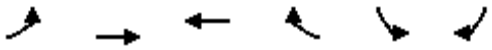
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	757	745	453	404	31	336	951	980	38	1182	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.94	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	4990	3501		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	4990	3501		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	797	784	477	425	33	354	1001	1032	40	1244	34
RTOR Reduction (vph)	0	0	152	0	5	0	0	0	194	0	0	22
Lane Group Flow (vph)	72	797	632	477	453	0	354	1001	838	40	1244	12
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	7.8	29.2	29.2	10.0	31.1		13.8	45.9	45.9	4.7	36.8	36.8
Effective Green, g (s)	8.8	31.7	31.7	11.0	33.6		14.8	49.3	49.3	5.7	40.2	40.2
Actuated g/C Ratio	0.08	0.29	0.29	0.10	0.31		0.14	0.45	0.45	0.05	0.37	0.37
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	276	1025	458	501	1074		464	2289	713	179	1867	581
v/s Ratio Prot	0.02	0.23		c0.10	0.13		c0.10	0.20		0.01	0.24	
v/s Ratio Perm			c0.40						c0.53			0.01
v/c Ratio	0.26	0.78	1.38	0.95	0.42		0.76	0.44	1.18	0.22	0.67	0.02
Uniform Delay, d1	47.3	35.7	38.9	49.0	30.2		45.7	20.6	30.1	49.8	29.0	22.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	4.2	184.2	28.2	0.4		6.6	0.3	93.5	0.2	1.2	0.0
Delay (s)	47.5	39.9	223.1	77.2	30.6		52.2	20.9	123.6	50.0	30.2	22.1
Level of Service	D	D	F	E	C		D	C	F	D	C	C
Approach Delay (s)		127.1			54.4			69.9			30.6	
Approach LOS		F			D			E			C	

Intersection Summary			
HCM Average Control Delay	74.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	109.5	Sum of lost time (s)	11.8
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



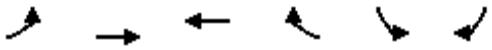
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	7	1729	792	72	204	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	1820	834	76	215	19
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	7	1820	834	76	215	19
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.4	40.9	35.8	64.3	13.4	64.3
Effective Green, g (s)	2.4	43.9	38.8	64.3	14.9	64.3
Actuated g/C Ratio	0.04	0.68	0.60	1.00	0.23	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	66	2416	2136	1583	410	1583
v/s Ratio Prot	0.00	c0.51	0.24		c0.12	
v/s Ratio Perm				0.05		0.01
v/c Ratio	0.11	0.75	0.39	0.05	0.52	0.01
Uniform Delay, d1	29.9	6.7	6.6	0.0	21.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.5	0.2	0.1	0.6	0.0
Delay (s)	30.2	8.1	6.8	0.1	22.2	0.0
Level of Service	C	A	A	A	C	A
Approach Delay (s)		8.2	6.3		20.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	5.5
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	7	1885	838	10	45	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.97	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3533		1738	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3533		1738	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	1984	882	11	47	14
RTOR Reduction (vph)	0	0	1	0	12	0
Lane Group Flow (vph)	7	1984	892	0	49	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.3	50.3	45.0		7.2	
Effective Green, g (s)	2.3	53.0	47.7		8.2	
Actuated g/C Ratio	0.03	0.79	0.71		0.12	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	61	2791	2508		212	
v/s Ratio Prot	0.00	c0.56	0.25		c0.03	
v/s Ratio Perm						
v/c Ratio	0.11	0.71	0.36		0.23	
Uniform Delay, d1	31.5	3.4	3.8		26.6	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.3	1.0	0.2		0.2	
Delay (s)	31.8	4.4	3.9		26.8	
Level of Service	C	A	A		C	
Approach Delay (s)		4.5	3.9		26.8	
Approach LOS		A	A		C	

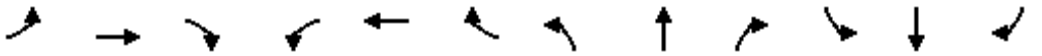
Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	67.2	Sum of lost time (s)	6.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	37	1956	843	14	2	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	5.7	3.0	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1527	1770	1549
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1527	1770	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	39	2059	887	15	2	39
RTOR Reduction (vph)	0	0	0	5	0	35
Lane Group Flow (vph)	39	2059	887	10	2	4
Confl. Peds. (#/hr)				10		10
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.7	51.2	44.5	44.5	5.5	5.5
Effective Green, g (s)	3.7	53.9	47.2	45.5	6.5	6.5
Actuated g/C Ratio	0.05	0.80	0.70	0.68	0.10	0.10
Clearance Time (s)	4.0	6.7	6.7	6.7	4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	4.3	2.0	2.0
Lane Grp Cap (vph)	97	2830	2478	1031	171	149
v/s Ratio Prot	0.02	c0.58	0.25		0.00	
v/s Ratio Perm				0.01		c0.00
v/c Ratio	0.40	0.73	0.36	0.01	0.01	0.03
Uniform Delay, d1	30.8	3.2	4.0	3.6	27.5	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	1.1	0.1	0.0	0.0	0.0
Delay (s)	31.8	4.3	4.2	3.6	27.6	27.6
Level of Service	C	A	A	A	C	C
Approach Delay (s)		4.8	4.2		27.6	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	7.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	1476	155	239	721	227	124	462	747	180	569	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	145	1554	163	252	759	239	131	486	786	189	599	154
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	145	1554	163	252	759	239	131	486	786	189	599	154
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	8.4	54.4	120.0	12.8	58.8	120.0	7.7	22.8	120.0	10.6	25.7	120.0
Effective Green, g (s)	9.4	57.4	120.0	13.8	61.8	120.0	8.7	25.8	120.0	11.6	28.7	120.0
Actuated g/C Ratio	0.08	0.48	1.00	0.12	0.51	1.00	0.07	0.22	1.00	0.10	0.24	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	242	2189	1400	355	2357	1400	224	685	1400	299	762	1400
v/s Ratio Prot	0.05	c0.34		c0.08	0.17		0.04	c0.15		0.06	c0.19	
v/s Ratio Perm			0.12			0.17			c0.56			0.11
v/c Ratio	0.60	0.71	0.12	0.71	0.32	0.17	0.58	0.71	0.56	0.63	0.79	0.11
Uniform Delay, d1	53.5	24.7	0.0	51.2	16.9	0.0	53.9	43.6	0.0	52.1	42.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	2.0	0.2	5.2	0.1	0.3	2.5	3.9	1.6	3.2	6.0	0.2
Delay (s)	56.1	26.7	0.2	56.4	17.1	0.3	56.4	47.5	1.6	55.3	48.8	0.2
Level of Service	E	C	A	E	B	A	E	D	A	E	D	A
Approach Delay (s)		26.7			21.8			22.6			42.1	
Approach LOS		C			C			C			D	

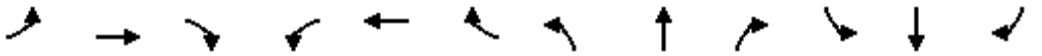
Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2586	9	114	945	212	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	3.6	3.6
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5082		1770	5085	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5082		1770	5085	1770	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2722	9	120	995	223	225
RTOR Reduction (vph)	0	0	0	0	0	125
Lane Group Flow (vph)	2731	0	120	995	223	100
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	74.9		11.2	90.1	19.3	19.3
Effective Green, g (s)	76.9		11.2	92.1	20.6	20.6
Actuated g/C Ratio	0.64		0.09	0.77	0.17	0.17
Clearance Time (s)	5.7		4.0	5.7	4.9	4.9
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	3257		165	3903	304	265
v/s Ratio Prot	c0.54		c0.07	0.20	c0.13	
v/s Ratio Perm						0.06
v/c Ratio	0.84		0.73	0.25	0.73	0.38
Uniform Delay, d1	16.7		52.9	4.0	47.1	44.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8		12.7	0.2	7.7	0.3
Delay (s)	19.5		65.6	4.2	54.8	44.3
Level of Service	B		E	A	D	D
Approach Delay (s)	19.5			10.8	49.5	
Approach LOS	B			B	D	

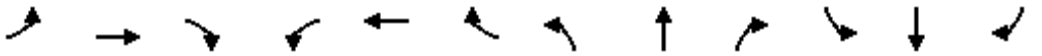
Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



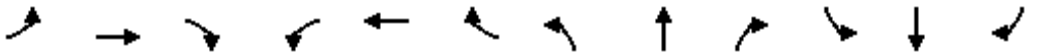
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	691	1916	105	536	842	89	85	1309	565	88	305	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	6.0	5.7	4.0	4.0	6.0	4.0	4.0	6.4	4.0
Lane Util. Factor	0.97	0.91	1.00	0.94	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	727	2017	111	564	886	94	89	1378	595	93	321	132
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	727	2017	111	564	886	94	89	1378	595	93	321	132
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	41.3	64.3	150.0	17.0	40.3	150.0	7.4	42.0	150.0	5.0	39.2	150.0
Effective Green, g (s)	41.3	64.3	150.0	17.0	40.3	150.0	7.4	42.0	150.0	5.0	39.2	150.0
Actuated g/C Ratio	0.28	0.43	1.00	0.11	0.27	1.00	0.05	0.28	1.00	0.03	0.26	1.00
Clearance Time (s)	5.7	5.7		6.0	5.7		4.0	6.0		4.0	6.4	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	3.7	
Lane Grp Cap (vph)	945	2180	1583	566	1366	1583	169	1424	1583	114	1675	1583
v/s Ratio Prot	0.21	c0.40		c0.11	0.17		0.03	c0.27		c0.03	0.05	
v/s Ratio Perm			0.07			0.06			c0.38			0.08
v/c Ratio	0.77	0.93	0.07	1.00	0.65	0.06	0.53	0.97	0.38	0.82	0.19	0.08
Uniform Delay, d1	50.0	40.6	0.0	66.5	48.6	0.0	69.6	53.3	0.0	72.0	43.1	0.0
Progression Factor	1.00	1.00	1.00	0.58	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	8.2	0.1	35.3	2.2	0.1	1.4	16.7	0.7	32.9	0.1	0.1
Delay (s)	53.4	48.8	0.1	73.9	38.2	0.1	71.0	70.0	0.7	105.0	43.1	0.1
Level of Service	D	D	A	E	D	A	E	E	A	F	D	A
Approach Delay (s)		48.1			48.9			50.0			43.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	48.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



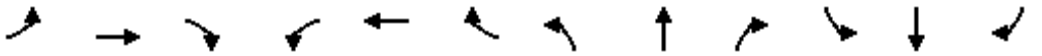
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	271	1950	88	157	1041	125	135	943	438	78	421	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0	3.4	3.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	285	2053	93	165	1096	132	142	993	461	82	443	345
RTOR Reduction (vph)	0	0	30	0	0	0	0	0	0	0	0	213
Lane Group Flow (vph)	285	2053	63	165	1096	132	142	993	461	82	443	132
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			Free			6
Actuated Green, G (s)	15.0	67.4	67.4	7.0	61.4	150.0	30.2	46.2	150.0	7.0	23.0	23.0
Effective Green, g (s)	16.0	70.4	70.4	10.4	64.8	150.0	31.2	49.6	150.0	8.0	26.0	26.0
Actuated g/C Ratio	0.11	0.47	0.47	0.07	0.43	1.00	0.21	0.33	1.00	0.05	0.17	0.17
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1		2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	366	2387	743	238	2768	1583	714	1170	1583	183	881	274
v/s Ratio Prot	0.08	c0.40		c0.05	0.17		0.04	c0.28		0.02	c0.09	
v/s Ratio Perm			0.04			0.08			0.29			0.08
v/c Ratio	0.78	0.86	0.09	0.69	0.40	0.08	0.20	0.85	0.29	0.45	0.50	0.48
Uniform Delay, d1	65.3	35.4	22.0	68.2	29.2	0.0	49.1	46.7	0.0	68.9	56.1	55.9
Progression Factor	1.14	0.34	0.03	1.18	1.27	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	2.5	0.1	6.6	0.1	0.1	0.1	6.3	0.5	0.6	0.7	2.1
Delay (s)	79.8	14.5	0.7	87.0	37.3	0.1	49.1	53.0	0.5	69.5	56.9	58.0
Level of Service	E	B	A	F	D	A	D	D	A	E	E	E
Approach Delay (s)		21.6			39.7			37.5			58.5	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



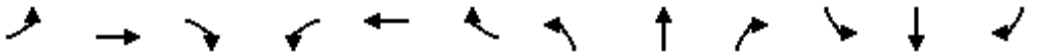
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	2372	19	40	1202	73	45	39	35	106	2	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	2497	20	42	1265	77	47	41	37	112	2	28
RTOR Reduction (vph)	0	0	4	0	0	23	0	0	35	0	0	26
Lane Group Flow (vph)	31	2497	16	42	1265	54	47	41	2	112	2	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	102.7	102.7	7.8	105.5	105.5	10.6	8.7	8.7	13.1	10.3	10.3
Effective Green, g (s)	5.0	102.7	102.7	7.8	105.5	105.5	10.6	8.7	8.7	13.1	10.3	10.3
Actuated g/C Ratio	0.03	0.68	0.68	0.05	0.70	0.70	0.07	0.06	0.06	0.09	0.07	0.07
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.5	2.5	2.0	3.1	3.1
Lane Grp Cap (vph)	59	3482	1084	92	3576	1113	125	108	92	155	128	109
v/s Ratio Prot	0.02	c0.49		c0.02	0.25		0.03	c0.02		c0.06	0.00	
v/s Ratio Perm			0.01			0.03			0.00			0.00
v/c Ratio	0.53	0.72	0.01	0.46	0.35	0.05	0.38	0.38	0.02	0.72	0.02	0.02
Uniform Delay, d1	71.3	14.7	7.5	69.0	8.8	6.8	66.5	68.1	66.6	66.7	65.1	65.1
Progression Factor	1.35	0.37	0.03	0.86	0.43	0.31	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.8	0.0	1.1	0.1	0.0	0.7	1.6	0.1	13.1	0.1	0.1
Delay (s)	98.5	6.3	0.2	60.4	3.9	2.2	67.2	69.7	66.7	79.8	65.2	65.2
Level of Service	F	A	A	E	A	A	E	E	E	E	E	E
Approach Delay (s)		7.3			5.5			67.9			76.7	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



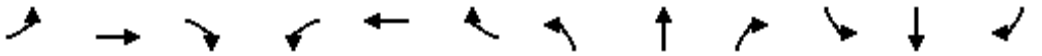
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	1388	1063	1098	817	186	560	1024	494	159	968	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.7	3.0	2.0	4.6	3.0	4.7	-0.4	3.0
Lane Util. Factor	0.94	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4990	3539	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4990	3539	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	1461	1119	1156	860	196	589	1078	520	167	1019	38
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	31	1461	1119	1156	860	196	589	1078	520	167	1019	38
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.4	48.0	150.0	36.0	78.9	150.0	25.0	28.4	150.0	13.9	25.0	150.0
Effective Green, g (s)	6.4	51.0	150.0	37.0	81.9	150.0	26.0	31.8	150.0	14.9	28.4	150.0
Actuated g/C Ratio	0.04	0.34	1.00	0.25	0.55	1.00	0.17	0.21	1.00	0.10	0.19	1.00
Clearance Time (s)	4.0	6.0		4.0	5.7		3.0	8.0		5.7	3.0	
Vehicle Extension (s)	2.0	4.1		3.0	4.5		4.1	4.1		4.1	4.1	
Lane Grp Cap (vph)	213	1203	1583	847	2776	1583	595	1078	1583	341	963	1583
v/s Ratio Prot	0.01	c0.41		c0.34	0.17		c0.17	0.21		0.05	c0.20	
v/s Ratio Perm			0.71			0.12			0.33			0.02
v/c Ratio	0.15	1.21	0.71	1.36	0.31	0.12	0.99	1.00	0.33	0.49	1.06	0.02
Uniform Delay, d1	69.2	49.5	0.0	56.5	18.6	0.0	61.9	59.1	0.0	64.0	60.8	0.0
Progression Factor	0.73	0.76	1.00	0.69	0.76	1.00	0.51	0.62	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	102.2	1.9	170.6	0.2	0.1	27.8	22.7	0.4	1.6	45.7	0.0
Delay (s)	50.3	139.9	1.9	209.7	14.4	0.1	59.2	59.4	0.4	65.5	106.5	0.0
Level of Service	D	F	A	F	B	A	E	E	A	E	F	A
Approach Delay (s)		79.7			115.2			45.3			97.6	
Approach LOS		E			F			D			F	

Intersection Summary			
HCM Average Control Delay	82.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	7.6
Intersection Capacity Utilization	117.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	216	4	159	57	15	48	213	1662	114	318	1839	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	2.0	3.0	3.0	3.0	3.0	2.6		9.0	2.6	2.6
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.86		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	6346		3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	6346		3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	227	4	167	60	16	51	224	1749	120	335	1936	195
RTOR Reduction (vph)	0	0	148	0	0	48	0	6	0	0	0	59
Lane Group Flow (vph)	227	4	19	60	16	3	224	1863	0	335	1936	136
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8						6
Actuated Green, G (s)	14.7	14.7	14.7	8.0	8.0	8.0	14.6	81.9		19.4	93.7	93.7
Effective Green, g (s)	15.7	16.7	16.7	10.0	10.0	10.0	15.6	85.3		21.4	97.1	97.1
Actuated g/C Ratio	0.10	0.11	0.11	0.07	0.07	0.07	0.10	0.57		0.14	0.65	0.65
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	6.0		11.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	359	207	176	229	124	106	357	3609		490	3292	1025
v/s Ratio Prot	c0.07	0.00		c0.02	0.01		c0.07	0.29		0.10	c0.38	
v/s Ratio Perm			0.01			0.00						0.09
v/c Ratio	0.63	0.02	0.11	0.26	0.13	0.03	0.63	0.52		0.68	0.59	0.13
Uniform Delay, d1	64.4	59.4	59.9	66.5	65.9	65.5	64.4	19.8		61.1	15.1	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.27	0.13		0.95	0.87	1.50
Incremental Delay, d2	3.6	0.0	0.3	0.6	0.5	0.1	1.2	0.2		3.1	0.2	0.0
Delay (s)	68.0	59.4	60.2	67.1	66.4	65.6	83.1	2.8		61.0	13.3	15.4
Level of Service	E	E	E	E	E	E	F	A		E	B	B
Approach Delay (s)		64.6			66.4			11.4			19.9	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰↰		↱↱
Volume (vph)	0	1184	10	0	1885	521	0	0	0	128	0	547
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			0%			0%			0%	
Total Lost time (s)		4.7	5.7		4.7	3.0				4.3		4.3
Lane Util. Factor		0.91	1.00		0.91	1.00				0.97		0.88
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5212	1623		5085	1583				3433		2787
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5212	1623		5085	1583				3433		2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1246	11	0	1984	548	0	0	0	135	0	576
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	1246	7	0	1984	548	0	0	0	135	0	567
Turn Type			Perm			Free				Prot		custom
Protected Phases		2			6					4		
Permitted Phases			2			Free						4
Actuated Green, G (s)		44.6	44.6		44.6	75.0				19.4		19.4
Effective Green, g (s)		45.6	44.6		45.6	75.0				20.4		20.4
Actuated g/C Ratio		0.61	0.59		0.61	1.00				0.27		0.27
Clearance Time (s)		5.7	5.7		5.7					5.3		5.3
Vehicle Extension (s)		4.3	4.3		3.9					2.0		2.0
Lane Grp Cap (vph)		3169	965		3092	1583				934		758
v/s Ratio Prot		0.24			c0.39					0.04		
v/s Ratio Perm			0.00			0.35						c0.20
v/c Ratio		0.39	0.01		0.64	0.35				0.14		0.75
Uniform Delay, d1		7.6	6.2		9.4	0.0				20.7		24.9
Progression Factor		0.87	0.54		0.85	1.00				1.00		1.00
Incremental Delay, d2		0.3	0.0		0.4	0.5				0.0		3.5
Delay (s)		6.9	3.4		8.5	0.5				20.7		28.5
Level of Service		A	A		A	A				C		C
Approach Delay (s)		6.9			6.8			0.0			27.0	
Approach LOS		A			A			A			C	

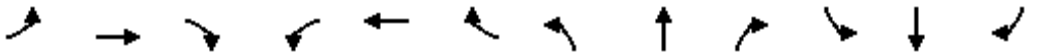
Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	930	382	0	1818	588	418
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	0%	
Total Lost time (s)	4.7	4.7		4.7	6.3	6.3
Lane Util. Factor	0.91	1.00		0.91	0.94	0.88
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	5212	1623		5085	4990	2787
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	5212	1623		5085	4990	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	979	402	0	1914	619	440
RTOR Reduction (vph)	0	140	0	0	0	351
Lane Group Flow (vph)	979	262	0	1914	619	89
Turn Type		Perm				Perm
Protected Phases	2			6	8	
Permitted Phases		2				8
Actuated Green, G (s)	47.8	47.8		47.8	14.2	14.2
Effective Green, g (s)	48.8	48.8		48.8	15.2	15.2
Actuated g/C Ratio	0.65	0.65		0.65	0.20	0.20
Clearance Time (s)	5.7	5.7		5.7	7.3	7.3
Vehicle Extension (s)	3.8	3.8		4.3	2.0	2.0
Lane Grp Cap (vph)	3391	1056		3309	1011	565
v/s Ratio Prot	0.19			c0.38	c0.12	
v/s Ratio Perm		0.16				0.03
v/c Ratio	0.29	0.25		0.58	0.61	0.16
Uniform Delay, d1	5.6	5.5		7.3	27.2	24.6
Progression Factor	0.73	3.22		0.82	1.00	1.00
Incremental Delay, d2	0.1	0.1		0.6	0.8	0.0
Delay (s)	4.1	17.7		6.7	28.0	24.7
Level of Service	A	B		A	C	C
Approach Delay (s)	8.1			6.7	26.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

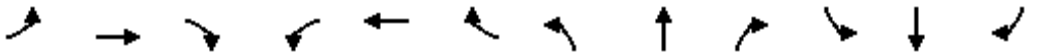
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	129	280	353	216	36	320	667	305	98	1262	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-5%			0%	
Total Lost time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	136	295	372	227	38	337	702	321	103	1328	100
RTOR Reduction (vph)	0	0	234	0	0	30	0	0	97	0	0	46
Lane Group Flow (vph)	64	136	61	372	227	8	337	702	224	103	1328	54
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.2	17.0	17.0	20.5	31.7	31.7	23.0	84.2	104.7	8.9	70.1	70.1
Effective Green, g (s)	6.2	17.0	17.0	20.5	31.7	31.7	23.0	84.2	104.7	8.9	70.1	70.1
Actuated g/C Ratio	0.04	0.11	0.11	0.14	0.21	0.21	0.15	0.56	0.70	0.06	0.47	0.47
Clearance Time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	4.3	4.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	142	401	179	469	748	335	540	2926	1133	204	2376	740
v/s Ratio Prot	0.02	0.04		c0.11	c0.06		c0.10	0.13	0.03	0.03	c0.26	
v/s Ratio Perm			0.04			0.01			0.11			0.03
v/c Ratio	0.45	0.34	0.34	0.79	0.30	0.02	0.62	0.24	0.20	0.50	0.56	0.07
Uniform Delay, d1	70.2	61.3	61.3	62.7	49.8	46.9	59.5	16.7	7.9	68.4	28.8	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.73	0.18	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.7	1.5	8.4	0.4	0.0	1.6	0.2	0.0	0.7	1.0	0.2
Delay (s)	71.1	62.0	62.8	71.1	50.2	46.9	50.0	12.3	1.5	69.1	29.8	22.2
Level of Service	E	E	E	E	D	D	D	B	A	E	C	C
Approach Delay (s)		63.6			62.2			19.1			31.9	
Approach LOS		E			E			B			C	

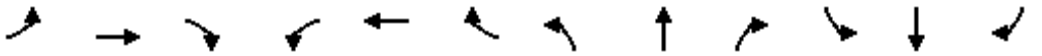
Intersection Summary			
HCM Average Control Delay	36.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



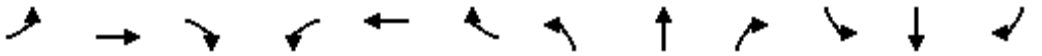
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	18	50	138	12	35	13	522	146	80	1328	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	1491		1593	1490		1593	4577	1425	1593	3185	1425
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1593	1491		1593	1490		1593	4577	1425	1593	3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	19	53	145	13	37	14	549	154	84	1398	3
RTOR Reduction (vph)	0	49	0	0	30	0	0	0	61	0	0	1
Lane Group Flow (vph)	9	23	0	145	20	0	14	549	93	84	1398	2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	0.6	8.4		14.1	21.9		1.9	69.7	69.7	8.8	76.6	76.6
Effective Green, g (s)	1.6	9.9		15.1	23.4		2.9	72.7	72.7	9.8	79.6	79.6
Actuated g/C Ratio	0.01	0.08		0.13	0.19		0.02	0.61	0.61	0.08	0.66	0.66
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	21	123		200	291		38	2773	863	130	2113	945
v/s Ratio Prot	0.01	c0.02		c0.09	0.01		0.01	0.12		c0.05	c0.44	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.43	0.19		0.72	0.07		0.37	0.20	0.11	0.65	0.66	0.00
Uniform Delay, d1	58.7	51.3		50.5	39.4		57.6	10.6	10.0	53.4	12.1	6.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.6		10.5	0.1		2.2	0.2	0.3	8.0	0.9	0.0
Delay (s)	63.8	51.9		61.0	39.5		59.8	10.8	10.2	61.4	13.1	6.8
Level of Service	E	D		E	D		E	B	B	E	B	A
Approach Delay (s)		53.3			55.5			11.6			15.8	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



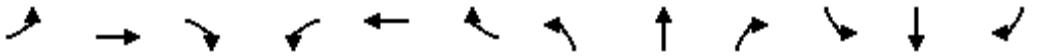
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	10	24	62	3	60	6	590	55	42	1137	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	11	25	65	3	63	6	621	58	44	1197	3
RTOR Reduction (vph)	0	0	23	0	0	53	0	0	31	0	0	2
Lane Group Flow (vph)	6	11	2	65	3	10	6	621	27	44	1197	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	5.7	5.7	4.7	9.6	9.6	0.8	28.4	28.4	2.5	30.1	30.1
Effective Green, g (s)	0.8	5.7	5.7	4.7	9.6	9.6	0.8	28.4	28.4	2.5	30.1	30.1
Actuated g/C Ratio	0.01	0.09	0.09	0.08	0.16	0.16	0.01	0.46	0.46	0.04	0.49	0.49
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	23	329	147	136	554	248	23	2356	733	72	2497	777
v/s Ratio Prot	0.00	0.00		c0.04	0.00		0.00	0.12		c0.02	c0.24	
v/s Ratio Perm			0.00			c0.01			0.02			0.00
v/c Ratio	0.26	0.03	0.02	0.48	0.01	0.04	0.26	0.26	0.04	0.61	0.48	0.00
Uniform Delay, d1	30.0	25.3	25.3	27.1	21.8	21.9	30.0	10.1	9.0	28.9	10.4	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	0.0	0.0	2.6	0.0	0.1	6.0	0.1	0.0	14.4	0.1	0.0
Delay (s)	35.9	25.3	25.3	29.8	21.8	22.0	35.9	10.1	9.0	43.3	10.5	7.9
Level of Service	D	C	C	C	C	C	D	B	A	D	B	A
Approach Delay (s)		26.8			25.8			10.2			11.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



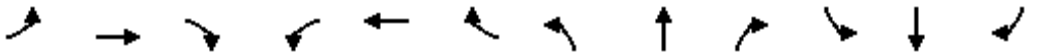
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	138	3	2	84	8	6	1	0	38	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	4.5	4.5	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539	1583	1770	1863		1770	1863	1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539	1583	1770	1863		1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	145	3	2	88	8	6	1	0	40	5	1
RTOR Reduction (vph)	0	0	2	0	0	5	0	0	0	0	0	1
Lane Group Flow (vph)	0	145	1	2	88	3	6	1	0	40	5	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		8.4	8.4	0.4	14.3	14.3	0.4	2.5		12.0	14.1	14.1
Effective Green, g (s)		8.4	8.4	0.4	14.3	14.3	0.4	2.5		12.0	14.1	14.1
Actuated g/C Ratio		0.19	0.19	0.01	0.33	0.33	0.01	0.06		0.28	0.33	0.33
Clearance Time (s)		5.0	5.0	5.0	4.5	4.5	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		687	307	16	1169	523	16	108		491	607	515
v/s Ratio Prot		c0.04		0.00	c0.02		0.00	0.00		c0.02	c0.00	
v/s Ratio Perm			0.00			0.00						0.00
v/c Ratio		0.21	0.00	0.12	0.08	0.01	0.38	0.01		0.08	0.01	0.00
Uniform Delay, d1		14.7	14.1	21.3	10.0	9.7	21.3	19.2		11.6	9.9	9.8
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2	0.0	3.5	0.0	0.0	14.1	0.0		0.1	0.0	0.0
Delay (s)		14.8	14.1	24.8	10.0	9.7	35.5	19.3		11.6	9.9	9.8
Level of Service		B	B	C	A	A	D	B		B	A	A
Approach Delay (s)		14.8			10.3			33.2			11.4	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.10		
Actuated Cycle Length (s)	43.3	Sum of lost time (s)	14.5
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



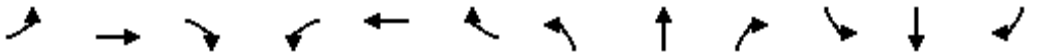
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	154	20	186	54	85	11	746	398	66	1213	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.3	4.3	4.0	3.3	4.3
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	162	21	196	57	89	12	785	419	69	1277	9
RTOR Reduction (vph)	0	0	18	0	0	67	0	0	239	0	0	5
Lane Group Flow (vph)	29	162	3	196	57	22	12	785	180	69	1277	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.4	10.8	10.8	7.2	16.6	16.6	0.6	29.5	29.5	3.1	32.0	32.0
Effective Green, g (s)	2.4	11.8	11.8	8.2	17.6	17.6	1.6	31.5	30.5	4.1	34.0	33.0
Actuated g/C Ratio	0.03	0.17	0.17	0.12	0.25	0.25	0.02	0.44	0.43	0.06	0.48	0.47
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.5	5.5	2.0	5.5	5.5
Lane Grp Cap (vph)	60	589	263	205	879	393	40	2259	681	102	2439	737
v/s Ratio Prot	0.02	c0.05		c0.11	0.02		0.01	0.15		c0.04	c0.25	
v/s Ratio Perm			0.00			0.01			0.11			0.00
v/c Ratio	0.48	0.28	0.01	0.96	0.06	0.06	0.30	0.35	0.26	0.68	0.52	0.01
Uniform Delay, d1	33.6	25.8	24.7	31.2	20.4	20.3	34.1	12.9	13.0	32.7	12.8	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.1	0.0	49.6	0.0	0.0	1.5	0.2	0.5	13.1	0.4	0.0
Delay (s)	35.9	25.9	24.7	80.8	20.4	20.3	35.6	13.2	13.5	45.8	13.3	10.2
Level of Service	D	C	C	F	C	C	D	B	B	D	B	B
Approach Delay (s)		27.1			55.0			13.5			14.9	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



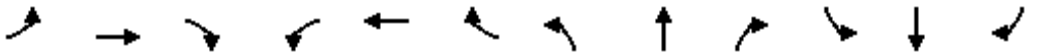
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	640	0	3	296	0	40	1	14	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0			5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00			1.00
Frt	1.00	1.00		1.00	1.00		1.00	1.00	0.85			0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	3539		1770	3539		1770	1863	1583			1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	3539		1770	3539		1770	1863	1583			1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	674	0	3	312	0	42	1	15	0	0	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	0	1
Lane Group Flow (vph)	2	674	0	3	312	0	42	1	5	0	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	15.4		0.4	15.4		1.8	15.6	15.6			8.8
Effective Green, g (s)	0.4	15.4		0.4	15.4		1.8	15.6	15.6			8.8
Actuated g/C Ratio	0.01	0.33		0.01	0.33		0.04	0.34	0.34			0.19
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	15	1175		15	1175		69	626	532			300
v/s Ratio Prot	0.00	c0.19		c0.00	0.09		c0.02	0.00				
v/s Ratio Perm									c0.00			0.00
v/c Ratio	0.13	0.57		0.20	0.27		0.61	0.00	0.01			0.00
Uniform Delay, d1	22.8	12.8		22.8	11.4		22.0	10.2	10.3			15.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00			1.00
Incremental Delay, d2	4.0	0.7		6.5	0.1		14.3	0.0	0.0			0.0
Delay (s)	26.8	13.5		29.3	11.5		36.2	10.2	10.3			15.2
Level of Service	C	B		C	B		D	B	B			B
Approach Delay (s)		13.5			11.6			29.1			15.2	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



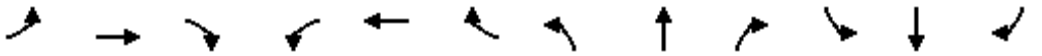
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	689	71	8	187	4	82	33	31	7	107	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	2.5	3.5	3.5	2.5	3.5	3.5	2.5	3.5	3.5	2.5	3.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	725	75	8	197	4	86	35	33	7	113	64
RTOR Reduction (vph)	0	0	51	0	0	3	0	0	22	0	0	46
Lane Group Flow (vph)	36	725	24	8	197	1	86	35	11	7	113	18
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.5	15.3	15.3	0.6	14.4	14.4	3.4	16.0	16.0	0.6	13.2	13.2
Effective Green, g (s)	2.5	17.3	16.3	1.6	16.4	15.4	4.4	18.0	17.0	1.6	15.2	14.2
Actuated g/C Ratio	0.05	0.34	0.32	0.03	0.32	0.30	0.09	0.36	0.34	0.03	0.30	0.28
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	88	1212	511	56	1149	483	154	664	533	56	561	445
v/s Ratio Prot	c0.02	c0.20		0.00	0.06		c0.05	c0.02		0.00	c0.06	
v/s Ratio Perm			0.02			0.00			0.01			0.01
v/c Ratio	0.41	0.60	0.05	0.14	0.17	0.00	0.56	0.05	0.02	0.12	0.20	0.04
Uniform Delay, d1	23.3	13.7	11.8	23.8	12.2	12.2	22.1	10.7	11.2	23.8	13.1	13.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.8	0.0	1.2	0.1	0.0	4.3	0.0	0.0	1.0	0.2	0.0
Delay (s)	26.4	14.5	11.8	25.0	12.3	12.2	26.5	10.7	11.2	24.8	13.3	13.2
Level of Service	C	B	B	C	B	B	C	B	B	C	B	B
Approach Delay (s)		14.8			12.7			19.6			13.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



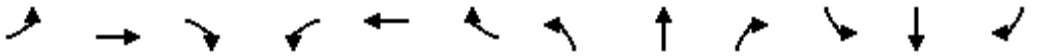
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	830	7	13	199	0	19	3	86	0	2	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539		1770	1863	1583		1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539		1770	1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	874	7	14	209	0	20	3	91	0	2	18
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	64	0	0	15
Lane Group Flow (vph)	15	874	3	14	209	0	20	3	27	0	2	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	19.3	19.3	0.4	19.3		0.5	14.3	14.3		8.8	8.8
Effective Green, g (s)	0.4	19.3	19.3	0.4	19.3		0.5	14.3	14.3		8.8	8.8
Actuated g/C Ratio	0.01	0.39	0.39	0.01	0.39		0.01	0.29	0.29		0.18	0.18
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	14	1394	624	14	1394		18	544	462		335	284
v/s Ratio Prot	c0.01	c0.25		0.01	0.06		c0.01	0.00			0.00	
v/s Ratio Perm			0.00						c0.02			0.00
v/c Ratio	1.07	0.63	0.00	1.00	0.15		1.11	0.01	0.06		0.01	0.01
Uniform Delay, d1	24.3	12.0	9.0	24.3	9.6		24.2	12.3	12.5		16.5	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	265.6	0.9	0.0	240.5	0.1		250.0	0.0	0.1		0.0	0.0
Delay (s)	289.9	12.8	9.0	264.8	9.6		274.2	12.3	12.5		16.5	16.5
Level of Service	F	B	A	F	A		F	B	B		B	B
Approach Delay (s)		17.4			25.6			58.5			16.5	
Approach LOS		B			C			E			B	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



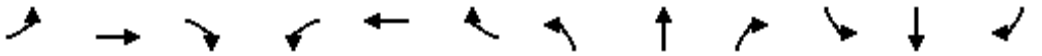
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	773	106	87	176	3	20	32	46	18	99	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.2	4.2	3.5	3.2	4.2	3.5	2.5	3.5	3.5	2.5	3.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	38	814	112	92	185	3	21	34	48	19	104	17
RTOR Reduction (vph)	0	0	67	0	0	2	0	0	38	0	0	14
Lane Group Flow (vph)	38	814	45	92	185	1	21	34	10	19	104	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.6	24.0	24.0	6.7	28.1	28.1	2.3	11.6	11.6	1.1	10.4	10.4
Effective Green, g (s)	3.6	26.0	25.0	7.7	30.1	29.1	3.3	13.6	12.6	2.1	12.4	11.4
Actuated g/C Ratio	0.06	0.42	0.40	0.12	0.48	0.47	0.05	0.22	0.20	0.03	0.20	0.18
Clearance Time (s)	4.5	5.2	5.2	4.5	5.2	5.2	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	103	1482	637	219	1715	742	94	408	321	60	372	291
v/s Ratio Prot	0.02	c0.23		c0.05	0.05		c0.01	0.02		0.01	c0.06	
v/s Ratio Perm			0.03			0.00			0.01			0.00
v/c Ratio	0.37	0.55	0.07	0.42	0.11	0.00	0.22	0.08	0.03	0.32	0.28	0.01
Uniform Delay, d1	28.2	13.6	11.4	25.1	8.7	8.8	28.2	19.3	19.9	29.3	21.1	20.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.7	0.1	1.3	0.1	0.0	1.2	0.1	0.0	3.0	0.4	0.0
Delay (s)	30.4	14.4	11.5	26.4	8.8	8.8	29.4	19.4	19.9	32.3	21.5	20.8
Level of Service	C	B	B	C	A	A	C	B	B	C	C	C
Approach Delay (s)		14.7			14.6			21.7			22.9	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	12.7
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



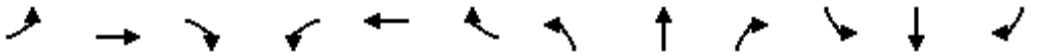
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	842	0	49	0	0	97	27	1347	16	560	1543	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97		1.00			1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	886	0	52	0	0	102	28	1418	17	589	1624	237
RTOR Reduction (vph)	0	0	33	0	0	8	0	0	8	0	0	90
Lane Group Flow (vph)	886	0	19	0	0	94	28	1418	9	589	1624	147
Turn Type	Prot		custom	Prot		Over	Prot		Perm	Prot		Perm
Protected Phases	7		4	3		1	5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	36.5		36.5			38.1	3.5	38.1	38.1	38.1	72.7	72.7
Effective Green, g (s)	36.5		36.5			38.1	3.5	38.1	38.1	38.1	72.7	72.7
Actuated g/C Ratio	0.29		0.29			0.30	0.03	0.30	0.30	0.30	0.57	0.57
Clearance Time (s)	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	981		452			472	49	1517	472	528	2895	901
v/s Ratio Prot	c0.26		0.01			0.06	0.02	c0.28		c0.33	0.32	
v/s Ratio Perm									0.01			0.09
v/c Ratio	0.90		0.04			0.20	0.57	0.93	0.02	1.12	0.56	0.16
Uniform Delay, d1	43.9		33.0			33.4	61.4	43.6	31.6	44.8	17.4	13.1
Progression Factor	1.00		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.4		0.0			0.2	15.1	11.0	0.0	74.9	0.3	0.1
Delay (s)	55.3		33.0			33.6	76.4	54.6	31.6	119.7	17.7	13.1
Level of Service	E		C			C	E	D	C	F	B	B
Approach Delay (s)		54.1			33.6			54.7			41.7	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	47.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	127.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



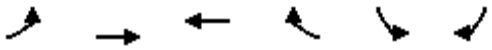
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1136	65	29	1218	12	0	8	2	103	21	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	4.0	4.0	2.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	1196	68	31	1282	13	0	8	2	108	22	21
RTOR Reduction (vph)	0	0	41	0	0	8	0	0	2	0	0	13
Lane Group Flow (vph)	8	1196	27	31	1282	5	0	8	0	108	22	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	22.2	22.2	1.2	22.9	22.9		9.8	9.8	6.0	20.8	20.8
Effective Green, g (s)	1.5	25.2	23.2	2.2	25.9	23.9		10.8	10.8	7.0	21.8	21.8
Actuated g/C Ratio	0.03	0.43	0.39	0.04	0.44	0.40		0.18	0.18	0.12	0.37	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	45	2165	620	66	2225	639		340	289	209	686	583
v/s Ratio Prot	0.00	0.24		c0.02	c0.25			0.00		c0.06	c0.01	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.18	0.55	0.04	0.47	0.58	0.01		0.02	0.00	0.52	0.03	0.01
Uniform Delay, d1	28.2	12.8	11.1	27.9	12.5	10.6		19.9	19.8	24.5	12.0	11.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.3	0.0	5.2	0.4	0.0		0.0	0.0	2.2	0.0	0.0
Delay (s)	30.1	13.1	11.2	33.1	12.9	10.6		19.9	19.8	26.7	12.0	11.9
Level of Service	C	B	B	C	B	B		B	B	C	B	B
Approach Delay (s)		13.1			13.3			19.9			22.5	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	59.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



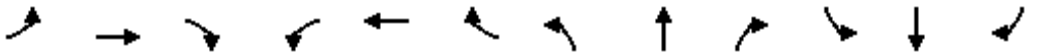
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	141	1091	1	254	1104	34	61	465	351	105	865	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	148	1148	1	267	1162	36	64	489	369	111	911	433
RTOR Reduction (vph)	0	0	1	0	0	24	0	0	145	0	0	145
Lane Group Flow (vph)	148	1148	0	267	1162	12	64	489	224	111	911	288
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	28.9	28.9	12.2	32.5	32.5	3.8	26.8	26.8	7.1	30.1	30.1
Effective Green, g (s)	8.6	28.9	28.9	12.2	32.5	32.5	3.8	26.8	26.8	7.1	30.1	30.1
Actuated g/C Ratio	0.09	0.30	0.30	0.13	0.34	0.34	0.04	0.28	0.28	0.07	0.32	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	311	1547	482	441	1740	542	137	1435	447	257	1611	502
v/s Ratio Prot	0.04	c0.23		c0.08	c0.23		0.02	0.10		c0.03	0.18	
v/s Ratio Perm			0.00			0.01			0.14			c0.18
v/c Ratio	0.48	0.74	0.00	0.61	0.67	0.02	0.47	0.34	0.50	0.43	0.57	0.57
Uniform Delay, d1	41.1	29.7	23.0	39.1	26.6	20.7	44.6	27.1	28.5	42.0	27.0	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	2.0	0.0	2.3	1.0	0.0	2.5	0.1	0.9	1.2	0.5	1.6
Delay (s)	42.2	31.7	23.0	41.5	27.6	20.7	47.1	27.2	29.4	43.2	27.5	28.7
Level of Service	D	C	C	D	C	C	D	C	C	D	C	C
Approach Delay (s)		32.9			30.0			29.5			29.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



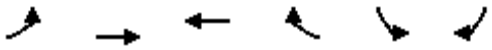
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	250	1306	1043	97	49	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	263	1375	1098	102	52	87
RTOR Reduction (vph)	0	0	0	67	0	73
Lane Group Flow (vph)	263	1375	1098	35	52	15
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	14.5	40.5	21.0	21.0	10.1	10.1
Effective Green, g (s)	14.5	40.5	21.0	21.0	10.1	10.1
Actuated g/C Ratio	0.24	0.67	0.35	0.35	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	424	3398	1762	549	295	264
v/s Ratio Prot	c0.15	0.27	c0.22		c0.03	
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.62	0.40	0.62	0.06	0.18	0.05
Uniform Delay, d1	20.6	4.6	16.5	13.2	21.7	21.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1	0.7	0.0	0.3	0.1
Delay (s)	23.4	4.6	17.2	13.3	22.0	21.3
Level of Service	C	A	B	B	C	C
Approach Delay (s)		7.7	16.9		21.6	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



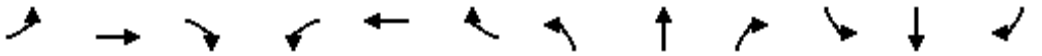
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	514	832	9	167	654	157	27	570	359	277	735	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	4.0	3.0	5.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	541	876	9	176	688	165	28	600	378	292	774	484
RTOR Reduction (vph)	0	0	6	0	0	111	0	0	171	0	0	229
Lane Group Flow (vph)	541	876	3	176	688	54	28	600	207	292	774	255
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.8	30.5	30.5	9.3	21.0	21.0	2.2	28.6	28.6	8.2	34.6	34.6
Effective Green, g (s)	19.8	33.5	31.5	10.3	24.0	22.0	3.2	30.6	29.6	9.2	36.6	35.6
Actuated g/C Ratio	0.20	0.34	0.32	0.11	0.25	0.23	0.03	0.31	0.30	0.09	0.38	0.36
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.8	4.8	3.0	4.8	4.8
Lane Grp Cap (vph)	696	1745	511	362	1250	357	113	1594	480	324	1907	577
v/s Ratio Prot	c0.16	c0.17		0.05	0.14		0.01	0.12		c0.09	0.15	
v/s Ratio Perm			0.00			0.03			0.13			c0.16
v/c Ratio	0.78	0.50	0.01	0.49	0.55	0.15	0.25	0.38	0.43	0.90	0.41	0.44
Uniform Delay, d1	36.8	25.4	22.4	41.2	32.1	30.3	46.0	26.1	27.2	43.8	22.5	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	0.2	0.0	1.0	0.5	0.2	1.2	0.3	1.2	26.6	0.3	1.1
Delay (s)	42.3	25.7	22.4	42.2	32.6	30.5	47.2	26.4	28.5	70.4	22.8	24.5
Level of Service	D	C	C	D	C	C	D	C	C	E	C	C
Approach Delay (s)		31.9			33.9			27.7			32.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



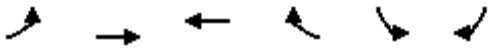
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1468	944	146	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0		5.0
Lane Util. Factor		0.91	0.91	1.00		1.00
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		5085	5085	1583		1583
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		5085	5085	1583		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1545	994	154	0	35
RTOR Reduction (vph)	0	0	0	68	0	28
Lane Group Flow (vph)	0	1545	994	86	0	7
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)		23.5	23.5	23.5		8.8
Effective Green, g (s)		23.5	23.5	23.5		8.8
Actuated g/C Ratio		0.56	0.56	0.56		0.21
Clearance Time (s)		5.0	5.0	5.0		5.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		2825	2825	879		329
v/s Ratio Prot		c0.30	0.20			
v/s Ratio Perm				0.05		c0.00
v/c Ratio		0.55	0.35	0.10		0.02
Uniform Delay, d1		6.0	5.2	4.4		13.3
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.2	0.1	0.0		0.0
Delay (s)		6.2	5.3	4.5		13.4
Level of Service		A	A	A		B
Approach Delay (s)		6.2	5.2		13.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



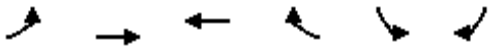
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1337	125	4	892	63	163	66	14	191	113	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	5.0	3.0	4.0	5.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	1407	132	4	939	66	172	69	15	201	119	37
RTOR Reduction (vph)	0	0	78	0	0	41	0	0	12	0	0	30
Lane Group Flow (vph)	7	1407	54	4	939	25	172	69	3	201	119	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.7	23.8	23.8	0.7	23.8	23.8	10.0	11.6	11.6	10.4	12.0	12.0
Effective Green, g (s)	1.7	25.8	24.8	1.7	25.8	24.8	11.0	13.6	12.6	11.4	14.0	13.0
Actuated g/C Ratio	0.03	0.40	0.38	0.03	0.40	0.38	0.17	0.21	0.20	0.18	0.22	0.20
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	4.8	4.8	3.0	4.8	4.8	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	2034	609	47	2034	609	302	393	309	313	404	319
v/s Ratio Prot	c0.00	c0.28		0.00	0.18		0.10	0.04		c0.11	c0.06	
v/s Ratio Perm			0.03			0.02			0.00			0.00
v/c Ratio	0.15	0.69	0.09	0.09	0.46	0.04	0.57	0.18	0.01	0.64	0.29	0.02
Uniform Delay, d1	30.7	16.1	12.7	30.6	14.2	12.4	24.6	20.9	20.9	24.7	21.1	20.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	1.3	0.1	0.8	0.3	0.1	2.5	0.2	0.0	4.5	0.4	0.0
Delay (s)	32.2	17.3	12.8	31.4	14.6	12.5	27.0	21.1	20.9	29.1	21.5	20.7
Level of Service	C	B	B	C	B	B	C	C	C	C	C	C
Approach Delay (s)		17.0			14.5			25.1			25.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



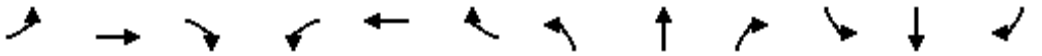
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	172	1370	902	161	56	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	181	1442	949	169	59	61
RTOR Reduction (vph)	0	0	0	114	0	49
Lane Group Flow (vph)	181	1442	949	55	59	12
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	10.2	32.3	17.1	17.1	10.1	10.1
Effective Green, g (s)	10.2	32.3	17.1	17.1	10.1	10.1
Actuated g/C Ratio	0.19	0.62	0.33	0.33	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	345	3134	1659	517	341	305
v/s Ratio Prot	0.10	c0.28	c0.19		c0.03	
v/s Ratio Perm				0.03		0.01
v/c Ratio	0.52	0.46	0.57	0.11	0.17	0.04
Uniform Delay, d1	18.9	5.4	14.6	12.3	17.7	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1	0.5	0.1	0.2	0.1
Delay (s)	20.4	5.5	15.1	12.4	17.9	17.3
Level of Service	C	A	B	B	B	B
Approach Delay (s)		7.1	14.7		17.6	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	67	1359	1030	38	128	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	4.5	3.5	4.5
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	71	1431	1084	40	135	35
RTOR Reduction (vph)	0	0	0	24	0	27
Lane Group Flow (vph)	71	1431	1084	16	135	8
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.8	27.4	19.1	19.1	11.7	11.7
Effective Green, g (s)	4.8	29.4	21.1	20.1	12.7	11.7
Actuated g/C Ratio	0.10	0.60	0.43	0.41	0.26	0.24
Clearance Time (s)	4.5	5.5	5.5	5.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	173	3045	2185	648	458	377
v/s Ratio Prot	0.04	c0.28	0.21		c0.08	
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.41	0.47	0.50	0.03	0.29	0.02
Uniform Delay, d1	20.8	5.5	10.1	8.7	14.6	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.1	0.2	0.0	0.4	0.0
Delay (s)	22.4	5.6	10.3	8.7	15.0	14.3
Level of Service	C	A	B	A	B	B
Approach Delay (s)		6.4	10.3		14.8	
Approach LOS		A	B		B	

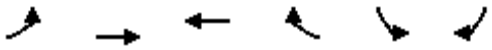
Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	49.1	Sum of lost time (s)	7.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	1311	73	269	825	301	205	884	537	427	871	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	3.0	2.7	2.7	3.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	98	1380	77	283	868	317	216	931	565	449	917	309
RTOR Reduction (vph)	0	0	51	0	0	197	0	0	133	0	0	150
Lane Group Flow (vph)	98	1380	26	283	868	120	216	931	432	449	917	159
Heavy Vehicles (%)	2%	4%	2%	2%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.8	36.9	36.9	10.0	39.1	39.1	11.3	36.0	36.0	14.0	38.7	38.7
Effective Green, g (s)	9.8	39.9	37.9	12.0	41.4	41.4	13.3	38.0	38.0	15.0	40.7	40.7
Actuated g/C Ratio	0.08	0.34	0.32	0.10	0.35	0.35	0.11	0.32	0.32	0.13	0.34	0.34
Clearance Time (s)	5.0	6.0	6.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	4.7	4.7	3.0	3.0	3.0	3.0	4.8	4.8	3.0	4.7	4.7
Lane Grp Cap (vph)	283	1674	505	346	1737	541	384	1625	506	433	1741	542
v/s Ratio Prot	0.03	c0.28		c0.08	0.17		0.06	0.18		c0.13	c0.18	
v/s Ratio Perm			0.02			0.08			c0.27			0.10
v/c Ratio	0.35	0.82	0.05	0.82	0.50	0.22	0.56	0.57	0.85	1.04	0.53	0.29
Uniform Delay, d1	51.5	36.3	28.0	52.4	30.6	27.4	50.0	33.7	37.9	52.0	31.4	28.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	3.8	0.1	13.9	0.2	0.2	1.9	0.7	14.3	53.1	0.5	0.6
Delay (s)	52.3	40.1	28.1	66.3	30.8	27.6	51.9	34.4	52.1	105.1	31.9	29.2
Level of Service	D	D	C	E	C	C	D	C	D	F	C	C
Approach Delay (s)		40.3			36.9			42.5			51.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	118.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

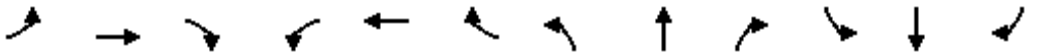
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	587	1519	1112	80	127	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1478	1770	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	618	1599	1171	84	134	260
RTOR Reduction (vph)	0	0	0	47	0	175
Lane Group Flow (vph)	618	1599	1171	37	134	85
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	9.0	36.3	23.3	23.3	6.7	15.7
Effective Green, g (s)	10.0	39.3	26.3	26.3	7.7	17.7
Actuated g/C Ratio	0.17	0.65	0.44	0.44	0.13	0.29
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	571	2314	1549	647	227	960
v/s Ratio Prot	c0.18	c0.45	0.33		c0.08	0.01
v/s Ratio Perm				0.02		0.02
v/c Ratio	1.08	0.69	0.76	0.06	0.59	0.09
Uniform Delay, d1	25.1	6.6	14.2	9.7	24.7	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	61.9	1.0	2.3	0.1	2.7	0.0
Delay (s)	86.9	7.6	16.5	9.8	27.4	15.4
Level of Service	F	A	B	A	C	B
Approach Delay (s)		29.7	16.1		19.5	
Approach LOS		C	B		B	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	13.1
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

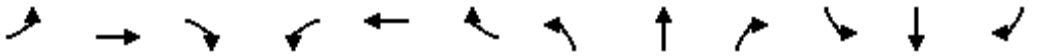
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	529	1157	28	82	788	100	131	0	417	273	0	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0	5.0	2.0	4.0	3.0	2.0		3.0	3.7		2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.99	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1526	1770	3539	1562	1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1526	1770	3539	1562	1770		1583	1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	557	1218	29	86	829	105	138	0	439	287	0	292
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	157	0	0	0
Lane Group Flow (vph)	557	1218	14	86	829	105	138	0	282	287	0	292
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot		Perm	Prot		Free	Prot		custom	Prot		Free
Protected Phases	7	4		3	8		5			6		
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	32.0	53.3	53.3	7.0	28.3	110.8	15.0		15.0	15.8		110.8
Effective Green, g (s)	34.0	55.3	54.3	9.0	30.3	110.8	17.0		16.0	17.8		110.8
Actuated g/C Ratio	0.31	0.50	0.49	0.08	0.27	1.00	0.15		0.14	0.16		1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0		4.0	5.7		
Vehicle Extension (s)	2.0	4.8	4.8	2.0	4.8		2.0		2.0	2.0		
Lane Grp Cap (vph)	543	1766	748	144	968	1562	272		229	284		1583
v/s Ratio Prot	c0.31	0.34		0.05	c0.23		0.08			c0.16		
v/s Ratio Perm			0.01			0.07			c0.18			0.18
v/c Ratio	1.03	0.69	0.02	0.60	0.86	0.07	0.51		1.23	1.01		0.18
Uniform Delay, d1	38.4	21.2	14.5	49.1	38.2	0.0	43.1		47.4	46.5		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	45.3	1.4	0.0	4.4	8.2	0.1	0.5		136.9	56.1		0.3
Delay (s)	83.7	22.6	14.6	53.5	46.4	0.1	43.6		184.3	102.6		0.3
Level of Service	F	C	B	D	D	A	D		F	F		A
Approach Delay (s)		41.4			42.2			150.6			51.0	
Approach LOS		D			D			F			D	

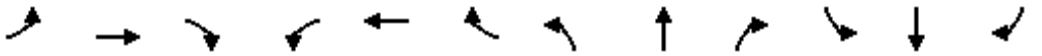
Intersection Summary			
HCM Average Control Delay	58.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	12.7
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	465	1077	66	184	46	355	1479	74	55	1120	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	180	489	1134	69	194	48	374	1557	78	58	1179	188
RTOR Reduction (vph)	0	0	107	0	0	25	0	0	46	0	0	0
Lane Group Flow (vph)	180	489	1027	69	194	23	374	1557	33	58	1179	188
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	9.3	60.0	60.0	4.0	55.7	55.7	11.0	33.0	33.0	3.0	25.0	120.0
Effective Green, g (s)	10.3	63.0	63.0	5.0	58.2	58.2	12.0	36.0	36.0	4.0	28.0	120.0
Actuated g/C Ratio	0.09	0.52	0.52	0.04	0.49	0.49	0.10	0.30	0.30	0.03	0.23	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	295	1858	831	74	2466	768	343	1526	475	59	1495	1583
v/s Ratio Prot	0.05	0.14		c0.04	0.04		c0.11	c0.31		0.03	0.18	
v/s Ratio Perm			c0.65			0.01			0.02			0.12
v/c Ratio	0.61	0.26	1.24	0.93	0.08	0.03	1.09	1.02	0.07	0.98	0.79	0.12
Uniform Delay, d1	52.9	15.7	28.5	57.3	16.5	16.2	54.0	42.0	30.0	58.0	43.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1	116.3	80.5	0.0	0.0	75.0	28.3	0.3	110.3	3.0	0.2
Delay (s)	55.5	15.8	144.8	137.8	16.6	16.2	129.0	70.3	30.3	168.3	46.3	0.2
Level of Service	E	B	F	F	B	B	F	E	C	F	D	A
Approach Delay (s)		100.9			43.4			79.7			45.1	
Approach LOS		F			D			E			D	

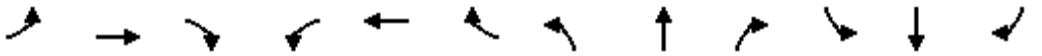
Intersection Summary			
HCM Average Control Delay	75.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	64	24	375	367	436	184	896	608	562	541	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0	5.0	3.0	2.6	5.0	5.0	2.6	3.0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1545	3433	1863	1565	1770	3539	1570	3433	3539	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1545	3433	1863	1565	1770	3539	1570	3433	3539	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	67	25	395	386	459	194	943	640	592	569	60
RTOR Reduction (vph)	0	0	22	0	0	157	0	0	86	0	0	0
Lane Group Flow (vph)	5	67	3	395	386	302	194	943	554	592	569	60
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		pm+ov	Prot		pm+ov	Prot		Free
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	1.7	9.3	9.3	17.2	24.8	42.0	11.6	22.2	39.4	17.2	28.8	85.9
Effective Green, g (s)	2.7	9.3	10.3	17.2	24.8	42.0	12.6	25.6	39.4	17.2	32.2	85.9
Actuated g/C Ratio	0.03	0.11	0.12	0.20	0.29	0.49	0.15	0.30	0.46	0.20	0.37	1.00
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	6.0	5.0	5.0	6.0	
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0	2.0	3.9	3.0	3.0	3.9	
Lane Grp Cap (vph)	56	202	185	687	538	856	260	1055	720	687	1327	1548
v/s Ratio Prot	0.00	0.04		0.12	c0.21	0.07	0.11	c0.27	c0.15	c0.17	0.16	
v/s Ratio Perm			0.00			0.12			0.20			0.04
v/c Ratio	0.09	0.33	0.02	0.57	0.72	0.35	0.75	0.89	0.77	0.86	0.43	0.04
Uniform Delay, d1	40.4	35.4	33.3	31.0	27.4	13.6	35.1	28.8	19.4	33.2	20.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.4	0.0	1.2	4.5	0.3	9.7	10.0	5.0	10.8	0.3	0.0
Delay (s)	40.7	35.8	33.3	32.2	32.0	13.8	44.9	38.9	24.4	44.0	20.3	0.0
Level of Service	D	D	C	C	C	B	D	D	C	D	C	A
Approach Delay (s)		35.4			25.3			34.3			30.8	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	12.6
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

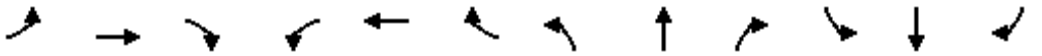
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	535	3	29	833	434	2	754	27	334	711	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	4.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1556	3433	3539	1562	3433	3539	1562	3433	3539	1559
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1556	3433	3539	1562	3433	3539	1562	3433	3539	1559
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	563	3	31	877	457	2	794	28	352	748	20
RTOR Reduction (vph)	0	0	2	0	0	0	0	0	0	0	0	11
Lane Group Flow (vph)	51	563	1	31	877	457	2	794	28	352	748	9
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	3		4	8		5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)	7.4	24.9	24.9	10.5	27.0	96.7	1.5	31.5	96.7	11.8	41.8	41.8
Effective Green, g (s)	8.4	25.9	25.9	11.5	28.0	96.7	2.5	32.5	96.7	12.8	42.8	42.8
Actuated g/C Ratio	0.09	0.27	0.27	0.12	0.29	1.00	0.03	0.34	1.00	0.13	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	5.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	3.0		2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)	298	948	417	408	1025	1562	89	1189	1562	454	1566	690
v/s Ratio Prot	0.01	c0.16		0.01	c0.25		0.00	c0.22		c0.10	0.21	
v/s Ratio Perm			0.00			0.29			0.02			0.01
v/c Ratio	0.17	0.59	0.00	0.08	0.86	0.29	0.02	0.67	0.02	0.78	0.48	0.01
Uniform Delay, d1	40.9	30.8	25.9	37.9	32.4	0.0	45.9	27.5	0.0	40.6	19.0	15.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.7	0.0	0.0	7.1	0.5	0.0	1.8	0.0	7.4	0.4	0.0
Delay (s)	41.0	31.5	25.9	37.9	39.6	0.5	45.9	29.3	0.0	48.0	19.5	15.1
Level of Service	D	C	C	D	D	A	D	C	A	D	B	B
Approach Delay (s)		32.3			26.4			28.4			28.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	96.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

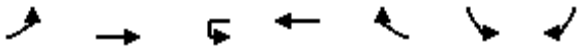
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	10	154	20	3	1	60	1080	7	1	944	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1798	1478		1778		1770	3539	1583	1770	3539	1583
Flt Permitted		0.97	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1798	1478		1778		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	11	162	21	3	1	63	1137	7	1	994	11
RTOR Reduction (vph)	0	0	137	0	1	0	0	0	2	0	0	5
Lane Group Flow (vph)	0	40	25	0	24	0	63	1137	5	1	994	6
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		5.6	5.6		0.5		1.6	24.8	24.8	0.4	23.6	23.6
Effective Green, g (s)		7.5	7.5		2.4		2.6	27.8	27.8	1.4	26.6	26.6
Actuated g/C Ratio		0.15	0.15		0.05		0.05	0.56	0.56	0.03	0.54	0.54
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1	2.0	4.1	4.1
Lane Grp Cap (vph)		272	224		86		93	1988	889	50	1902	851
v/s Ratio Prot		c0.02			c0.01		c0.04	c0.32		0.00	0.28	
v/s Ratio Perm			0.02						0.00			0.00
v/c Ratio		0.15	0.11		0.28		0.68	0.57	0.01	0.02	0.52	0.01
Uniform Delay, d1		18.2	18.1		22.7		23.0	7.0	4.8	23.4	7.4	5.3
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1		0.6		14.3	0.5	0.0	0.1	0.4	0.0
Delay (s)		18.3	18.2		23.4		37.3	7.5	4.8	23.4	7.7	5.3
Level of Service		B	B		C		D	A	A	C	A	A
Approach Delay (s)		18.2			23.4			9.0			7.7	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	49.5	Sum of lost time (s)	7.4
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



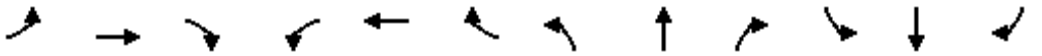
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	843	2286	0	1661	59	87	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	4.0	5.0	4.0
Lane Util. Factor	1.00	0.91		0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085		5085	1548	1770	1562
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085		5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	887	2406	0	1748	62	92	221
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	887	2406	0	1748	62	92	221
Confl. Peds. (#/hr)					5		5
Turn Type	Prot		Prot		Free		Free
Protected Phases	5	2	1	6		7	
Permitted Phases					Free		Free
Actuated Green, G (s)	61.0	125.0		59.0	150.0	15.0	150.0
Effective Green, g (s)	61.0	125.0		59.0	150.0	15.0	150.0
Actuated g/C Ratio	0.41	0.83		0.39	1.00	0.10	1.00
Clearance Time (s)	5.0	5.0		5.0		5.0	
Vehicle Extension (s)	3.0	3.0		3.0		3.0	
Lane Grp Cap (vph)	720	4238		2000	1548	177	1562
v/s Ratio Prot	c0.50	0.47		c0.34		c0.05	
v/s Ratio Perm					0.04		0.14
v/c Ratio	1.23	0.57		0.87	0.04	0.52	0.14
Uniform Delay, d1	44.5	4.0		42.1	0.0	64.1	0.0
Progression Factor	0.41	0.48		0.74	1.00	1.00	1.00
Incremental Delay, d2	105.6	0.1		5.3	0.0	10.5	0.2
Delay (s)	123.9	1.9		36.5	0.0	74.6	0.2
Level of Service	F	A		D	A	E	A
Approach Delay (s)		34.8		35.3		22.1	
Approach LOS		C		D		C	

Intersection Summary			
HCM Average Control Delay	34.2	HCM Level of Service	C
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	118.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2238	108	100	1601	119	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.0	3.0	3.0	3.6	3.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1548	1770	4916	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1548	1770	4916	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2356	114	105	1685	125	153
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2356	114	105	1685	125	153
Confl. Peds. (#/hr)		5				5
Parking (#/hr)				0		
Turn Type		Free	Prot			Free
Protected Phases	4		3	8	2	
Permitted Phases		Free				Free
Actuated Green, G (s)	106.5	150.0	12.9	123.4	16.0	150.0
Effective Green, g (s)	109.5	150.0	13.9	126.4	17.0	150.0
Actuated g/C Ratio	0.73	1.00	0.09	0.84	0.11	1.00
Clearance Time (s)	6.0		4.0	6.0	4.6	
Vehicle Extension (s)	4.1		2.0	4.1	2.0	
Lane Grp Cap (vph)	3712	1548	164	4143	201	1562
v/s Ratio Prot	c0.46		c0.06	0.34	c0.07	
v/s Ratio Perm		0.07				0.10
v/c Ratio	0.63	0.07	0.64	0.41	0.62	0.10
Uniform Delay, d1	10.2	0.0	65.6	2.8	63.4	0.0
Progression Factor	0.23	1.00	1.04	0.76	1.00	1.00
Incremental Delay, d2	0.7	0.1	5.6	0.3	4.3	0.1
Delay (s)	3.1	0.1	73.9	2.4	67.7	0.1
Level of Service	A	A	E	A	E	A
Approach Delay (s)	2.9			6.6	30.5	
Approach LOS	A			A	C	

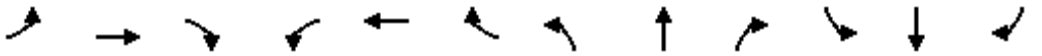
Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	261	2114	1	44	1500	950	3	5	32	414	3	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.3	2.3	3.0	2.3	3.0		3.0	6.3	5.0	5.0	3.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.99		1.00	0.97	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	1510	1770	5085	1562		1828	1542	3221	1616	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	1510	1770	5085	1562		1828	1542	3221	1616	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	275	2225	1	46	1579	1000	3	5	34	436	3	194
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	30	0	0	0
Lane Group Flow (vph)	275	2225	1	46	1579	1000	0	8	4	292	147	194
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Perm	Prot		Free	Split		custom	Split		Free
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			Free			1			Free
Actuated Green, G (s)	28.1	100.9	100.9	8.0	80.8	150.0		1.5	18.6	18.6	18.6	150.0
Effective Green, g (s)	29.1	104.3	104.3	9.0	84.2	150.0		2.5	19.6	20.9	20.9	150.0
Actuated g/C Ratio	0.19	0.70	0.70	0.06	0.56	1.00		0.02	0.13	0.14	0.14	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7			4.0	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	343	3536	1050	106	2854	1562		30	201	449	225	1583
v/s Ratio Prot	c0.16	0.44		0.03	0.31			0.00		0.09	0.09	
v/s Ratio Perm			0.00			c0.64			0.00			0.12
v/c Ratio	0.80	0.63	0.00	0.43	0.55	0.64		0.27	0.02	0.65	0.65	0.12
Uniform Delay, d1	57.7	12.4	7.0	68.0	20.9	0.0		72.8	56.8	61.1	61.1	0.0
Progression Factor	1.34	0.29	0.47	0.90	0.72	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.4	0.7	0.0	2.5	0.2	1.8		4.7	0.0	3.4	6.7	0.2
Delay (s)	87.5	4.2	3.3	63.7	15.2	1.8		77.6	56.9	64.4	67.8	0.2
Level of Service	F	A	A	E	B	A		E	E	E	E	A
Approach Delay (s)		13.4			10.9			60.8			45.5	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

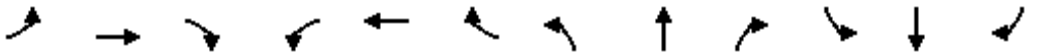
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	2	36	14	1	66	15	2430	43	99	2449	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.86	1.00	0.97	0.86	1.00
Frpb, ped/bikes		1.00	0.96	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1777	1527	1681	1695	1583	1770	6408	1550	3433	6408	1546
Flt Permitted		0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1777	1527	1681	1695	1583	1770	6408	1550	3433	6408	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	2	38	15	1	69	16	2558	45	104	2578	3
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	10	0	0	1
Lane Group Flow (vph)	0	62	2	8	8	69	16	2558	35	104	2578	2
Confl. Peds. (#/hr)			5						5			5
Turn Type	Split		Perm	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	1	1		2	2		3	8		7	4	
Permitted Phases			1			Free			8			4
Actuated Green, G (s)		8.4	8.4	5.7	5.7	150.0	2.9	108.7	108.7	8.8	114.6	114.6
Effective Green, g (s)		9.4	9.4	6.7	6.7	150.0	3.9	112.1	112.1	9.8	118.0	118.0
Actuated g/C Ratio		0.06	0.06	0.04	0.04	1.00	0.03	0.75	0.75	0.07	0.79	0.79
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0	2.8	2.8		2.0	3.7	3.7	2.0	3.7	3.7
Lane Grp Cap (vph)		111	96	75	76	1583	46	4789	1158	224	5041	1216
v/s Ratio Prot		c0.03		c0.00	0.00		0.01	c0.40		c0.03	0.40	
v/s Ratio Perm			0.00			0.04			0.02			0.00
v/c Ratio		0.56	0.02	0.11	0.11	0.04	0.35	0.53	0.03	0.46	0.51	0.00
Uniform Delay, d1		68.3	66.0	68.8	68.8	0.0	71.8	8.0	4.9	67.6	5.7	3.4
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.11	0.14	0.05	0.90	0.74	0.75
Incremental Delay, d2		3.4	0.0	0.6	0.5	0.1	1.4	0.1	0.0	0.5	0.3	0.0
Delay (s)		71.7	66.0	69.3	69.3	0.1	81.1	1.2	0.3	61.6	4.5	2.6
Level of Service		E	E	E	E	A	F	A	A	E	A	A
Approach Delay (s)		69.6			13.1			1.7			6.7	
Approach LOS		E			B			A			A	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



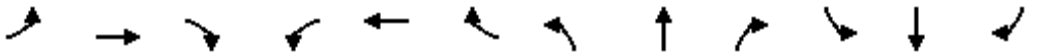
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	2251	180	365	2299	132	212	78	318	62	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	6408	1537	3433	6408	1560	1681	1729	1583	1681	1717	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	6408	1537	3433	6408	1560	1681	1729	1583	1681	1717	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	2369	189	384	2420	139	223	82	335	65	16	7
RTOR Reduction (vph)	0	0	67	0	0	0	0	0	232	0	0	0
Lane Group Flow (vph)	15	2369	122	384	2420	139	152	153	103	40	41	7
Confl. Peds. (#/hr)			10			10						10
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Free
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	6.4	80.4	80.4	22.8	96.8	150.0	18.7	18.7	18.7	9.7	9.7	150.0
Effective Green, g (s)	7.4	83.8	81.4	23.8	100.2	150.0	19.7	19.7	19.7	10.7	10.7	150.0
Actuated g/C Ratio	0.05	0.56	0.54	0.16	0.67	1.00	0.13	0.13	0.13	0.07	0.07	1.00
Clearance Time (s)	4.0	6.4	6.4	4.0	6.4		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.0	3.7	3.7	2.0	3.7		2.5	2.5	2.5	3.0	3.0	
Lane Grp Cap (vph)	169	3580	834	545	4281	1560	221	227	208	120	122	1560
v/s Ratio Prot	0.00	c0.37		c0.11	0.38		c0.09	0.09		0.02	c0.02	
v/s Ratio Perm			0.08			0.09			0.07			0.00
v/c Ratio	0.09	0.66	0.15	0.70	0.57	0.09	0.69	0.67	0.50	0.33	0.34	0.00
Uniform Delay, d1	68.1	23.2	17.0	59.8	13.3	0.0	62.2	62.1	60.5	66.3	66.3	0.0
Progression Factor	0.76	0.92	1.34	1.07	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.9	0.3	1.6	0.1	0.1	7.9	7.0	1.4	1.6	1.6	0.0
Delay (s)	51.9	22.3	23.2	65.5	10.7	0.1	70.1	69.1	61.9	67.9	67.9	0.0
Level of Service	D	C	C	E	B	A	E	E	E	E	E	A
Approach Delay (s)		22.5			17.3			65.6			62.5	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	1458	792	85	1554	392	915	528	45	943	785	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4	4.0	4.0	6.4	4.0	4.0	6.0	4.0	7.7	6.7	4.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.97	0.91	1.00	0.94	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	3433	5085	1583	4990	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	3433	5085	1583	4990	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	321	1535	834	89	1636	413	963	556	47	993	826	305
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	321	1535	834	89	1636	413	963	556	47	993	826	305
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	15.0	50.8	150.0	7.4	40.8	150.0	42.0	24.3	150.0	43.4	28.7	150.0
Effective Green, g (s)	15.0	50.8	150.0	7.4	40.8	150.0	42.0	24.3	150.0	43.4	28.7	150.0
Actuated g/C Ratio	0.10	0.34	1.00	0.05	0.27	1.00	0.28	0.16	1.00	0.29	0.19	1.00
Clearance Time (s)	6.4	6.4		4.0	6.4		4.0	6.0		7.7	6.7	
Vehicle Extension (s)	2.0	3.7		2.0	4.1		2.0	4.1		3.0	4.5	
Lane Grp Cap (vph)	343	2170	1583	169	1743	1583	961	824	1583	1444	973	1583
v/s Ratio Prot	c0.09	0.24		0.03	c0.26		c0.28	0.11		0.20	c0.16	
v/s Ratio Perm			0.53			0.26			0.03			0.19
v/c Ratio	0.94	0.71	0.53	0.53	0.94	0.26	1.00	0.67	0.03	0.69	0.85	0.19
Uniform Delay, d1	67.0	43.1	0.0	69.6	53.4	0.0	54.0	59.1	0.0	47.3	58.6	0.0
Progression Factor	0.77	0.67	1.00	1.10	0.56	1.00	1.00	1.00	1.00	0.57	0.63	1.00
Incremental Delay, d2	26.9	0.9	1.0	1.1	9.4	0.3	29.5	2.4	0.0	1.2	6.7	0.2
Delay (s)	78.5	29.7	1.0	77.6	39.4	0.3	83.5	61.6	0.0	28.3	43.6	0.2
Level of Service	E	C	A	E	D	A	F	E	A	C	D	A
Approach Delay (s)		26.6			33.5			73.2			30.2	
Approach LOS		C			C			E			C	

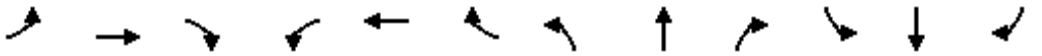
Intersection Summary			
HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	2389	4	13	2076	248	67	0	141	105	1	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	1525	1770	5085	1525	1681	1681	1531	1681	1687	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	1525	1770	5085	1525	1681	1681	1531	1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	2515	4	14	2185	261	71	0	148	111	1	32
RTOR Reduction (vph)	0	0	1	0	0	66	0	0	86	0	0	30
Lane Group Flow (vph)	52	2515	3	14	2185	195	35	36	62	55	57	2
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	9.6	107.9	107.9	2.0	100.3	100.3	10.4	10.4	10.4	11.1	11.1	11.1
Effective Green, g (s)	9.6	107.9	107.9	2.0	100.3	100.3	10.4	10.4	10.4	11.1	11.1	11.1
Actuated g/C Ratio	0.06	0.72	0.72	0.01	0.67	0.67	0.07	0.07	0.07	0.07	0.07	0.07
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	2.0	2.0	3.6	3.6	3.6
Lane Grp Cap (vph)	113	3658	1097	24	3400	1020	117	117	106	124	125	117
v/s Ratio Prot	0.03	c0.49		0.01	c0.43		0.02	0.02		0.03	c0.03	
v/s Ratio Perm			0.00			0.13			c0.04			0.00
v/c Ratio	0.46	0.69	0.00	0.58	0.64	0.19	0.30	0.31	0.59	0.44	0.46	0.02
Uniform Delay, d1	67.7	11.7	5.9	73.6	14.4	9.4	66.3	66.4	67.7	66.5	66.6	64.4
Progression Factor	0.73	0.33	0.10	1.26	0.47	0.17	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.4	0.0	13.3	0.6	0.3	0.5	0.5	5.3	3.1	3.2	0.1
Delay (s)	50.5	4.3	0.6	106.3	7.4	1.9	66.9	66.9	73.0	69.6	69.7	64.5
Level of Service	D	A	A	F	A	A	E	E	E	E	E	E
Approach Delay (s)		5.3			7.3			71.0			68.5	
Approach LOS		A			A			E			E	

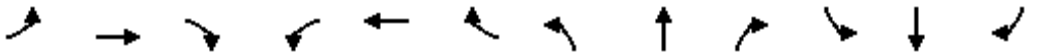
Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	2377	68	307	1923	211	303	233	326	707	96	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3485	6504	1590	3433	5085	1554	3433	5085	1539	3433	5085	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3485	6504	1590	3433	5085	1554	3433	5085	1539	3433	5085	1545
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	2502	72	323	2024	222	319	245	343	744	101	127
RTOR Reduction (vph)	0	0	18	0	0	79	0	0	119	0	0	101
Lane Group Flow (vph)	179	2502	54	323	2024	143	319	245	224	744	101	26
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	62.0	105.5	14.0	68.0	68.0	43.5	21.0	21.0	33.0	10.5	10.5
Effective Green, g (s)	8.0	62.0	105.5	14.0	68.0	68.0	43.5	21.0	21.0	33.0	10.5	10.5
Actuated g/C Ratio	0.05	0.41	0.70	0.09	0.45	0.45	0.29	0.14	0.14	0.22	0.07	0.07
Clearance Time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.8	4.8	2.5	2.5	4.8	4.8	2.5	3.4	3.4	2.5	3.4	3.4
Lane Grp Cap (vph)	186	2688	1161	320	2305	704	996	712	215	755	356	108
v/s Ratio Prot	0.05	c0.38	0.01	c0.09	0.40		0.09	0.05		c0.22	0.02	
v/s Ratio Perm			0.02			0.09			c0.15			0.02
v/c Ratio	0.96	0.93	0.05	1.01	0.88	0.20	0.32	0.34	1.04	0.99	0.28	0.24
Uniform Delay, d1	70.8	42.0	6.8	68.0	37.2	24.7	41.7	58.3	64.5	58.3	66.2	66.0
Progression Factor	1.18	0.61	0.04	0.71	0.51	0.36	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.5	5.7	0.0	44.5	3.2	0.2	0.1	0.3	73.2	28.9	0.5	1.3
Delay (s)	129.8	31.4	0.3	92.9	22.1	9.1	41.8	58.6	137.7	87.1	66.7	67.3
Level of Service	F	C	A	F	C	A	D	E	F	F	E	E
Approach Delay (s)		37.0			29.9			82.6			82.4	
Approach LOS		D			C			F			F	

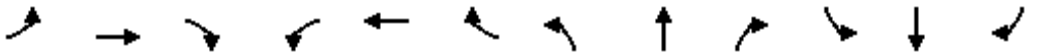
Intersection Summary			
HCM Average Control Delay	46.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	360	2419	704	217	2123	3	187	176	152	14	46	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	6.7	5.7	4.0	4.0	4.6	4.6
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1553	4990	1863	1562	1770	1863	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1553	4990	1863	1562	1770	1863	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	379	2546	741	228	2235	3	197	185	160	15	48	138
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	0	0	0	131
Lane Group Flow (vph)	379	2546	741	228	2235	2	197	185	160	15	48	7
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Free	Prot		Perm	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Actuated Green, G (s)	20.2	92.9	150.0	13.4	86.1	86.1	14.3	22.4	150.0	1.6	8.1	8.1
Effective Green, g (s)	20.2	92.9	150.0	13.4	86.1	86.1	14.3	22.4	150.0	1.6	8.1	8.1
Actuated g/C Ratio	0.13	0.62	1.00	0.09	0.57	0.57	0.10	0.15	1.00	0.01	0.05	0.05
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	6.7	5.7		4.0	4.6	4.6
Vehicle Extension (s)	2.0	4.1		2.0	4.1	4.1	2.0	4.3		2.0	2.0	2.0
Lane Grp Cap (vph)	462	3149	1562	307	2919	891	476	278	1562	19	101	150
v/s Ratio Prot	c0.11	c0.50		0.07	0.44		0.04	c0.10		0.01	0.03	
v/s Ratio Perm			c0.47			0.00			0.10			0.00
v/c Ratio	0.82	0.81	0.47	0.74	0.77	0.00	0.41	0.67	0.10	0.79	0.48	0.05
Uniform Delay, d1	63.1	21.8	0.0	66.6	24.3	13.6	63.9	60.3	0.0	74.0	68.9	67.3
Progression Factor	1.23	0.15	1.00	1.33	0.65	0.18	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.9	0.4	6.9	1.1	0.0	0.2	6.8	0.1	102.4	1.3	0.1
Delay (s)	81.8	4.0	0.4	95.4	16.9	2.5	64.1	67.1	0.1	176.5	70.2	67.3
Level of Service	F	A	A	F	B	A	E	E	A	F	E	E
Approach Delay (s)		11.3			24.2			46.2			76.2	
Approach LOS		B			C			D			E	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



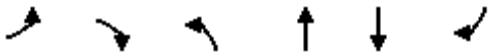
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	354	2032	4	10	1695	111	0	0	0	109	0	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4				6.0	6.0	6.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98				1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)	3433	5084		1770	5085	1555				1681	1681	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)	3433	5084		1770	5085	1555				1681	1681	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	373	2139	4	11	1784	117	0	0	0	115	0	695
RTOR Reduction (vph)	0	0	0	0	0	44	0	0	0	0	0	645
Lane Group Flow (vph)	373	2143	0	11	1784	73	0	0	0	57	58	50
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	22.5	114.8		1.2	93.5	93.5				10.8	10.8	10.8
Effective Green, g (s)	22.5	114.8		1.2	93.5	93.5				10.8	10.8	10.8
Actuated g/C Ratio	0.15	0.77		0.01	0.62	0.62				0.07	0.07	0.07
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4				6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.7		2.0	3.7	3.7				2.0	2.0	2.0
Lane Grp Cap (vph)	515	3891		14	3170	969				121	121	201
v/s Ratio Prot	c0.11	0.42		0.01	c0.35					0.03	c0.03	
v/s Ratio Perm						0.05						0.02
v/c Ratio	0.72	0.55		0.79	0.56	0.08				0.47	0.48	0.25
Uniform Delay, d1	60.8	7.1		74.3	16.4	11.2				66.9	66.9	65.8
Progression Factor	0.61	0.04		0.94	1.01	1.42				1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1		117.2	0.7	0.1				1.1	1.1	0.2
Delay (s)	40.1	0.4		186.9	17.2	16.0				67.9	68.0	66.0
Level of Service	D	A		F	B	B				E	E	E
Approach Delay (s)		6.3			18.1			0.0			66.3	
Approach LOS		A			B			A			E	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

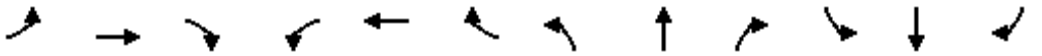
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	102	125	1630	47	64	1935
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	107	132	1716	49	67	2037
RTOR Reduction (vph)	0	119	0	12	0	0
Lane Group Flow (vph)	107	13	1716	37	67	2037
Turn Type		Perm		Perm	Prot	
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	14.9	14.9	110.1	110.1	8.9	123.0
Effective Green, g (s)	14.9	14.9	110.1	110.1	8.9	123.0
Actuated g/C Ratio	0.10	0.10	0.73	0.73	0.06	0.82
Clearance Time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Vehicle Extension (s)	2.5	2.5	3.5	3.5	2.0	3.7
Lane Grp Cap (vph)	176	157	3732	1162	105	4170
v/s Ratio Prot	c0.06		0.34		c0.04	c0.40
v/s Ratio Perm		0.01		0.02		
v/c Ratio	0.61	0.08	0.46	0.03	0.64	0.49
Uniform Delay, d1	64.8	61.3	8.0	5.4	69.0	4.1
Progression Factor	1.00	1.00	0.49	0.46	1.15	0.67
Incremental Delay, d2	4.9	0.2	0.4	0.0	7.9	0.4
Delay (s)	69.7	61.5	4.3	2.5	87.4	3.1
Level of Service	E	E	A	A	F	A
Approach Delay (s)	65.2		4.3			5.7
Approach LOS	E		A			A

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



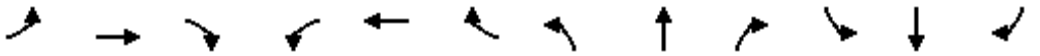
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	118	66	149	1571	1894	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	5085	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	124	69	157	1654	1994	175
RTOR Reduction (vph)	0	63	0	0	0	25
Lane Group Flow (vph)	124	6	157	1654	1994	150
Turn Type		Perm	Prot			Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Actuated Green, G (s)	12.1	12.1	13.5	126.5	108.7	108.7
Effective Green, g (s)	12.1	12.1	13.5	126.5	108.7	108.7
Actuated g/C Ratio	0.08	0.08	0.09	0.84	0.72	0.72
Clearance Time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.1	4.1	4.1
Lane Grp Cap (vph)	277	128	309	4288	3685	1147
v/s Ratio Prot	c0.04		c0.05	0.33	c0.39	
v/s Ratio Perm		0.00				0.10
v/c Ratio	0.45	0.04	0.51	0.39	0.54	0.13
Uniform Delay, d1	65.8	63.6	65.1	2.7	9.4	6.3
Progression Factor	1.00	1.00	1.23	0.63	0.18	0.06
Incremental Delay, d2	0.4	0.1	0.4	0.2	0.5	0.2
Delay (s)	66.2	63.7	80.3	2.0	2.2	0.6
Level of Service	E	E	F	A	A	A
Approach Delay (s)	65.3			8.8	2.1	
Approach LOS	E			A	A	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



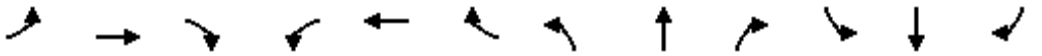
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	11	186	3	39	15	220	1677	8	9	1837	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1718	1583	1770	1784		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.86	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1517	1583	1770	1784		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	12	196	3	41	16	232	1765	8	9	1934	167
RTOR Reduction (vph)	0	0	161	0	9	0	0	0	3	0	0	39
Lane Group Flow (vph)	29	30	35	3	48	0	232	1765	5	9	1934	128
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	4.2	31.2	27.0	0.8	25.6		23.8	100.9	100.9	1.6	78.7	78.7
Effective Green, g (s)	4.2	31.2	27.0	0.8	25.6		23.8	100.9	100.9	1.6	78.7	78.7
Actuated g/C Ratio	0.03	0.21	0.18	0.01	0.17		0.16	0.67	0.67	0.01	0.52	0.52
Clearance Time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	2.5		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	47	321	285	9	304		281	3421	1065	19	2668	831
v/s Ratio Prot	c0.02	c0.00		0.00	c0.03		c0.13	0.35		0.01	c0.38	
v/s Ratio Perm		0.02	0.02						0.00			0.08
v/c Ratio	0.62	0.09	0.12	0.33	0.16		0.83	0.52	0.01	0.47	0.72	0.15
Uniform Delay, d1	72.1	48.0	51.6	74.3	53.0		61.1	12.3	8.1	73.8	27.3	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.58	1.69	1.40	1.06	0.35	0.19
Incremental Delay, d2	15.7	0.2	0.3	7.8	0.2		15.7	0.5	0.0	5.8	1.0	0.1
Delay (s)	87.8	48.1	51.8	82.1	53.2		51.4	21.3	11.3	83.8	10.4	3.6
Level of Service	F	D	D	F	D		D	C	B	F	B	A
Approach Delay (s)		55.5			54.6			24.7			10.2	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.7
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	8	5	146	250	295	32	1540	118	125	1623	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5068	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5068	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	8	5	154	263	311	34	1621	124	132	1708	39
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	2	8	0	154	263	311	34	1621	124	132	1746	0
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	1.1	8.8	8.8	18.8	25.7	150.0	6.4	93.7	150.0	10.1	97.4	
Effective Green, g (s)	1.1	8.8	8.8	18.8	25.7	150.0	6.4	93.7	150.0	10.1	97.4	
Actuated g/C Ratio	0.01	0.06	0.06	0.13	0.17	1.00	0.04	0.62	1.00	0.07	0.65	
Clearance Time (s)	4.0	4.9	4.9	4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	4.3		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	13	109	93	222	606	1583	76	3176	1583	231	3291	
v/s Ratio Prot	0.00	0.00		c0.09	c0.07		0.02	0.32		c0.04	c0.34	
v/s Ratio Perm			0.00			c0.20			0.08			
v/c Ratio	0.15	0.07	0.00	0.69	0.43	0.20	0.45	0.51	0.08	0.57	0.53	
Uniform Delay, d1	74.0	66.7	66.5	62.8	55.6	0.0	70.1	15.5	0.0	67.9	14.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.35	1.00	1.31	0.15	
Incremental Delay, d2	2.0	0.7	0.0	7.4	0.8	0.3	1.1	0.1	0.1	1.6	0.5	
Delay (s)	76.0	67.5	66.5	70.2	56.4	0.3	69.9	5.5	0.1	90.6	2.6	
Level of Service	E	E	E	E	E	A	E	A	A	F	A	
Approach Delay (s)		68.3			35.4			6.4			8.8	
Approach LOS		E			D			A			A	

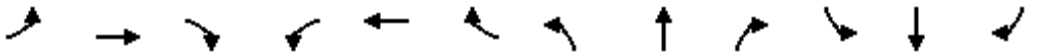
Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	1144	98	44	1699	613	279	1015	62	1038	492	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	5.7	5.7	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.94	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1554	3433	5085	1562	3433	5085	1553	4990	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1554	3433	5085	1562	3433	5085	1553	4990	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	1204	103	46	1788	645	294	1068	65	1093	518	181
RTOR Reduction (vph)	0	0	50	0	0	0	0	0	36	0	0	0
Lane Group Flow (vph)	100	1204	53	46	1788	645	294	1068	29	1093	518	181
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Perm	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			8			Free
Actuated Green, G (s)	5.0	56.8	56.8	4.0	55.8	150.0	16.6	35.6	35.6	33.9	52.9	150.0
Effective Green, g (s)	5.0	56.8	56.8	4.0	55.8	150.0	16.6	35.6	35.6	33.9	52.9	150.0
Actuated g/C Ratio	0.03	0.38	0.38	0.03	0.37	1.00	0.11	0.24	0.24	0.23	0.35	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	3.9	3.9	2.0	3.9		2.0	4.3	4.3	2.0	4.3	
Lane Grp Cap (vph)	114	1926	588	92	1892	1562	380	1207	369	1128	1793	1562
v/s Ratio Prot	c0.03	0.24		0.01	c0.35		0.09	c0.21		c0.22	0.10	
v/s Ratio Perm			0.03			c0.41			0.02			0.12
v/c Ratio	0.88	0.63	0.09	0.50	0.95	0.41	0.77	0.88	0.08	0.97	0.29	0.12
Uniform Delay, d1	72.2	37.9	30.0	72.0	45.6	0.0	64.9	55.2	44.5	57.5	35.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.60	1.00
Incremental Delay, d2	46.8	1.5	0.3	1.6	10.5	0.8	8.7	8.4	0.1	17.8	0.4	0.1
Delay (s)	119.0	39.5	30.3	73.6	56.1	0.8	73.5	63.6	44.6	62.9	21.4	0.1
Level of Service	F	D	C	E	E	A	E	E	D	E	C	A
Approach Delay (s)		44.5			42.1			64.8			44.6	
Approach LOS		D			D			E			D	

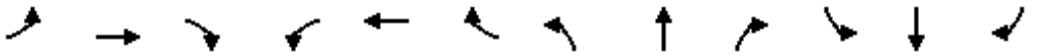
Intersection Summary			
HCM Average Control Delay	47.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	2	22	33	2	141	36	1083	24	70	543	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1778	1583		1779	1583	1770	3528		1770	3538	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1778	1583		1779	1583	1770	3528		1770	3538	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	2	23	35	2	148	38	1140	25	74	572	1
RTOR Reduction (vph)	0	0	21	0	0	118	0	1	0	0	0	0
Lane Group Flow (vph)	0	48	2	0	37	30	38	1164	0	74	573	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		7.6	7.6		15.9	15.9	3.9	37.8		5.3	39.2	
Effective Green, g (s)		8.6	8.6		16.9	16.9	4.9	40.8		6.3	42.2	
Actuated g/C Ratio		0.10	0.10		0.20	0.20	0.06	0.48		0.07	0.50	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		181	161		357	317	103	1708		132	1771	
v/s Ratio Prot		c0.03			c0.02		0.02	c0.33		c0.04	0.16	
v/s Ratio Perm			0.00			0.02						
v/c Ratio		0.27	0.01		0.10	0.09	0.37	0.68		0.56	0.32	
Uniform Delay, d1		34.9	34.0		27.5	27.5	38.2	16.7		37.7	12.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.0	0.0	0.8	1.3		3.2	0.2	
Delay (s)		35.2	34.1		27.6	27.5	39.0	18.1		40.9	12.7	
Level of Service		D	C		C	C	D	B		D	B	
Approach Delay (s)		34.8			27.5			18.7			15.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	84.3	Sum of lost time (s)	11.7
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

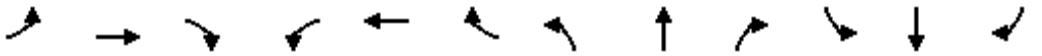


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	193	351	76	680	431	409	760	184	110	386	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1479	1856	3592	1476	3601	3592	1476	3565	5110	1459
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1479	1856	3592	1476	3601	3592	1476	3565	5110	1459
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	203	369	80	716	454	431	800	194	116	406	22
RTOR Reduction (vph)	0	0	108	0	0	246	0	0	95	0	0	16
Lane Group Flow (vph)	16	203	261	80	716	208	431	800	99	116	406	6
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	3.3	27.6	42.8	7.4	31.7	31.7	15.2	31.6	31.6	7.4	23.8	23.8
Effective Green, g (s)	4.3	30.6	44.8	8.4	34.7	34.7	16.2	34.6	34.6	8.4	26.8	26.8
Actuated g/C Ratio	0.05	0.33	0.48	0.09	0.37	0.37	0.17	0.37	0.37	0.09	0.29	0.29
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	85	1177	709	167	1335	548	625	1331	547	321	1466	419
v/s Ratio Prot	0.01	0.06	0.06	c0.04	c0.20		c0.12	c0.22		0.03	0.08	
v/s Ratio Perm			0.11			0.14			0.07			0.00
v/c Ratio	0.19	0.17	0.37	0.48	0.54	0.38	0.69	0.60	0.18	0.36	0.28	0.02
Uniform Delay, d1	42.9	22.4	15.4	40.4	23.0	21.5	36.2	23.8	19.8	40.0	25.8	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.1	0.8	0.6	0.8	2.5	1.0	0.3	0.3	0.2	0.0
Delay (s)	43.3	22.5	15.5	41.2	23.7	22.2	38.8	24.8	20.1	40.2	26.0	23.9
Level of Service	D	C	B	D	C	C	D	C	C	D	C	C
Approach Delay (s)		18.7			24.3			28.4			28.9	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	93.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	729	25	14	1011	80	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	3.0	1.3	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	767	26	15	1064	84	137
RTOR Reduction (vph)	0	13	0	0	0	106
Lane Group Flow (vph)	767	13	15	1064	84	31
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	24.5	24.5	1.0	31.2	10.4	10.4
Effective Green, g (s)	27.2	25.5	2.0	33.9	11.4	11.4
Actuated g/C Ratio	0.55	0.51	0.04	0.68	0.23	0.23
Clearance Time (s)	5.7	5.7	4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1941	814	71	2419	407	364
v/s Ratio Prot	0.22		0.01	c0.30	c0.05	
v/s Ratio Perm		0.01				0.02
v/c Ratio	0.40	0.02	0.21	0.44	0.21	0.09
Uniform Delay, d1	6.5	5.9	23.0	3.6	15.4	15.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.5	0.2	0.1	0.0
Delay (s)	6.7	5.9	23.6	3.8	15.5	15.0
Level of Service	A	A	C	A	B	B
Approach Delay (s)	6.7			4.1	15.2	
Approach LOS	A			A	B	

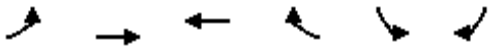
Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	4.3
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	169	571	62	372	235	623	1483	39	83	653	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	114	178	601	65	392	247	656	1561	41	87	687	18
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	114	178	601	65	392	247	656	1561	41	87	687	18
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.3	21.3	120.0	8.0	20.4	120.0	27.4	64.6	120.0	6.4	43.6	120.0
Effective Green, g (s)	10.3	24.0	120.0	9.0	23.1	120.0	28.4	67.6	120.0	7.4	46.6	120.0
Actuated g/C Ratio	0.09	0.20	1.00	0.08	0.19	1.00	0.24	0.56	1.00	0.06	0.39	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	295	708	1562	257	681	1562	812	2865	1562	212	1975	1562
v/s Ratio Prot	0.03	0.05		0.02	c0.11		c0.19	c0.31		0.03	0.14	
v/s Ratio Perm			c0.38			0.16			0.03			0.01
v/c Ratio	0.39	0.25	0.38	0.25	0.58	0.16	0.81	0.54	0.03	0.41	0.35	0.01
Uniform Delay, d1	51.9	40.4	0.0	52.3	44.0	0.0	43.2	16.5	0.0	54.2	26.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.7	0.2	1.6	0.2	5.6	0.7	0.0	0.5	0.2	0.0
Delay (s)	52.2	40.8	0.7	52.5	45.6	0.2	48.8	17.3	0.0	54.7	26.1	0.0
Level of Service	D	D	A	D	D	A	D	B	A	D	C	A
Approach Delay (s)		15.3			30.3			26.1			28.7	
Approach LOS		B			C			C			C	

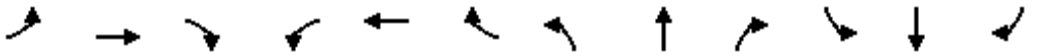
Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.6
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	128	847	611	396	402	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1511	1736	1535
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1511	1736	1535
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	135	892	643	417	423	145
RTOR Reduction (vph)	0	0	0	227	0	57
Lane Group Flow (vph)	135	892	643	190	423	88
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	4.6	25.0	28.0	28.0	19.0	23.6
Effective Green, g (s)	5.6	27.0	30.0	30.0	22.0	29.6
Actuated g/C Ratio	0.08	0.41	0.46	0.46	0.33	0.45
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	148	1422	1580	688	580	689
v/s Ratio Prot	c0.08	c0.26	c0.19		c0.24	0.01
v/s Ratio Perm				0.13		0.04
v/c Ratio	0.91	0.63	0.41	0.28	0.73	0.13
Uniform Delay, d1	29.9	15.5	12.0	11.2	19.3	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.9	0.9	0.2	0.2	3.9	0.0
Delay (s)	77.8	16.3	12.2	11.4	23.2	10.6
Level of Service	E	B	B	B	C	B
Approach Delay (s)		24.4	11.9		20.0	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	192	765	11	63	990	120	31	3	30	126	5	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00			1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3431		1787	3438	1487	1787	1623			1694	1446
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3431		1787	3438	1487	1787	1623			1694	1446
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	202	805	12	66	1042	126	33	3	32	133	5	27
RTOR Reduction (vph)	0	1	0	0	0	71	0	29	0	0	0	0
Lane Group Flow (vph)	202	816	0	66	1042	55	33	6	0	0	138	27
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	8.2	30.0		2.7	24.5	24.5	4.7	4.7			5.1	5.1
Effective Green, g (s)	9.2	32.0		3.7	26.5	26.5	5.7	5.7			6.1	6.1
Actuated g/C Ratio	0.15	0.53		0.06	0.44	0.44	0.09	0.09			0.10	0.10
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	263	1824		110	1513	655	169	154			172	147
v/s Ratio Prot	c0.12	0.24		0.04	c0.30		c0.02	0.00			c0.08	
v/s Ratio Perm						0.04						0.02
v/c Ratio	0.77	0.45		0.60	0.69	0.08	0.20	0.04			0.80	0.18
Uniform Delay, d1	24.5	8.7		27.5	13.5	9.8	25.1	24.8			26.5	24.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	11.4	0.2		5.8	1.3	0.1	0.2	0.0			23.0	0.6
Delay (s)	35.9	8.8		33.3	14.9	9.9	25.3	24.8			49.4	25.4
Level of Service	D	A		C	B	A	C	C			D	C
Approach Delay (s)		14.2			15.3			25.1			45.5	
Approach LOS		B			B			C			D	

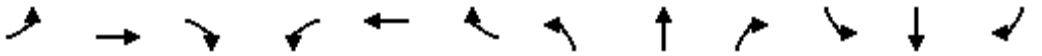
Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	12.7
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	964	278	347	858	131	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1564	1770	3539	1770	1571
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1564	1770	3539	1770	1571
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1015	293	365	903	138	227
RTOR Reduction (vph)	0	58	0	0	0	8
Lane Group Flow (vph)	1015	235	365	903	138	219
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	23.3	32.9	13.1	40.4	9.6	22.7
Effective Green, g (s)	25.3	34.9	14.1	42.4	10.6	24.7
Actuated g/C Ratio	0.42	0.58	0.23	0.71	0.18	0.41
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1492	988	416	2501	313	725
v/s Ratio Prot	c0.29	0.04	c0.21	0.26	c0.08	0.07
v/s Ratio Perm		0.11				0.07
v/c Ratio	0.68	0.24	0.88	0.36	0.44	0.30
Uniform Delay, d1	14.1	6.1	22.1	3.5	22.1	11.9
Progression Factor	1.00	1.00	1.11	1.07	1.00	1.00
Incremental Delay, d2	1.3	0.0	17.5	0.4	0.4	0.1
Delay (s)	15.4	6.1	42.0	4.1	22.4	11.9
Level of Service	B	A	D	A	C	B
Approach Delay (s)	13.3			15.0	15.9	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

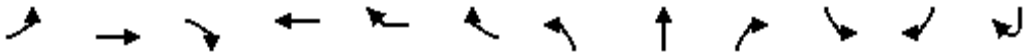
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	956	247	597	615	0	0	0	1140	0	0	618
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	4.0	4.0				4.0			5.0
Lane Util. Factor		0.91	1.00	0.97	0.95				1.00			1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00				1.00			1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00				1.00			1.00
Frt		1.00	0.85	1.00	1.00				0.86			0.86
Flt Protected		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (prot)		5085	1554	3433	3539				1611			1611
Flt Permitted		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (perm)		5085	1554	3433	3539				1611			1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1006	260	628	647	0	0	0	1200	0	0	651
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1006	202	628	647	0	0	0	1200	0	0	651
Confl. Peds. (#/hr)			5									
Turn Type			Perm	Prot					Free			custom
Protected Phases		2		1								
Permitted Phases			2		Free				Free			4
Actuated Green, G (s)		34.8	34.8	15.5	60.0				60.0			60.0
Effective Green, g (s)		34.8	34.8	15.5	60.0				60.0			60.0
Actuated g/C Ratio		0.58	0.58	0.26	1.00				1.00			1.00
Clearance Time (s)		5.7	5.7	4.0								5.0
Vehicle Extension (s)		3.4	3.4	2.0								3.0
Lane Grp Cap (vph)		2949	901	887	3539				1611			1611
v/s Ratio Prot		0.20		0.18								
v/s Ratio Perm			0.13		0.18				c0.74			0.40
v/c Ratio		0.34	0.22	0.71	0.18				0.74			0.40
Uniform Delay, d1		6.6	6.1	20.2	0.0				0.0			0.0
Progression Factor		0.38	0.18	1.23	1.00				1.00			1.00
Incremental Delay, d2		0.3	0.5	1.2	0.1				3.2			0.2
Delay (s)		2.8	1.5	25.9	0.1				3.2			0.2
Level of Service		A	A	C	A				A			A
Approach Delay (s)		2.5			12.8			3.2			0.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

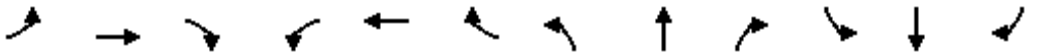
c Critical Lane Group



Movement	EBL	EBT	EBR	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL	SBR	SBR2
Lane Configurations												
Volume (vph)	198	1669	229	718	1060	307	161	371	718	91	333	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	5.7	5.7	5.7	4.0	5.3	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	0.86	0.86	1.00	1.00	0.95	1.00	0.97	0.88	
Frpb, ped/bikes	1.00	1.00	0.98	0.99	1.00	1.00	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	0.94	0.85	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1548	4467	1362	1583	1770	3539	1562	3433	2787	
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1548	4467	1362	1583	1770	3539	1562	3433	2787	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	208	1757	241	756	1116	323	169	391	756	96	351	63
RTOR Reduction (vph)	0	0	0	0	0	174	0	0	0	0	14	0
Lane Group Flow (vph)	208	1757	241	1314	558	149	169	391	756	96	400	0
Confl. Peds. (#/hr)			5		5				5		5	
Turn Type	Prot		Free		Prot	Perm	Prot		Free	Prot	custom	
Protected Phases	5	2		6	6		3	8		7	5	
Permitted Phases			Free			6			Free		4	
Actuated Green, G (s)	14.0	73.4	120.0	55.4	55.4	55.4	36.9	21.6	120.0	10.0	14.0	
Effective Green, g (s)	14.0	73.4	120.0	55.4	55.4	55.4	36.9	21.6	120.0	10.0	14.0	
Actuated g/C Ratio	0.12	0.61	1.00	0.46	0.46	0.46	0.31	0.18	1.00	0.08	0.12	
Clearance Time (s)	4.0	5.7		5.7	5.7	5.7	4.0	5.3		4.0	4.0	
Vehicle Extension (s)	2.0	3.4		3.4	3.4	3.4	4.0	4.0		2.0	2.0	
Lane Grp Cap (vph)	401	2165	1548	2062	629	731	544	637	1562	286	325	
v/s Ratio Prot	0.06	0.50		0.29	c0.41		0.10	c0.11		0.03	c0.14	
v/s Ratio Perm			0.16			0.09			c0.48			
v/c Ratio	0.52	0.81	0.16	0.64	0.89	0.20	0.31	0.61	0.48	0.34	1.23	
Uniform Delay, d1	49.8	18.0	0.0	24.6	29.4	19.2	31.8	45.4	0.0	51.9	53.0	
Progression Factor	0.97	0.89	1.00	0.48	0.48	0.10	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	2.8	0.2	0.6	13.1	0.1	0.4	2.0	1.1	0.3	127.7	
Delay (s)	48.8	18.8	0.2	12.4	27.3	2.1	32.3	47.4	1.1	52.1	180.7	
Level of Service	D	B	A	B	C	A	C	D	A	D	F	
Approach Delay (s)		19.6		14.6				18.8				
Approach LOS		B		B				B				

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

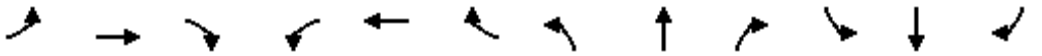
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	192	1964	335	70	1756	32	160	258	143	179	281	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.3	4.0	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.94	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	6408	1562	4990	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	6408	1562	4990	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	202	2067	353	74	1848	34	168	272	151	188	296	168
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	202	2067	353	74	1848	34	168	272	151	188	296	168
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.2	69.1	120.0	7.2	64.1	120.0	10.8	13.7	120.0	11.0	13.5	120.0
Effective Green, g (s)	12.2	69.1	120.0	7.2	64.1	120.0	10.8	13.7	120.0	11.0	13.5	120.0
Actuated g/C Ratio	0.10	0.58	1.00	0.06	0.53	1.00	0.09	0.11	1.00	0.09	0.11	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	3.9		2.0	3.5	
Lane Grp Cap (vph)	349	2928	1562	206	3423	1562	449	581	1562	315	572	1562
v/s Ratio Prot	0.06	c0.41		0.02	c0.29		0.03	c0.05		c0.05	0.06	
v/s Ratio Perm			c0.23			0.02			0.10			0.11
v/c Ratio	0.58	0.71	0.23	0.36	0.54	0.02	0.37	0.47	0.10	0.60	0.52	0.11
Uniform Delay, d1	51.4	18.2	0.0	54.2	18.3	0.0	51.4	49.7	0.0	52.4	50.2	0.0
Progression Factor	0.76	0.47	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.6	0.2	0.4	0.6	0.0	0.2	0.8	0.1	2.0	0.9	0.1
Delay (s)	40.3	9.2	0.2	54.6	18.9	0.0	51.6	50.5	0.1	54.4	51.1	0.1
Level of Service	D	A	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		10.4			19.9			38.0			38.9	
Approach LOS		B			B			D			D	

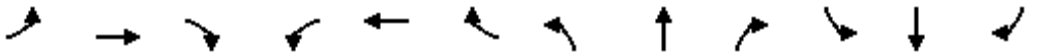
Intersection Summary					
HCM Average Control Delay	19.6	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.64				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		15.4	
Intersection Capacity Utilization	79.5%	ICU Level of Service		D	
Analysis Period (min)	15				

c Critical Lane Group



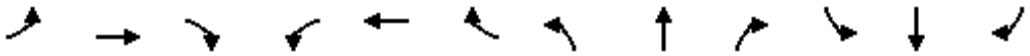
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	406	204	4	39	138	47	6	1262	82	54	1436	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.5	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	427	215	4	41	145	49	6	1328	86	57	1512	258
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	427	215	4	41	145	49	6	1328	86	57	1512	258
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	19.1	26.8	120.0	5.5	12.9	120.0	0.6	61.4	120.0	6.9	67.7	120.0
Effective Green, g (s)	20.1	29.3	120.0	6.5	15.4	120.0	1.6	63.9	120.0	7.9	70.2	120.0
Actuated g/C Ratio	0.17	0.24	1.00	0.05	0.13	1.00	0.01	0.53	1.00	0.07	0.59	1.00
Clearance Time (s)	4.0	5.7		4.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.3		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	575	864	1583	96	454	1583	24	2708	1583	117	2975	1583
v/s Ratio Prot	c0.12	0.06		0.02	c0.04		0.00	c0.26		0.03	c0.30	
v/s Ratio Perm			0.00			0.03			0.05			0.16
v/c Ratio	0.74	0.25	0.00	0.43	0.32	0.03	0.25	0.49	0.05	0.49	0.51	0.16
Uniform Delay, d1	47.5	36.5	0.0	54.9	47.5	0.0	58.6	17.7	0.0	54.1	14.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	0.2	0.0	1.1	0.5	0.0	2.0	0.2	0.1	1.2	0.6	0.2
Delay (s)	52.0	36.7	0.0	56.1	48.1	0.0	60.6	18.0	0.1	55.3	15.3	0.2
Level of Service	D	D	A	E	D	A	E	B	A	E	B	A
Approach Delay (s)		46.6			39.5			17.1			14.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



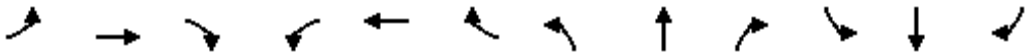
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	127	133	67	180	92	121	1243	51	172	1133	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	134	140	71	189	97	127	1308	54	181	1193	9
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	60	134	140	71	189	97	127	1308	54	181	1193	9
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.9	12.7	120.0	7.7	13.5	120.0	12.9	62.9	120.0	16.6	66.6	120.0
Effective Green, g (s)	7.9	15.2	120.0	8.7	16.0	120.0	13.9	65.4	120.0	17.6	69.1	120.0
Actuated g/C Ratio	0.07	0.13	1.00	0.07	0.13	1.00	0.12	0.55	1.00	0.15	0.58	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	117	448	1583	128	472	1583	205	2771	1583	260	2928	1583
v/s Ratio Prot	0.03	0.04		c0.04	c0.05		c0.07	c0.26		c0.10	0.23	
v/s Ratio Perm			c0.09			0.06			0.03			0.01
v/c Ratio	0.51	0.30	0.09	0.55	0.40	0.06	0.62	0.47	0.03	0.70	0.41	0.01
Uniform Delay, d1	54.2	47.6	0.0	53.8	47.6	0.0	50.5	16.7	0.0	48.7	14.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.4	0.1	2.9	0.7	0.1	3.9	0.6	0.0	6.4	0.1	0.0
Delay (s)	55.8	48.0	0.1	56.7	48.4	0.1	54.4	17.3	0.0	55.1	14.3	0.0
Level of Service	E	D	A	E	D	A	D	B	A	E	B	A
Approach Delay (s)		29.3			36.9			19.8			19.5	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



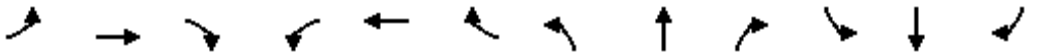
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	173	1258	444	61	1309	570	603	503	19	459	447	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	6.0		4.0	6.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91		0.94	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5058		4990	5045	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5058		4990	5045	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	182	1324	467	64	1378	600	635	529	20	483	471	26
RTOR Reduction (vph)	0	0	210	0	0	0	0	3	0	0	5	0
Lane Group Flow (vph)	182	1324	257	64	1378	600	635	546	0	483	492	0
Turn Type	Prot		Perm	Prot		Free	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free						
Actuated Green, G (s)	9.9	53.9	53.9	4.5	48.5	120.0	26.0	26.3		15.3	15.6	
Effective Green, g (s)	9.9	53.9	53.9	4.5	48.5	120.0	26.0	26.3		15.3	15.6	
Actuated g/C Ratio	0.08	0.45	0.45	0.04	0.40	1.00	0.22	0.22		0.13	0.13	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	283	2284	711	129	2055	1583	744	1109		636	656	
v/s Ratio Prot	0.05	c0.26		0.02	c0.27		c0.18	0.11		0.10	c0.10	
v/s Ratio Perm			0.16			0.38						
v/c Ratio	0.64	0.58	0.36	0.50	0.67	0.38	0.85	0.49		0.76	0.75	
Uniform Delay, d1	53.3	24.6	21.7	56.6	29.2	0.0	45.2	41.0		50.6	50.3	
Progression Factor	0.67	0.96	1.63	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.8	0.4	0.4	1.1	1.8	0.7	9.0	0.5		4.6	5.0	
Delay (s)	38.6	24.0	35.8	57.7	31.0	0.7	54.2	41.5		55.2	55.3	
Level of Service	D	C	D	E	C	A	D	D		E	E	
Approach Delay (s)		28.2			22.9			48.3			55.2	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



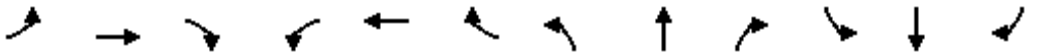
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	0	0	32	6	61	14	1110	13	35	506	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0				3.0	3.0	3.0	4.7		3.0	4.7	
Lane Util. Factor	1.00				1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00				1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770				1787	1583	1770	3533		1770	3535	
Flt Permitted	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770				1787	1583	1770	3533		1770	3535	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	0	0	34	6	64	15	1168	14	37	533	4
RTOR Reduction (vph)	0	0	0	0	0	55	0	1	0	0	0	0
Lane Group Flow (vph)	35	0	0	0	40	9	15	1181	0	37	537	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						4						
Actuated Green, G (s)	4.9				8.9	8.9	1.1	39.3		3.5	41.7	
Effective Green, g (s)	5.9				9.9	9.9	2.1	40.3		4.5	42.7	
Actuated g/C Ratio	0.08				0.13	0.13	0.03	0.54		0.06	0.57	
Clearance Time (s)	4.0				4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0				2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	141				238	211	50	1916		107	2032	
v/s Ratio Prot	c0.02				c0.02		0.01	c0.33		c0.02	0.15	
v/s Ratio Perm						0.01						
v/c Ratio	0.25				0.17	0.04	0.30	0.62		0.35	0.26	
Uniform Delay, d1	32.1				28.5	28.1	35.4	11.7		33.5	7.9	
Progression Factor	1.00				1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3				0.1	0.0	1.2	0.8		0.7	0.1	
Delay (s)	32.5				28.7	28.1	36.6	12.5		34.2	8.0	
Level of Service	C				C	C	D	B		C	A	
Approach Delay (s)		32.5			28.3			12.8			9.7	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	13.7
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



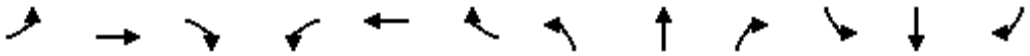
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	399	28	34	1107	70	43	5	16	22	17	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3505		1770	3539	1583		1783	1583		1812	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	3505		1770	3539	1583		1783	1583		1812	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	420	29	36	1165	74	45	5	17	23	18	8
RTOR Reduction (vph)	0	4	0	0	0	32	0	0	15	0	0	7
Lane Group Flow (vph)	61	445	0	36	1165	42	0	50	2	0	41	1
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	3.1	35.9		1.7	34.5	34.5		5.6	5.6		6.8	6.8
Effective Green, g (s)	4.1	38.9		2.7	37.5	35.5		6.6	6.6		7.8	7.8
Actuated g/C Ratio	0.06	0.57		0.04	0.55	0.52		0.10	0.10		0.12	0.12
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	107	2014		71	1960	830		174	154		209	182
v/s Ratio Prot	c0.03	0.13		0.02	c0.33			c0.03			c0.02	
v/s Ratio Perm						0.03			0.00			0.00
v/c Ratio	0.57	0.22		0.51	0.59	0.05		0.29	0.01		0.20	0.01
Uniform Delay, d1	30.9	7.0		31.8	10.0	7.9		28.4	27.6		27.1	26.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	4.5	0.2		2.1	1.0	0.1		0.3	0.0		0.2	0.0
Delay (s)	35.4	7.2		33.9	11.0	7.9		28.7	27.6		27.3	26.5
Level of Service	D	A		C	B	A		C	C		C	C
Approach Delay (s)		10.6			11.5			28.4			27.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	11.7
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	162	260	66	28	595	311	442	1262	34	203	708	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	171	274	69	29	626	327	465	1328	36	214	745	172
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	171	274	69	29	626	327	465	1328	36	214	745	172
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	15.2	36.6	120.0	6.0	27.4	120.0	22.3	47.0	120.0	11.0	35.7	120.0
Effective Green, g (s)	16.2	39.1	120.0	7.0	29.9	120.0	23.3	50.0	120.0	12.0	38.7	120.0
Actuated g/C Ratio	0.13	0.33	1.00	0.06	0.25	1.00	0.19	0.42	1.00	0.10	0.32	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	239	1153	1583	200	882	1583	667	2119	1583	343	1640	1583
v/s Ratio Prot	c0.10	0.08		0.01	c0.18		0.14	c0.26		c0.06	0.15	
v/s Ratio Perm			0.04			0.21			0.02			0.11
v/c Ratio	0.72	0.24	0.04	0.14	0.71	0.21	0.70	0.63	0.02	0.62	0.45	0.11
Uniform Delay, d1	49.7	29.6	0.0	53.7	41.1	0.0	45.1	27.6	0.0	51.8	32.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	0.2	0.1	0.1	3.0	0.3	2.6	0.7	0.0	2.5	0.9	0.1
Delay (s)	57.9	29.7	0.1	53.8	44.1	0.3	47.6	28.4	0.0	54.4	33.2	0.1
Level of Service	E	C	A	D	D	A	D	C	A	D	C	A
Approach Delay (s)		35.1			29.8			32.7			32.2	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.9
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	449	0	0	194	272	2	2	0	436	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0		3.0	3.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		0.95	0.95	
Frt		1.00			1.00	0.85		1.00		1.00	0.99	
Flt Protected		1.00			1.00	1.00		0.98		0.95	0.95	
Satd. Flow (prot)		3539			1863	1583		1817		1681	1679	
Flt Permitted		1.00			1.00	1.00		1.00		0.95	0.95	
Satd. Flow (perm)		3539			1863	1583		1863		1681	1679	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	473	0	0	204	286	2	2	0	459	0	8
RTOR Reduction (vph)	0	0	0	0	0	119	0	0	0	0	3	0
Lane Group Flow (vph)	0	473	0	0	204	167	0	4	0	234	230	0
Turn Type						pt+ov	Perm			Split		
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases							3					
Actuated Green, G (s)		18.7			12.2	23.0		0.4		10.8	10.8	
Effective Green, g (s)		19.7			13.2	25.0		1.4		11.8	11.8	
Actuated g/C Ratio		0.46			0.31	0.58		0.03		0.28	0.28	
Clearance Time (s)		4.9			4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1			3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1629			575	925		61		463	463	
v/s Ratio Prot		c0.13			c0.11	0.11				c0.14	0.14	
v/s Ratio Perm								c0.00				
v/c Ratio		0.29			0.35	0.18		0.07		0.51	0.50	
Uniform Delay, d1		7.2			11.5	4.1		20.1		13.0	13.0	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.4	0.1		0.2		0.3	0.3	
Delay (s)		7.3			11.9	4.2		20.2		13.4	13.3	
Level of Service		A			B	A		C		B	B	
Approach Delay (s)		7.3			7.4			20.2			13.3	
Approach LOS		A			A			C			B	

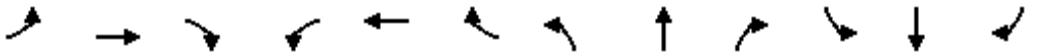
Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	42.8	Sum of lost time (s)	13.8
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	891	5	3	482	0	11	0	11	115	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9		3.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		1.00	1.00	
Frt		1.00		1.00	1.00			0.93		1.00	0.85	
Flt Protected		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3536		1770	3539			1695		1770	1583	
Flt Permitted		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3536		1770	3539			1695		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	938	5	3	507	0	12	0	12	121	0	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	12	0	0	3	0
Lane Group Flow (vph)	0	943	0	3	507	0	0	12	0	121	1	0
Turn Type				Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)		26.7		1.0	31.7			1.0		8.1	8.1	
Effective Green, g (s)		27.7		2.0	32.7			2.0		9.1	9.1	
Actuated g/C Ratio		0.52		0.04	0.61			0.04		0.17	0.17	
Clearance Time (s)		4.9		4.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1		2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1824		66	2155			63		300	268	
v/s Ratio Prot		c0.27		0.00	c0.14			c0.01		c0.07	0.00	
v/s Ratio Perm												
v/c Ratio		0.52		0.05	0.24			0.20		0.40	0.00	
Uniform Delay, d1		8.6		24.9	4.8			25.1		19.9	18.5	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.3		0.1	0.1			0.6		0.3	0.0	
Delay (s)		8.8		25.0	4.9			25.6		20.2	18.5	
Level of Service		A		C	A			C		C	B	
Approach Delay (s)		8.8			5.0			25.6			20.2	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	13.8
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

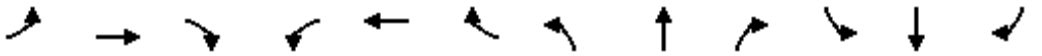
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1011	15	88	534	49	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		3.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3531		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3531		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1064	16	93	562	52	267
RTOR Reduction (vph)	1	0	0	0	0	160
Lane Group Flow (vph)	1079	0	93	562	52	107
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	23.6		3.1	30.7	7.7	7.7
Effective Green, g (s)	24.6		4.1	31.7	8.7	8.7
Actuated g/C Ratio	0.52		0.09	0.67	0.18	0.18
Clearance Time (s)	4.9		4.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	1836		153	2372	326	291
v/s Ratio Prot	c0.31		c0.05	0.16	0.03	
v/s Ratio Perm						c0.07
v/c Ratio	0.59		0.61	0.24	0.16	0.37
Uniform Delay, d1	7.8		20.8	3.1	16.2	16.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5		4.6	0.1	0.1	0.3
Delay (s)	8.3		25.4	3.1	16.3	17.2
Level of Service	A		C	A	B	B
Approach Delay (s)	8.3			6.3	17.0	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	9.9
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



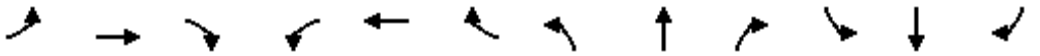
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	1174	4	34	729	73	4	6	12	378	4	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3538		1770	3491			1706		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3538		1770	3491			1706		1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	1236	4	36	767	77	4	6	13	398	4	39
RTOR Reduction (vph)	0	0	0	0	5	0	0	13	0	0	0	22
Lane Group Flow (vph)	52	1240	0	36	839	0	0	10	0	199	203	17
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	6.8	76.4		4.1	73.7			2.4		19.6	19.6	19.6
Effective Green, g (s)	7.8	77.4		5.1	74.7			3.4		20.6	20.6	20.6
Actuated g/C Ratio	0.06	0.65		0.04	0.62			0.03		0.17	0.17	0.17
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	115	2282		75	2173			48		289	290	272
v/s Ratio Prot	c0.03	c0.35		0.02	0.24			c0.01		0.12	c0.12	
v/s Ratio Perm												0.01
v/c Ratio	0.45	0.54		0.48	0.39			0.22		0.69	0.70	0.06
Uniform Delay, d1	54.0	11.6		56.2	11.3			57.0		46.7	46.8	41.6
Progression Factor	1.00	1.00		1.40	0.25			1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.9		1.6	0.1			0.8		6.1	6.7	0.1
Delay (s)	55.1	12.6		79.9	2.9			57.8		52.8	53.4	41.7
Level of Service	E	B		E	A			E		D	D	D
Approach Delay (s)		14.3			6.1			57.8			52.1	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



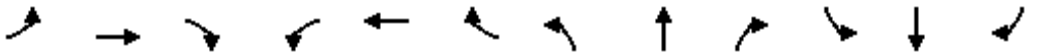
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	215	1343	16	70	662	909	19	8	29	685	11	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	1.00	*0.80		1.00	0.95	1.00	1.00	1.00	1.00	*0.70	*0.70	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	2975		1770	3539	1583	1770	1863	1583	1239	1244	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	2975		1770	3539	1583	1770	1863	1583	1239	1244	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	226	1414	17	74	697	957	20	8	31	721	12	195
RTOR Reduction (vph)	0	1	0	0	0	505	0	0	30	0	0	138
Lane Group Flow (vph)	226	1430	0	74	697	452	20	8	1	368	365	57
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	16.0	58.9		5.0	47.9	47.9	3.2	3.2	3.2	35.1	35.1	35.1
Effective Green, g (s)	16.0	58.9		5.0	47.9	47.9	3.2	3.2	3.2	35.1	35.1	35.1
Actuated g/C Ratio	0.13	0.49		0.04	0.40	0.40	0.03	0.03	0.03	0.29	0.29	0.29
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.3		2.0	3.5	3.5	2.0	2.0	2.0	2.3	2.3	2.3
Lane Grp Cap (vph)	236	1460		74	1413	632	47	50	42	362	364	463
v/s Ratio Prot	c0.13	c0.48		0.04	0.20		c0.01	0.00		c0.30	0.29	
v/s Ratio Perm						0.29			0.00			0.04
v/c Ratio	0.96	0.98		1.00	0.49	0.72	0.43	0.16	0.02	1.02	1.00	0.12
Uniform Delay, d1	51.7	30.0		57.5	27.0	30.3	57.5	57.1	56.9	42.5	42.5	31.2
Progression Factor	1.03	0.80		1.10	0.85	1.75	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	42.4	17.7		57.5	0.1	1.2	2.2	0.5	0.1	51.6	47.9	0.1
Delay (s)	95.6	41.7		120.7	23.0	54.3	59.7	57.6	56.9	94.0	90.3	31.2
Level of Service	F	D		F	C	D	E	E	E	F	F	C
Approach Delay (s)		49.1			44.5			58.0			79.4	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	53.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



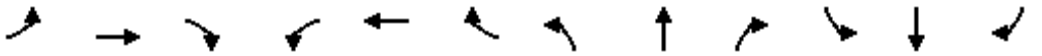
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1011	331	0	1478	1050	0	0	0	226	611	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.9		2.9	3.0				3.7	4.3	3.7
Lane Util. Factor		0.95	1.00		0.91	0.91				0.95	*0.85	1.00
Frt		1.00	0.85		0.98	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3539	1583		3308	1441				1681	1580	1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3539	1583		3308	1441				1681	1580	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1064	348	0	1556	1105	0	0	0	238	643	162
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	1064	348	0	1841	807	0	0	0	214	667	150
Turn Type			Prot			Free				Split		Prot
Protected Phases		2	2		6					4	4	4
Permitted Phases						Free						
Actuated Green, G (s)		62.1	62.1		62.1	120.0				47.7	47.7	47.7
Effective Green, g (s)		63.7	63.1		64.1	120.0				49.3	48.7	49.3
Actuated g/C Ratio		0.53	0.53		0.53	1.00				0.41	0.41	0.41
Clearance Time (s)		4.9	4.9		4.9					5.3	5.3	5.3
Vehicle Extension (s)		3.8	3.8		3.8					2.0	2.0	2.0
Lane Grp Cap (vph)		1879	832		1767	1441				691	641	650
v/s Ratio Prot		0.30	0.22		c0.56					0.13	c0.42	0.09
v/s Ratio Perm						0.56						
v/c Ratio		0.57	0.42		1.04	0.56				0.31	1.04	0.23
Uniform Delay, d1		18.9	17.3		28.0	0.0				23.9	35.6	23.0
Progression Factor		0.66	0.67		0.78	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.3	0.4		29.3	1.0				0.1	46.5	0.1
Delay (s)		12.9	12.1		51.1	1.0				24.0	82.2	23.1
Level of Service		B	B		D	A				C	F	C
Approach Delay (s)		12.7			35.9			0.0			61.0	
Approach LOS		B			D			A			E	

Intersection Summary			
HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	205	1032	0	0	1545	270	0	0	1389	0	0	983
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.0			3.0			2.0
Lane Util. Factor	1.00	0.86			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			4794	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			4794	1362			1611			2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	1086	0	0	1626	284	0	0	1462	0	0	1035
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	9
Lane Group Flow (vph)	216	1086	0	0	1651	256	0	0	1462	0	0	1026
Turn Type	Prot					Free			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						Free			Free			
Actuated Green, G (s)	23.9	60.0			27.2	60.0			60.0			23.9
Effective Green, g (s)	25.9	60.0			29.2	60.0			60.0			25.9
Actuated g/C Ratio	0.43	1.00			0.49	1.00			1.00			0.43
Clearance Time (s)	4.0	4.9			4.9							4.0
Vehicle Extension (s)	2.0	3.9			3.8							2.0
Lane Grp Cap (vph)	764	6408			2333	1362			1611			1203
v/s Ratio Prot	0.12	0.17			0.34							0.37
v/s Ratio Perm						0.19			c0.91			
v/c Ratio	0.28	0.17			0.71	0.19			0.91			0.85
Uniform Delay, d1	11.0	0.0			12.1	0.0			0.0			15.3
Progression Factor	0.85	1.00			1.10	1.00			1.00			1.00
Incremental Delay, d2	0.1	0.0			1.6	0.3			9.0			5.8
Delay (s)	9.5	0.0			14.9	0.3			9.0			21.2
Level of Service	A	A			B	A			A			C
Approach Delay (s)		1.6			12.9			9.0			21.2	
Approach LOS		A			B			A			C	

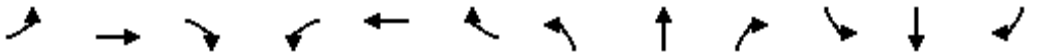
Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	388	1819	214	109	1334	65	319	557	75	54	170	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9	4.9	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1554	3433	6358		3433	3539	1547	3433	5085	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1554	3433	6358		3433	3539	1547	3433	5085	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	408	1915	225	115	1404	68	336	586	79	57	179	171
RTOR Reduction (vph)	0	0	78	0	5	0	0	0	59	0	0	6
Lane Group Flow (vph)	408	1915	147	115	1467	0	336	586	20	57	179	165
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		custom	Prot			Prot		Perm	Prot		custom
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2 3						8			4 5
Actuated Green, G (s)	18.5	61.5	82.6	6.8	49.8		17.1	29.9	29.9	4.0	16.4	34.9
Effective Green, g (s)	18.5	61.5	78.6	6.8	49.8		17.1	29.9	29.9	4.0	16.4	34.9
Actuated g/C Ratio	0.15	0.51	0.65	0.06	0.41		0.14	0.25	0.25	0.03	0.14	0.29
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.9	4.9	4.0	5.3	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5	4.5	2.0	5.1	
Lane Grp Cap (vph)	529	2606	1018	195	2639		489	882	385	114	695	452
v/s Ratio Prot	0.12	c0.38		0.03	c0.23		c0.10	c0.17		0.02	0.04	
v/s Ratio Perm			0.09						0.01			0.11
v/c Ratio	0.77	0.73	0.14	0.59	0.56		0.69	0.66	0.05	0.50	0.26	0.37
Uniform Delay, d1	48.7	22.9	7.9	55.2	26.7		48.9	40.5	34.3	57.0	46.4	33.8
Progression Factor	0.93	0.85	0.13	0.77	0.65		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	1.5	0.0	2.6	0.3		3.2	2.3	0.1	1.3	0.4	1.1
Delay (s)	50.3	21.1	1.0	45.2	17.7		52.1	42.8	34.4	58.3	46.8	34.9
Level of Service	D	C	A	D	B		D	D	C	E	D	C
Approach Delay (s)		24.0			19.7			45.3			43.4	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

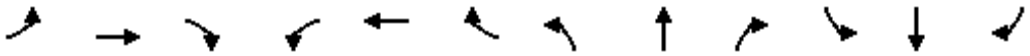
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	1957	45	44	1435	28	36	16	64	32	15	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5064		1770	5085	1523	1770	1863	1583	1681	1736	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (perm)	1770	5064		1770	5085	1523	1770	1863	1583	1681	1736	1555
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	92	2060	47	46	1511	29	38	17	67	34	16	41
RTOR Reduction (vph)	0	1	0	0	0	10	0	0	64	0	0	38
Lane Group Flow (vph)	92	2106	0	46	1511	19	38	17	3	24	26	3
Confl. Peds. (#/hr)			5			5						5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	17.1	82.8		4.8	70.5	70.5	5.6	5.6	5.6	9.9	9.9	9.9
Effective Green, g (s)	17.1	82.8		4.8	70.5	70.5	5.6	5.6	5.6	9.9	9.9	9.9
Actuated g/C Ratio	0.14	0.69		0.04	0.59	0.59	0.05	0.05	0.05	0.08	0.08	0.08
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.7		2.0	5.6	5.6	2.5	2.5	2.5	2.0	2.0	2.0
Lane Grp Cap (vph)	252	3494		71	2987	895	83	87	74	139	143	128
v/s Ratio Prot	0.05	c0.42		0.03	c0.30		c0.02	0.01		0.01	c0.01	
v/s Ratio Perm						0.01			0.00			0.00
v/c Ratio	0.37	0.60		0.65	0.51	0.02	0.46	0.20	0.04	0.17	0.18	0.03
Uniform Delay, d1	46.5	9.9		56.8	14.5	10.3	55.7	55.0	54.6	51.2	51.3	50.6
Progression Factor	0.55	0.15		0.76	2.05	3.44	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.6		12.7	0.3	0.0	2.9	0.8	0.2	0.2	0.2	0.0
Delay (s)	26.0	2.1		56.0	30.1	35.5	58.6	55.8	54.8	51.5	51.5	50.6
Level of Service	C	A		E	C	D	E	E	D	D	D	D
Approach Delay (s)		3.1			31.0			56.1			51.1	
Approach LOS		A			C			E			D	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

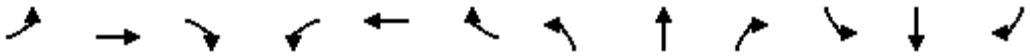
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	1928	37	15	1445	26	118	45	25	56	6	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	4.0		4.6	4.6	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00	0.90	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.97	
Satd. Flow (prot)	1770	5085	1435	1770	5085	1428	1681	1678		1681	1630	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.97	
Satd. Flow (perm)	1770	5085	1435	1770	5085	1428	1681	1678		1681	1630	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	2029	39	16	1521	27	124	47	26	59	6	11
RTOR Reduction (vph)	0	0	11	0	0	8	0	11	0	0	9	0
Lane Group Flow (vph)	12	2029	28	16	1521	19	99	87	0	38	29	0
Confl. Peds. (#/hr)			20			20						20
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.2	71.3	71.3	1.2	71.3	71.3	10.6	10.6		19.4	19.4	
Effective Green, g (s)	1.2	71.3	71.3	1.2	71.3	71.3	10.6	10.6		19.4	19.4	
Actuated g/C Ratio	0.01	0.59	0.59	0.01	0.59	0.59	0.09	0.09		0.16	0.16	
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	4.0		4.6	4.6	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.5	2.5		2.0	2.0	
Lane Grp Cap (vph)	18	3021	853	18	3021	848	148	148		272	264	
v/s Ratio Prot	0.01	c0.40		c0.01	0.30		c0.06	0.05		c0.02	0.02	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.67	0.67	0.03	0.89	0.50	0.02	0.67	0.59		0.14	0.11	
Uniform Delay, d1	59.2	16.4	10.1	59.3	14.1	10.0	53.0	52.6		43.1	42.9	
Progression Factor	0.76	0.27	0.05	0.81	0.28	0.05	1.00	1.00		1.00	1.00	
Incremental Delay, d2	46.6	0.7	0.0	147.1	0.6	0.0	9.9	4.9		0.1	0.1	
Delay (s)	91.5	5.2	0.6	195.0	4.4	0.5	62.9	57.5		43.2	43.0	
Level of Service	F	A	A	F	A	A	E	E		D	D	
Approach Delay (s)		5.6			6.3			60.2			43.1	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

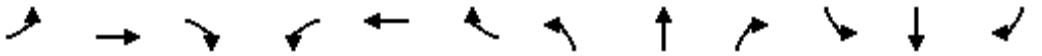
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	1796	62	10	1470	0	14	4	11	27	1	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.89		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5054		1770	5085		1770	1625		1770	1563	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5054		1770	5085		1770	1625		1770	1563	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	62	1891	65	11	1547	0	15	4	12	28	1	18
RTOR Reduction (vph)	0	2	0	0	0	0	0	11	0	0	17	0
Lane Group Flow (vph)	62	1954	0	11	1547	0	15	5	0	28	2	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	14.8	91.4		0.6	77.2		2.8	6.4		4.7	8.3	
Effective Green, g (s)	14.8	91.4		0.6	77.2		2.8	6.4		4.7	8.3	
Actuated g/C Ratio	0.12	0.76		0.00	0.64		0.02	0.05		0.04	0.07	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	5.8		2.0	5.8		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	218	3849		9	3271		41	87		69	108	
v/s Ratio Prot	0.04	c0.39		0.01	c0.30		0.01	c0.00		c0.02	0.00	
v/s Ratio Perm												
v/c Ratio	0.28	0.51		1.22	0.47		0.37	0.05		0.41	0.02	
Uniform Delay, d1	47.8	5.6		59.7	11.0		57.7	53.9		56.3	52.1	
Progression Factor	0.53	0.05		0.73	1.51		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.4		358.0	0.2		5.5	0.3		3.9	0.1	
Delay (s)	25.7	0.6		401.5	16.8		63.2	54.2		60.2	52.1	
Level of Service	C	A		F	B		E	D		E	D	
Approach Delay (s)		1.4			19.5			58.5			56.9	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

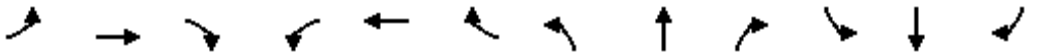
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	1589	49	44	1274	121	169	717	366	92	310	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.0	4.0	4.9	4.0	5.0	6.7	6.7	5.0	6.3	6.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1562	3433	5085	1555	3433	5085	1556
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1562	3433	5085	1555	3433	5085	1556
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	1673	52	46	1341	127	178	755	385	97	326	74
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	49	0	0	64
Lane Group Flow (vph)	158	1673	52	46	1341	127	178	755	336	97	326	10
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			8			4
Actuated Green, G (s)	11.4	59.9	120.0	2.4	50.9	120.0	21.2	32.1	32.1	5.0	16.3	16.3
Effective Green, g (s)	11.4	59.9	120.0	2.4	50.9	120.0	21.2	32.1	32.1	5.0	16.3	16.3
Actuated g/C Ratio	0.10	0.50	1.00	0.02	0.42	1.00	0.18	0.27	0.27	0.04	0.14	0.14
Clearance Time (s)	4.0	4.9		4.0	4.9		5.0	6.7	6.7	5.0	6.3	6.3
Vehicle Extension (s)	2.0	5.6		2.0	5.6		2.0	2.7	2.7	2.0	3.1	3.1
Lane Grp Cap (vph)	326	2538	1562	69	2157	1562	606	1360	416	143	691	211
v/s Ratio Prot	c0.05	c0.33		0.01	0.26		0.05	0.15		0.03	c0.06	
v/s Ratio Perm			0.03			0.08			c0.22			0.01
v/c Ratio	0.48	0.66	0.03	0.67	0.62	0.08	0.29	0.56	0.81	0.68	0.47	0.05
Uniform Delay, d1	51.5	22.4	0.0	58.4	27.0	0.0	42.9	37.8	41.1	56.7	47.9	45.1
Progression Factor	1.13	1.04	1.00	0.97	0.56	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.2	0.0	12.6	0.6	0.1	0.1	0.4	10.8	9.6	0.5	0.1
Delay (s)	58.4	24.6	0.0	69.5	15.9	0.1	43.0	38.2	51.8	66.3	48.4	45.2
Level of Service	E	C	A	E	B	A	D	D	D	E	D	D
Approach Delay (s)		26.8			16.2			42.9			51.4	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

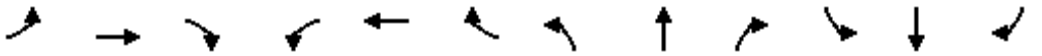


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	1463	204	269	1829	191	422	813	239	191	630	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	3.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	4.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1541
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1541
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	232	1540	215	283	1925	201	444	856	252	201	663	157
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	125
Lane Group Flow (vph)	232	1540	215	283	1925	201	444	856	252	201	663	32
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			4
Actuated Green, G (s)	9.8	45.2	120.0	12.0	49.4	120.0	17.5	30.0	120.0	11.1	23.6	23.6
Effective Green, g (s)	10.8	48.2	120.0	13.0	52.4	120.0	18.5	33.0	120.0	12.1	26.6	24.6
Actuated g/C Ratio	0.09	0.40	1.00	0.11	0.44	1.00	0.15	0.28	1.00	0.10	0.22	0.21
Clearance Time (s)	4.0	6.0		6.0	6.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.1		2.0	3.3		2.0	4.2		2.0	4.5	4.5
Lane Grp Cap (vph)	299	2042	1560	360	2220	1560	512	1398	1560	335	1127	316
v/s Ratio Prot	0.07	c0.30		0.09	c0.38		c0.13	c0.17		0.06	0.13	
v/s Ratio Perm			0.14			0.13			0.16			0.02
v/c Ratio	0.78	0.75	0.14	0.79	0.87	0.13	0.87	0.61	0.16	0.60	0.59	0.10
Uniform Delay, d1	53.4	30.8	0.0	52.1	30.6	0.0	49.6	37.9	0.0	51.6	41.8	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.9	2.6	0.2	10.0	3.9	0.2	13.9	1.0	0.2	1.9	1.1	0.2
Delay (s)	64.3	33.5	0.2	62.1	34.6	0.2	63.5	38.9	0.2	53.6	42.9	39.0
Level of Service	E	C	A	E	C	A	E	D	A	D	D	D
Approach Delay (s)		33.5			34.9			39.6			44.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

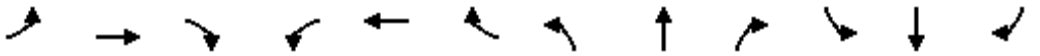
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	565	1611	392	567	2143	518
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	4.0	5.3	5.3	6.0	6.0
Lane Util. Factor	0.97	0.88	0.95	1.00	0.97	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	2787	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	3539	1583	3433	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	595	1696	413	597	2256	545
RTOR Reduction (vph)	0	0	0	193	0	0
Lane Group Flow (vph)	595	1696	413	404	2256	545
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	22.7	150.0	29.7	29.7	81.0	116.0
Effective Green, g (s)	22.7	150.0	29.7	29.7	81.0	116.0
Actuated g/C Ratio	0.15	1.00	0.20	0.20	0.54	0.77
Clearance Time (s)	5.3		5.3	5.3	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	520	2787	701	313	1854	1441
v/s Ratio Prot	c0.17		0.12		c0.66	0.29
v/s Ratio Perm		0.61		c0.25		
v/c Ratio	1.14	0.61	0.59	1.29	1.22	0.38
Uniform Delay, d1	63.6	0.0	54.6	60.1	34.5	5.4
Progression Factor	0.82	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	75.4	0.4	1.3	152.3	102.7	0.2
Delay (s)	127.3	0.4	55.9	212.5	137.2	5.6
Level of Service	F	A	E	F	F	A
Approach Delay (s)	33.4		148.4			111.6
Approach LOS	C		F			F

Intersection Summary			
HCM Average Control Delay	88.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	440	2192	46	99	1798	90	86	139	131	41	16	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3528		3433	3539	1583	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3528		3433	3539	1583	1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	463	2307	48	104	1893	95	91	146	138	43	17	324
RTOR Reduction (vph)	0	1	0	0	0	14	0	0	116	0	0	220
Lane Group Flow (vph)	463	2354	0	104	1893	81	91	146	22	43	17	104
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	18.3	94.1		8.9	84.7	84.7	11.9	23.7	23.7	5.4	16.1	16.1
Effective Green, g (s)	18.3	94.1		8.9	84.7	84.7	11.9	23.7	23.7	5.4	16.1	16.1
Actuated g/C Ratio	0.12	0.63		0.06	0.56	0.56	0.08	0.16	0.16	0.04	0.11	0.11
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.9		2.0	3.9	3.9	2.0	4.4	4.4	2.0	3.6	3.6
Lane Grp Cap (vph)	419	2213		204	1998	894	140	294	250	124	200	170
v/s Ratio Prot	0.13	c0.67		0.03	c0.53		c0.05	0.08		0.01	0.01	
v/s Ratio Perm						0.05			0.01			c0.07
v/c Ratio	1.11	1.06		0.51	0.95	0.09	0.65	0.50	0.09	0.35	0.09	0.61
Uniform Delay, d1	65.8	28.0		68.4	30.6	15.0	67.0	57.7	53.9	70.6	60.3	63.9
Progression Factor	0.64	0.19		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	51.0	29.9		0.7	10.3	0.1	8.0	2.2	0.3	0.6	0.2	6.5
Delay (s)	93.2	35.2		69.2	40.9	15.0	75.0	59.9	54.2	71.2	60.5	70.4
Level of Service	F	D		E	D	B	E	E	D	E	E	E
Approach Delay (s)		44.7			41.1			61.4			70.1	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	46.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

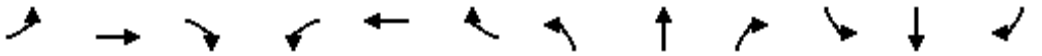


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	2391	6	13	1983	7	8	0	36	57	3	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3			11.0			11.0	11.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (prot)	1770	3538		1770	3537			1641			1778	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.92			0.70	1.00
Satd. Flow (perm)	1770	3538		1770	3537			1530			1309	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	2517	6	14	2087	7	8	0	38	60	3	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	36	0	0	0	20
Lane Group Flow (vph)	5	2523	0	14	2094	0	0	10	0	0	63	1
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	7	4		3	8			2			2	
Permitted Phases							2			2		2
Actuated Green, G (s)	0.8	80.3		2.4	81.9			7.0			7.0	7.0
Effective Green, g (s)	0.8	80.3		2.4	81.9			7.0			7.0	7.0
Actuated g/C Ratio	0.01	0.73		0.02	0.74			0.06			0.06	0.06
Clearance Time (s)	4.0	5.3		4.0	5.3			11.0			11.0	11.0
Vehicle Extension (s)	2.0	3.0		2.0	3.9			2.0			2.0	2.0
Lane Grp Cap (vph)	13	2583		39	2633			97			83	101
v/s Ratio Prot	c0.00	c0.71		0.01	c0.59							
v/s Ratio Perm								0.01			c0.05	0.00
v/c Ratio	0.38	0.98		0.36	0.80			0.11			0.76	0.01
Uniform Delay, d1	54.4	14.0		53.0	8.8			48.6			50.7	48.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	6.8	13.0		2.1	1.8			0.2			29.1	0.0
Delay (s)	61.1	27.0		55.1	10.6			48.7			79.8	48.3
Level of Service	E	C		E	B			D			E	D
Approach Delay (s)		27.1			10.9			48.7			71.9	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2504	21	371	2020	0	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0	5.3		6.0
Lane Util. Factor	0.91		0.97	0.91		1.00
Frt	1.00		1.00	1.00		0.86
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5079		3433	5085		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5079		3433	5085		1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2636	22	391	2126	0	384
RTOR Reduction (vph)	1	0	0	0	0	1
Lane Group Flow (vph)	2657	0	391	2126	0	383
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	41.7		20.0	75.0		20.0
Effective Green, g (s)	41.7		20.0	75.0		20.0
Actuated g/C Ratio	0.56		0.27	1.00		0.27
Clearance Time (s)	7.3		6.0	5.3		6.0
Vehicle Extension (s)	3.5		2.0	3.5		2.0
Lane Grp Cap (vph)	2824		915	5085		430
v/s Ratio Prot	c0.52		0.11	0.42		c0.24
v/s Ratio Perm						
v/c Ratio	0.94		0.43	0.42		0.89
Uniform Delay, d1	15.5		22.8	0.0		26.5
Progression Factor	1.00		0.70	1.00		1.00
Incremental Delay, d2	7.8		0.0	0.1		19.6
Delay (s)	23.3		16.0	0.1		46.1
Level of Service	C		B	A		D
Approach Delay (s)	23.3			2.5	46.1	
Approach LOS	C			A	D	

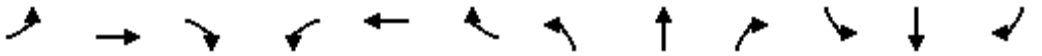
Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	312	1228	1329	71	1160	269	1120	685	149	214	179	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	4.0	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4916	2787	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4916	2787	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	328	1293	1399	75	1221	283	1179	721	157	225	188	121
RTOR Reduction (vph)	0	0	0	0	0	91	0	0	74	0	0	111
Lane Group Flow (vph)	328	1293	1399	75	1221	192	1179	721	83	225	188	10
Parking (#/hr)		0										
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			2			6
Actuated Green, G (s)	14.0	54.3	150.0	15.0	54.9	54.9	50.0	48.7	48.7	13.4	12.1	12.1
Effective Green, g (s)	14.0	54.3	150.0	15.0	54.9	54.9	50.0	48.7	48.7	13.4	12.1	12.1
Actuated g/C Ratio	0.09	0.36	1.00	0.10	0.37	0.37	0.33	0.32	0.32	0.09	0.08	0.08
Clearance Time (s)	4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.9		2.0	3.5	3.5	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	320	1780	2787	343	1295	579	1144	1149	514	307	410	128
v/s Ratio Prot	c0.10	0.26		0.02	c0.34		c0.34	0.20		c0.07	0.04	
v/s Ratio Perm			0.50			0.12			0.05			0.01
v/c Ratio	1.02	0.73	0.50	0.22	0.94	0.33	1.03	0.63	0.16	0.73	0.46	0.08
Uniform Delay, d1	68.0	41.4	0.0	62.1	46.0	34.3	50.0	43.0	36.1	66.6	65.8	63.8
Progression Factor	1.08	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.4	0.6	0.2	0.1	14.6	1.5	34.8	1.2	0.2	7.6	1.1	0.3
Delay (s)	109.8	34.1	0.2	62.2	60.7	35.8	84.8	44.2	36.3	74.1	66.9	64.1
Level of Service	F	C	A	E	E	D	F	D	D	E	E	E
Approach Delay (s)		26.6			56.3			66.8			69.3	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	47.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

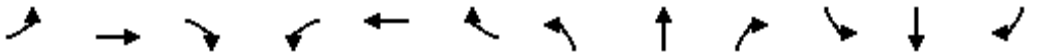


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	1356	78	17	1472	5	23	1	392	5	3	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.97	1.00
Satd. Flow (prot)	1762	3616		1711	3538			1777	1583		1806	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00		0.97	1.00
Satd. Flow (perm)	1762	3616		1711	3538			1777	1583		1806	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	1427	82	18	1549	5	24	1	413	5	3	6
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	61	0	0	6
Lane Group Flow (vph)	4	1506	0	18	1554	0	0	25	352	0	8	0
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	0.6	69.8		23.6	94.5			5.6	29.2		1.6	1.6
Effective Green, g (s)	1.6	72.3		24.6	97.0			7.1	32.2		3.1	3.1
Actuated g/C Ratio	0.01	0.60		0.21	0.81			0.06	0.27		0.03	0.03
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	23	2179		351	2860			105	458		47	38
v/s Ratio Prot	0.00	c0.42		0.01	0.44			0.01	c0.16		c0.00	
v/s Ratio Perm									0.06			0.00
v/c Ratio	0.17	0.69		0.05	0.54			0.24	0.77		0.17	0.00
Uniform Delay, d1	58.5	16.2		38.3	3.9			53.9	40.5		57.2	56.9
Progression Factor	1.00	1.00		1.24	0.64			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	1.0		0.0	0.7			0.4	6.8		0.6	0.0
Delay (s)	59.9	17.3		47.7	3.2			54.3	47.3		57.8	57.0
Level of Service	E	B		D	A			D	D		E	E
Approach Delay (s)		17.4			3.7			47.7			57.5	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

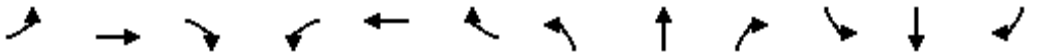
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1726	19	22	1364	128	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3533		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3533		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1817	20	23	1436	135	220
RTOR Reduction (vph)	1	0	0	0	0	89
Lane Group Flow (vph)	1836	0	23	1436	135	131
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	84.3		3.1	91.4	14.3	14.3
Effective Green, g (s)	86.3		5.1	93.4	16.3	16.3
Actuated g/C Ratio	0.72		0.04	0.78	0.14	0.14
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2541		75	2755	240	215
v/s Ratio Prot	c0.52		0.01	c0.41	0.08	
v/s Ratio Perm						c0.08
v/c Ratio	0.72		0.31	0.52	0.56	0.61
Uniform Delay, d1	9.9		55.7	5.0	48.5	48.8
Progression Factor	0.39		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		0.8	0.7	2.4	4.1
Delay (s)	4.7		56.6	5.7	51.0	52.9
Level of Service	A		E	A	D	D
Approach Delay (s)	4.7			6.5	52.2	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	307	902	697	153	514	29	753	1459	213	107	885	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3507		3433	3539	1552	3433	5085	1550
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3507		3433	3539	1552	3433	5085	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	323	949	734	161	541	31	793	1536	224	113	932	115
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	64	0	0	83
Lane Group Flow (vph)	323	949	734	161	568	0	793	1536	160	113	932	32
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	11.0	35.3	120.0	5.3	30.0		28.5	56.0	56.0	4.0	31.9	31.9
Effective Green, g (s)	12.0	36.8	120.0	6.3	31.5		29.5	57.5	57.0	5.0	33.4	32.9
Actuated g/C Ratio	0.10	0.31	1.00	0.05	0.26		0.25	0.48	0.48	0.04	0.28	0.27
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	343	1085	1561	180	921		844	1696	737	143	1415	425
v/s Ratio Prot	c0.09	c0.27		c0.05	0.16		c0.23	c0.43		0.03	c0.18	
v/s Ratio Perm			0.47						0.10			0.02
v/c Ratio	0.94	0.87	0.47	0.89	0.62		0.94	0.91	0.22	0.79	0.66	0.07
Uniform Delay, d1	53.7	39.4	0.0	56.5	38.9		44.4	28.8	18.4	57.0	38.3	32.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.82	1.26	1.53	1.00	1.00	1.00
Incremental Delay, d2	33.3	8.2	1.0	37.8	1.4		12.6	5.7	0.4	23.5	1.2	0.1
Delay (s)	87.0	47.6	1.0	94.3	40.3		49.2	41.8	28.6	80.5	39.5	32.4
Level of Service	F	D	A	F	D		D	D	C	F	D	C
Approach Delay (s)		36.9			52.2			43.0			42.8	
Approach LOS		D			D			D			D	

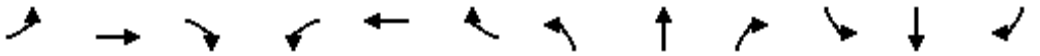
Intersection Summary			
HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	189	1203	2	19	680	80	43	62	74	5	8	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.98	1.00
Satd. Flow (prot)	1770	3538		1770	3469			1825	1550		1828	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00		0.98	1.00
Satd. Flow (perm)	1770	3538		1770	3469			1825	1550		1828	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	199	1266	2	20	716	84	45	65	78	5	8	5
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	47	0	0	5
Lane Group Flow (vph)	199	1268	0	20	795	0	0	110	31	0	13	0
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	20.2	85.0		2.9	67.7			12.3	12.3		2.5	2.5
Effective Green, g (s)	21.2	87.0		3.9	69.7			13.3	13.3		3.5	3.5
Actuated g/C Ratio	0.18	0.72		0.03	0.58			0.11	0.11		0.03	0.03
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	313	2565		58	2015			202	172		53	46
v/s Ratio Prot	c0.11	c0.36		0.01	c0.23			c0.06			c0.01	
v/s Ratio Perm									0.02			0.00
v/c Ratio	0.64	0.49		0.34	0.39			0.54	0.18		0.25	0.00
Uniform Delay, d1	45.8	7.1		56.8	13.7			50.5	48.4		57.0	56.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	3.1	0.3		1.3	0.6			1.6	0.2		0.9	0.0
Delay (s)	48.9	7.4		58.1	14.3			52.1	48.6		57.8	56.6
Level of Service	D	A		E	B			D	D		E	E
Approach Delay (s)		13.0			15.3			50.6			57.5	
Approach LOS		B			B			D			E	

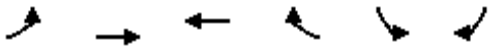
Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



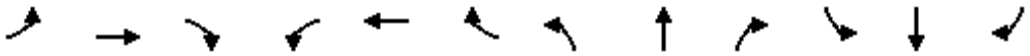
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	1242	0	25	665	14	68	2	26	43	0	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.8		3.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3528			1734			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.77	1.00
Satd. Flow (perm)	1770	3539		1770	3528			1380			1437	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	1307	0	26	700	15	72	2	27	45	0	67
RTOR Reduction (vph)	0	0	0	0	2	0	0	22	0	0	0	54
Lane Group Flow (vph)	22	1307	0	26	713	0	0	79	0	0	45	13
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	0.4	23.9		0.4	23.9			7.4			7.4	7.4
Effective Green, g (s)	1.4	26.4		1.4	26.4			8.4			8.4	8.4
Actuated g/C Ratio	0.03	0.59		0.03	0.59			0.19			0.19	0.19
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	55	2076		55	2070			258			268	295
v/s Ratio Prot	0.01	c0.37		c0.01	0.20							
v/s Ratio Perm								c0.06			0.03	0.01
v/c Ratio	0.40	0.63		0.47	0.34			0.31			0.17	0.04
Uniform Delay, d1	21.4	6.1		21.4	4.8			15.8			15.4	15.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.7	0.6		2.3	0.1			0.5			0.2	0.0
Delay (s)	23.1	6.7		23.8	4.9			16.3			15.6	15.0
Level of Service	C	A		C	A			B			B	B
Approach Delay (s)		7.0			5.6			16.3			15.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.8
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	651	550	603	359	144	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.94		1.00	0.85
Flt Protected	0.95	0.98	1.00		0.95	1.00
Satd. Flow (prot)	1610	3337	3341		3433	1583
Flt Permitted	0.95	0.98	1.00		0.95	1.00
Satd. Flow (perm)	1610	3337	3341		3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	685	579	635	378	152	213
RTOR Reduction (vph)	0	0	105	0	0	44
Lane Group Flow (vph)	411	853	908	0	152	169
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	20.5	20.5	20.4		7.7	28.2
Effective Green, g (s)	23.0	23.0	22.9		8.7	33.2
Actuated g/C Ratio	0.37	0.37	0.37		0.14	0.54
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	598	1240	1236		483	921
v/s Ratio Prot	0.26	c0.26	c0.27		c0.04	0.07
v/s Ratio Perm						0.04
v/c Ratio	0.69	0.69	0.73		0.31	0.18
Uniform Delay, d1	16.4	16.4	16.9		23.9	7.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.7	1.8	2.0		0.1	0.2
Delay (s)	20.1	18.2	18.9		24.1	7.5
Level of Service	C	B	B		C	A
Approach Delay (s)		18.9	18.9		14.4	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	61.9	Sum of lost time (s)	7.3
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



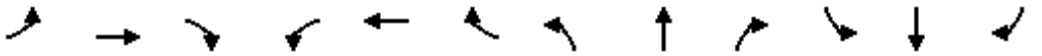
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	407	29	18	855	12	92	7	4	3	2	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.99		1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.97	1.00
Satd. Flow (prot)	1770	3503		1770	3532			1561			1808	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.74			0.87	1.00
Satd. Flow (perm)	1770	3503		1770	3532			1214			1623	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	198	428	31	19	900	13	97	7	4	3	2	152
RTOR Reduction (vph)	0	5	0	0	2	0	0	3	0	0	0	125
Lane Group Flow (vph)	198	454	0	19	911	0	0	105	0	0	5	27
Parking (#/hr)								4				
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	7.8	30.5		1.0	23.7			8.5			8.5	8.5
Effective Green, g (s)	8.8	32.5		2.0	25.7			9.5			9.5	9.5
Actuated g/C Ratio	0.17	0.61		0.04	0.48			0.18			0.18	0.18
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3		2.0	4.3			2.0			2.0	2.0
Lane Grp Cap (vph)	292	2136		66	1703			216			289	282
v/s Ratio Prot	c0.11	0.13		0.01	c0.26							
v/s Ratio Perm								c0.09			0.00	0.02
v/c Ratio	0.68	0.21		0.29	0.54			0.48			0.02	0.10
Uniform Delay, d1	20.9	4.7		25.0	9.6			19.7			18.1	18.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	4.8	0.1		0.9	0.5			0.6			0.0	0.1
Delay (s)	25.8	4.7		25.8	10.1			20.3			18.1	18.4
Level of Service	C	A		C	B			C			B	B
Approach Delay (s)		11.1			10.4			20.3			18.4	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	9.3
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

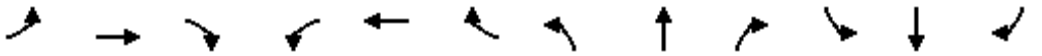
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	240	305	550	409	342	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5		2.8	2.5	3.0	2.8
Lane Util. Factor	0.97		1.00	1.00	1.00	1.00
Frt	0.92		1.00	0.85	1.00	1.00
Flt Protected	0.98		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3239		1863	1583	1770	1863
Flt Permitted	0.98		1.00	1.00	0.95	1.00
Satd. Flow (perm)	3239		1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	253	321	579	431	360	140
RTOR Reduction (vph)	252	0	0	46	0	0
Lane Group Flow (vph)	322	0	579	385	360	140
Turn Type				pm+ov	Prot	
Protected Phases	8		6	8	5	2
Permitted Phases				6		
Actuated Green, G (s)	13.0		24.6	37.6	16.1	44.7
Effective Green, g (s)	14.5		27.1	40.6	17.1	47.2
Actuated g/C Ratio	0.22		0.40	0.61	0.26	0.70
Clearance Time (s)	4.0		5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0		4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	701		754	959	452	1312
v/s Ratio Prot	c0.10		c0.31	0.09	c0.20	0.08
v/s Ratio Perm				0.16		
v/c Ratio	0.46		0.77	0.40	0.80	0.11
Uniform Delay, d1	22.8		17.2	6.9	23.3	3.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		5.2	0.1	8.8	0.1
Delay (s)	23.0		22.4	7.0	32.1	3.2
Level of Service	C		C	A	C	A
Approach Delay (s)	23.0		15.8			24.0
Approach LOS	C		B			C

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	8.3
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



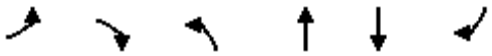
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	11	138	224	7	69	38	855	56	51	1166	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	39	12	145	236	7	73	40	900	59	54	1227	12
RTOR Reduction (vph)	0	0	127	0	0	54	0	0	39	0	0	8
Lane Group Flow (vph)	39	12	18	236	7	19	40	900	20	54	1227	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.2	8.4	8.4	11.5	17.7	17.7	2.2	23.0	23.0	4.2	25.0	25.0
Effective Green, g (s)	2.2	8.4	8.4	11.5	17.7	17.7	2.2	23.0	23.0	4.2	25.0	25.0
Actuated g/C Ratio	0.03	0.13	0.13	0.17	0.26	0.26	0.03	0.34	0.34	0.06	0.37	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	233	198	303	491	418	58	1743	543	111	1895	590
v/s Ratio Prot	0.02	0.01		c0.13	0.00		0.02	0.18		c0.03	c0.24	
v/s Ratio Perm			c0.01			0.01			0.01			0.00
v/c Ratio	0.67	0.05	0.09	0.78	0.01	0.05	0.69	0.52	0.04	0.49	0.65	0.01
Uniform Delay, d1	32.1	25.8	26.0	26.6	18.3	18.4	32.1	17.6	14.7	30.4	17.4	13.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.6	0.1	0.2	11.9	0.0	0.0	29.0	0.3	0.0	3.3	0.8	0.0
Delay (s)	58.7	25.9	26.2	38.5	18.3	18.5	61.1	17.9	14.7	33.7	18.2	13.2
Level of Service	E	C	C	D	B	B	E	B	B	C	B	B
Approach Delay (s)		32.6			33.4			19.4			18.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	3	71	30	0	11	19	948	12	60	1494	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0		4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770		1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770		1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	3	75	32	0	12	20	998	13	63	1573	8
RTOR Reduction (vph)	0	0	66	0	0	10	0	0	6	0	0	3
Lane Group Flow (vph)	22	3	9	32	0	2	20	998	7	63	1573	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	6.6	6.6	2.2		8.3	0.9	33.4	33.4	3.3	35.8	35.8
Effective Green, g (s)	1.5	8.6	7.6	3.2		9.3	1.9	35.4	34.4	4.3	37.8	36.8
Actuated g/C Ratio	0.02	0.13	0.12	0.05		0.14	0.03	0.54	0.53	0.07	0.58	0.56
Clearance Time (s)	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	41	245	184	86		225	51	2748	831	116	2935	889
v/s Ratio Prot	0.01	0.00		c0.02			0.01	0.20		c0.04	c0.31	
v/s Ratio Perm			c0.01			0.00			0.00			0.00
v/c Ratio	0.54	0.01	0.05	0.37		0.01	0.39	0.36	0.01	0.54	0.54	0.01
Uniform Delay, d1	31.7	24.8	25.7	30.2		24.1	31.2	8.6	7.4	29.6	8.5	6.3
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8	0.0	0.1	2.7		0.0	4.9	0.1	0.0	5.1	0.2	0.0
Delay (s)	44.5	24.8	25.8	32.9		24.1	36.2	8.7	7.4	34.8	8.7	6.3
Level of Service	D	C	C	C		C	D	A	A	C	A	A
Approach Delay (s)		29.9			30.5			9.2			9.7	
Approach LOS		C			C			A			A	

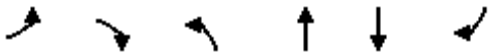
Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	191	128	54	916	1082	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1562	1770	5085	5085	1548
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1562	1770	5085	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	201	135	57	964	1139	96
RTOR Reduction (vph)	0	107	0	0	0	53
Lane Group Flow (vph)	201	28	57	964	1139	43
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.8	8.8	2.8	26.2	19.4	19.4
Effective Green, g (s)	8.8	8.8	2.8	26.2	19.4	19.4
Actuated g/C Ratio	0.20	0.20	0.07	0.61	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	362	320	115	3098	2294	698
v/s Ratio Prot	c0.11		c0.03	0.19	c0.22	
v/s Ratio Perm		0.02				0.03
v/c Ratio	0.56	0.09	0.50	0.31	0.50	0.06
Uniform Delay, d1	15.3	13.8	19.4	4.0	8.3	6.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.1	3.3	0.1	0.2	0.0
Delay (s)	17.2	14.0	22.8	4.1	8.5	6.7
Level of Service	B	B	C	A	A	A
Approach Delay (s)	15.9			5.1	8.4	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	43.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

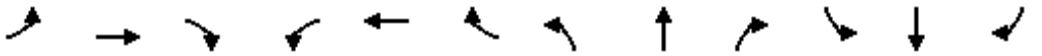
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	45	56	18	925	1198	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1563	1770	5085	5085	1549
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1563	1770	5085	5085	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	59	19	974	1261	13
RTOR Reduction (vph)	0	51	0	0	0	6
Lane Group Flow (vph)	47	8	19	974	1261	7
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	4.6	4.6	0.4	22.4	18.0	18.0
Effective Green, g (s)	4.6	4.6	0.4	22.4	18.0	18.0
Actuated g/C Ratio	0.13	0.13	0.01	0.64	0.51	0.51
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	233	205	20	3254	2615	797
v/s Ratio Prot	c0.03		0.01	c0.19	c0.25	
v/s Ratio Perm		0.00				0.00
v/c Ratio	0.20	0.04	0.95	0.30	0.48	0.01
Uniform Delay, d1	13.6	13.3	17.3	2.8	5.5	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	175.6	0.1	0.1	0.0
Delay (s)	14.0	13.3	192.9	2.9	5.6	4.2
Level of Service	B	B	F	A	A	A
Approach Delay (s)	13.6			6.5	5.6	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	35.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



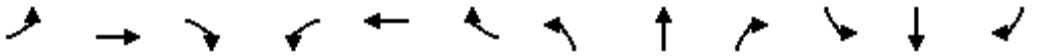
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	0	109	32	0	8	29	1135	11	3	1176	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.92			0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1663			1740		1770	5085	1546	1770	5085	1546
Flt Permitted		0.98			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1663			1740		1770	5085	1546	1770	5085	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	0	115	34	0	8	31	1195	12	3	1238	15
RTOR Reduction (vph)	0	53	0	0	7	0	0	0	4	0	0	5
Lane Group Flow (vph)	0	135	0	0	35	0	31	1195	8	3	1238	10
Confl. Peds. (#/hr)			2			2	2		2			2
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)		13.4			7.0		1.2	33.6	33.6	0.4	32.8	32.8
Effective Green, g (s)		13.4			7.0		1.2	33.6	33.6	0.4	32.8	32.8
Actuated g/C Ratio		0.19			0.10		0.02	0.48	0.48	0.01	0.47	0.47
Clearance Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		317			173		30	2427	738	10	2369	720
v/s Ratio Prot		c0.08			c0.02		c0.02	0.23		0.00	c0.24	
v/s Ratio Perm									0.01			0.01
v/c Ratio		0.43			0.20		1.03	0.49	0.01	0.30	0.52	0.01
Uniform Delay, d1		25.1			29.1		34.6	12.6	9.7	34.9	13.3	10.1
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.9			0.6		174.7	0.2	0.0	16.1	0.2	0.0
Delay (s)		26.0			29.7		209.3	12.7	9.7	51.0	13.5	10.1
Level of Service		C			C		F	B	A	D	B	B
Approach Delay (s)		26.0			29.7			17.6			13.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

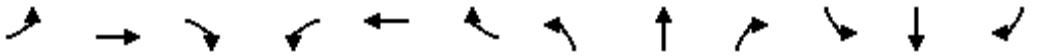
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	681	77	36	429	30	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	717	81	38	452	32	16
RTOR Reduction (vph)	0	32	0	0	0	14
Lane Group Flow (vph)	717	49	38	452	32	2
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	22.9	22.9	1.4	30.0	3.9	3.9
Effective Green, g (s)	26.3	26.3	2.4	33.4	4.9	4.9
Actuated g/C Ratio	0.60	0.60	0.06	0.77	0.11	0.11
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2135	955	97	2711	199	178
v/s Ratio Prot	c0.20		c0.02	0.13	c0.02	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.34	0.05	0.39	0.17	0.16	0.01
Uniform Delay, d1	4.3	3.5	19.9	1.4	17.5	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	1.0	0.1	0.1	0.0
Delay (s)	4.5	3.6	20.8	1.4	17.6	17.2
Level of Service	A	A	C	A	B	B
Approach Delay (s)	4.4			2.9	17.5	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	10	33	50	18	57	35	728	17	24	825	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	141	11	35	53	19	60	37	766	18	25	868	27
RTOR Reduction (vph)	0	0	28	0	0	53	0	0	11	0	0	16
Lane Group Flow (vph)	141	11	7	53	19	7	37	766	7	25	868	11
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.4	11.2	11.2	3.0	5.8	5.8	1.4	23.0	23.0	1.1	22.7	22.7
Effective Green, g (s)	9.4	13.2	12.2	4.0	7.8	6.8	2.4	25.0	24.0	2.1	24.7	23.7
Actuated g/C Ratio	0.16	0.23	0.21	0.07	0.13	0.12	0.04	0.43	0.41	0.04	0.42	0.41
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	285	422	331	121	249	185	73	2181	652	64	2154	644
v/s Ratio Prot	c0.08	0.01		0.03	c0.01		c0.02	0.15		0.01	c0.17	
v/s Ratio Perm			0.00			0.00			0.00			0.01
v/c Ratio	0.49	0.03	0.02	0.44	0.08	0.04	0.51	0.35	0.01	0.39	0.40	0.02
Uniform Delay, d1	22.3	17.5	18.3	26.1	22.1	22.8	27.4	11.2	10.1	27.5	11.7	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0	0.0	2.5	0.1	0.1	5.4	0.1	0.0	3.9	0.1	0.0
Delay (s)	23.6	17.6	18.3	28.6	22.2	22.9	32.8	11.3	10.1	31.4	11.8	10.3
Level of Service	C	B	B	C	C	C	C	B	B	C	B	B
Approach Delay (s)		22.3			25.1			12.2			12.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

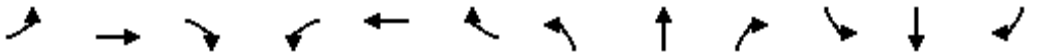


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	119	120	206	29	0	38	705	93	2	889	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	4.0	3.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	125	126	217	31	0	40	742	98	2	936	18
RTOR Reduction (vph)	0	0	99	0	0	0	0	0	65	0	0	12
Lane Group Flow (vph)	80	125	27	217	31	0	40	742	33	2	936	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.2	12.1	12.1	12.5	15.4		1.6	19.8	19.8	0.7	18.9	18.9
Effective Green, g (s)	10.2	13.1	13.1	13.5	16.4		2.6	21.8	20.8	1.7	20.9	19.9
Actuated g/C Ratio	0.16	0.21	0.21	0.22	0.26		0.04	0.35	0.33	0.03	0.34	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)	291	393	334	385	492		74	1785	530	48	1711	507
v/s Ratio Prot	0.05	c0.07		c0.12	0.02		c0.02	0.15		0.00	c0.18	
v/s Ratio Perm			0.02						0.02			0.00
v/c Ratio	0.27	0.32	0.08	0.56	0.06		0.54	0.42	0.06	0.04	0.55	0.01
Uniform Delay, d1	22.7	20.7	19.7	21.7	17.1		29.2	15.3	14.0	29.4	16.8	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.1	1.9	0.1		7.8	0.4	0.1	0.4	0.7	0.0
Delay (s)	23.2	21.2	19.8	23.6	17.2		37.0	15.7	14.1	29.8	17.5	14.4
Level of Service	C	C	B	C	B		D	B	B	C	B	B
Approach Delay (s)		21.1			22.8			16.5			17.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

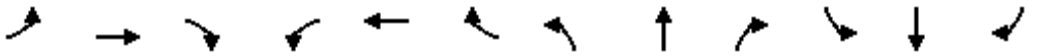
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	68	0	841	32	34	1181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	1.00		1.00	0.85	1.00	1.00
Flt Protected	0.95		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770		5085	1583	1770	5085
Flt Permitted	0.95		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	0	885	34	36	1243
RTOR Reduction (vph)	0	0	0	16	0	0
Lane Group Flow (vph)	72	0	885	18	36	1243
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.7		27.3	27.3	2.5	34.8
Effective Green, g (s)	6.7		27.3	27.3	2.5	34.8
Actuated g/C Ratio	0.13		0.53	0.53	0.05	0.68
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230		2696	839	86	3436
v/s Ratio Prot	c0.04		0.17		0.02	c0.24
v/s Ratio Perm				0.01		
v/c Ratio	0.31		0.33	0.02	0.42	0.36
Uniform Delay, d1	20.3		6.9	5.8	23.8	3.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		0.1	0.0	3.3	0.1
Delay (s)	21.1		7.0	5.8	27.1	3.6
Level of Service	C		A	A	C	A
Approach Delay (s)	21.1		6.9			4.3
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	6	56	146	17	18	15	1087	58	5	1269	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	6	59	154	18	19	16	1144	61	5	1336	153
RTOR Reduction (vph)	0	0	53	0	0	15	0	0	36	0	0	92
Lane Group Flow (vph)	53	6	6	154	18	4	16	1144	25	5	1336	61
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.9	6.2	6.2	8.3	11.6	11.6	0.9	23.4	23.4	0.7	23.2	23.2
Effective Green, g (s)	2.9	6.2	6.2	8.3	11.6	11.6	0.9	23.4	23.4	0.7	23.2	23.2
Actuated g/C Ratio	0.05	0.11	0.11	0.14	0.20	0.20	0.02	0.40	0.40	0.01	0.40	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	88	197	167	251	369	313	27	2031	632	21	2013	627
v/s Ratio Prot	0.03	0.00		c0.09	c0.01		c0.01	0.22		0.00	c0.26	
v/s Ratio Perm			0.00			0.00			0.02			0.04
v/c Ratio	0.60	0.03	0.04	0.61	0.05	0.01	0.59	0.56	0.04	0.24	0.66	0.10
Uniform Delay, d1	27.3	23.5	23.5	23.6	19.0	18.9	28.7	13.6	10.7	28.7	14.5	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.1	0.1	0.1	4.4	0.1	0.0	30.3	0.4	0.0	5.8	0.8	0.1
Delay (s)	38.4	23.6	23.6	28.0	19.1	18.9	59.0	14.0	10.8	34.5	15.3	11.2
Level of Service	D	C	C	C	B	B	E	B	B	C	B	B
Approach Delay (s)		30.2			26.3			14.4			15.0	
Approach LOS		C			C			B			B	

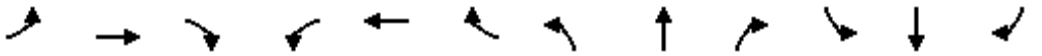
Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	129	64	89	46	151	44	784	132	269	566	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1562	1770	1863	1562	1770	3539	1546	1770	3539	1546
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1562	1770	1863	1562	1770	3539	1546	1770	3539	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	136	67	94	48	159	46	825	139	283	596	25
RTOR Reduction (vph)	0	0	56	0	0	127	0	0	92	0	0	14
Lane Group Flow (vph)	47	136	11	94	48	32	46	825	47	283	596	11
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.7	10.9	10.9	5.4	13.6	13.6	4.8	23.2	23.2	12.7	31.1	31.1
Effective Green, g (s)	2.7	10.9	10.9	5.4	13.6	13.6	4.8	23.2	23.2	12.7	31.1	31.1
Actuated g/C Ratio	0.04	0.16	0.16	0.08	0.20	0.20	0.07	0.34	0.34	0.19	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	70	298	250	140	372	311	125	1204	526	330	1614	705
v/s Ratio Prot	0.03	c0.07		c0.05	c0.03		0.03	c0.23		c0.16	0.17	
v/s Ratio Perm			0.01			0.02			0.03			0.01
v/c Ratio	0.67	0.46	0.04	0.67	0.13	0.10	0.37	0.69	0.09	0.86	0.37	0.02
Uniform Delay, d1	32.3	26.0	24.2	30.5	22.4	22.3	30.3	19.4	15.3	26.9	12.1	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.4	1.1	0.1	12.0	0.2	0.1	1.8	1.6	0.1	19.2	0.1	0.0
Delay (s)	54.8	27.1	24.3	42.5	22.6	22.5	32.1	21.0	15.4	46.1	12.3	10.2
Level of Service	D	C	C	D	C	C	C	C	B	D	B	B
Approach Delay (s)		31.5			28.7			20.7			22.8	
Approach LOS		C			C			C			C	

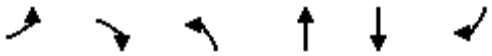
Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



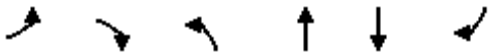
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	169	18	117	85	4	0	94	669	72	0	672	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	4.0	4.0		3.0	5.0	6.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00		0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1593	1676	1425	1593	1676		1593	3185	1425		3185	1425
Flt Permitted	0.95	1.00	1.00	0.75	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1593	1676	1425	1249	1676		1593	3185	1425		3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	178	19	123	89	4	0	99	704	76	0	707	8
RTOR Reduction (vph)	0	0	79	0	0	0	0	0	37	0	0	5
Lane Group Flow (vph)	178	19	44	89	4	0	99	704	39	0	707	3
Turn Type	Prot		Perm	Perm		Perm	Prot		Perm	Perm		Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Actuated Green, G (s)	11.1	22.6	22.6	7.5	7.5		4.5	33.7	33.7		25.2	25.2
Effective Green, g (s)	12.1	22.6	23.6	7.5	7.5		5.5	34.7	33.7		26.2	26.2
Actuated g/C Ratio	0.18	0.34	0.36	0.11	0.11		0.08	0.52	0.51		0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.7	4.7		4.7	4.7
Lane Grp Cap (vph)	291	571	507	141	190		132	1667	724		1259	563
v/s Ratio Prot	c0.11	0.01			0.00		c0.06	0.22			c0.22	
v/s Ratio Perm			0.03	c0.07					0.03			0.00
v/c Ratio	0.61	0.03	0.09	0.63	0.02		0.75	0.42	0.05		0.56	0.01
Uniform Delay, d1	24.9	14.6	14.2	28.1	26.1		29.7	9.7	8.2		15.6	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	0.0	0.0	6.6	0.0		18.9	0.3	0.1		0.9	0.0
Delay (s)	27.6	14.6	14.2	34.7	26.2		48.6	10.0	8.3		16.5	12.2
Level of Service	C	B	B	C	C		D	A	A		B	B
Approach Delay (s)		21.7			34.3			14.2			16.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



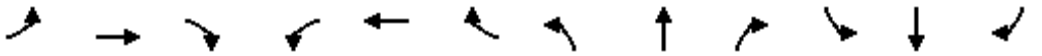
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	80	387	72	782	885	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	407	76	823	932	13
RTOR Reduction (vph)	0	262	0	0	0	8
Lane Group Flow (vph)	84	145	76	823	932	5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	10.4	10.4	4.5	30.9	21.4	21.4
Effective Green, g (s)	10.4	10.4	4.5	30.9	21.4	21.4
Actuated g/C Ratio	0.20	0.20	0.09	0.60	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	359	321	155	2132	1476	660
v/s Ratio Prot	0.05		0.04	c0.23	c0.26	
v/s Ratio Perm		c0.09				0.00
v/c Ratio	0.23	0.45	0.49	0.39	0.63	0.01
Uniform Delay, d1	17.1	18.0	22.3	5.3	11.8	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.0	2.4	0.1	0.9	0.0
Delay (s)	17.5	19.0	24.7	5.4	12.7	8.7
Level of Service	B	B	C	A	B	A
Approach Delay (s)	18.7			7.0	12.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	51.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	212	122	71	1126	1264	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	223	128	75	1185	1331	164
RTOR Reduction (vph)	0	100	0	0	0	74
Lane Group Flow (vph)	223	28	75	1185	1331	90
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	12.9	12.9	4.7	39.9	31.2	31.2
Effective Green, g (s)	13.9	13.9	5.7	43.3	34.6	34.6
Actuated g/C Ratio	0.22	0.22	0.09	0.69	0.55	0.55
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	392	350	161	2440	1950	872
v/s Ratio Prot	c0.13		0.04	c0.33	c0.38	
v/s Ratio Perm		0.02				0.06
v/c Ratio	0.57	0.08	0.47	0.49	0.68	0.10
Uniform Delay, d1	21.8	19.4	27.1	4.6	10.1	6.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.0	0.8	0.3	1.2	0.1
Delay (s)	22.9	19.4	27.9	4.8	11.4	6.8
Level of Service	C	B	C	A	B	A
Approach Delay (s)	21.6			6.2	10.9	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	8.2
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	212	87	31	48	25	38	12	936	52	88	1193	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9	3.7	3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	223	92	33	51	26	40	13	985	55	93	1256	91
RTOR Reduction (vph)	0	0	27	0	0	36	0	0	30	0	0	43
Lane Group Flow (vph)	223	92	6	51	26	4	13	985	25	93	1256	48
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	15.3	15.3	15.3	6.2	6.2	6.2	1.3	34.6	34.6	7.2	40.5	40.5
Effective Green, g (s)	16.9	16.9	16.3	7.8	7.8	7.8	2.3	38.0	38.0	8.2	43.9	43.9
Actuated g/C Ratio	0.20	0.20	0.20	0.09	0.09	0.09	0.03	0.46	0.46	0.10	0.53	0.53
Clearance Time (s)	4.9	4.9	4.9	5.3	5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1	2.0	2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	358	377	309	165	174	148	49	1611	720	174	1861	832
v/s Ratio Prot	c0.13	0.05		c0.03	0.01		0.01	0.28		c0.05	c0.35	
v/s Ratio Perm			0.00			0.00			0.02			0.03
v/c Ratio	0.62	0.24	0.02	0.31	0.15	0.03	0.27	0.61	0.03	0.53	0.67	0.06
Uniform Delay, d1	30.4	27.9	27.2	35.3	34.8	34.4	39.8	17.2	12.6	35.8	14.6	9.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.4	0.0	0.4	0.1	0.0	1.1	1.0	0.0	1.6	1.2	0.1
Delay (s)	33.8	28.3	27.2	35.7	34.9	34.4	40.8	18.1	12.6	37.4	15.8	9.7
Level of Service	C	C	C	D	C	C	D	B	B	D	B	A
Approach Delay (s)		31.7			35.1			18.1			16.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

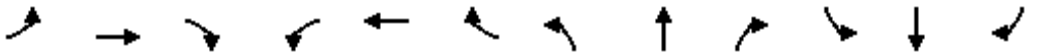
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	75	66	1323	39	64	1528
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1700		5085	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1700		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	69	1393	41	67	1608
RTOR Reduction (vph)	57	0	0	21	0	0
Lane Group Flow (vph)	91	0	1393	20	67	1608
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Actuated Green, G (s)	9.2		28.1	28.1	4.8	37.9
Effective Green, g (s)	9.2		28.1	28.1	4.8	37.9
Actuated g/C Ratio	0.16		0.49	0.49	0.08	0.66
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	274		2502	779	149	3375
v/s Ratio Prot	c0.05		c0.27		0.04	c0.32
v/s Ratio Perm				0.01		
v/c Ratio	0.33		0.56	0.03	0.45	0.48
Uniform Delay, d1	21.2		10.1	7.5	24.9	4.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7		0.3	0.0	2.2	0.1
Delay (s)	21.9		10.4	7.5	27.0	4.8
Level of Service	C		B	A	C	A
Approach Delay (s)	21.9		10.3			5.7
Approach LOS	C		B			A

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	1	91	49	2	36	11	1268	16	10	1506	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1566		1770	1577		1770	5085	1547	1770	5085	1547
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1566		1770	1577		1770	5085	1547	1770	5085	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	1	96	52	2	38	12	1335	17	11	1585	91
RTOR Reduction (vph)	0	79	0	0	34	0	0	0	8	0	0	45
Lane Group Flow (vph)	79	18	0	52	6	0	12	1335	9	11	1585	46
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.1	10.3		2.4	5.6		0.5	30.2	30.2	0.5	30.2	30.2
Effective Green, g (s)	7.1	10.3		2.4	5.6		0.5	30.2	30.2	0.5	30.2	30.2
Actuated g/C Ratio	0.12	0.17		0.04	0.09		0.01	0.51	0.51	0.01	0.51	0.51
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	212	272		72	149		15	2585	787	15	2585	787
v/s Ratio Prot	c0.04	c0.01		c0.03	0.00		c0.01	0.26		0.01	c0.31	
v/s Ratio Perm									0.01			0.03
v/c Ratio	0.37	0.06		0.72	0.04		0.80	0.52	0.01	0.73	0.61	0.06
Uniform Delay, d1	24.1	20.5		28.2	24.5		29.4	9.7	7.2	29.4	10.4	7.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1		29.8	0.1		132.2	0.7	0.0	103.2	1.1	0.1
Delay (s)	25.2	20.6		58.0	24.6		161.6	10.5	7.2	132.6	11.5	7.5
Level of Service	C	C		E	C		F	B	A	F	B	A
Approach Delay (s)		22.7			43.4			11.8			12.1	
Approach LOS		C			D			B			B	

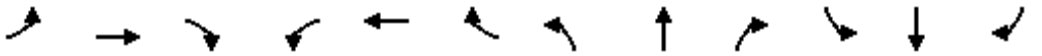
Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



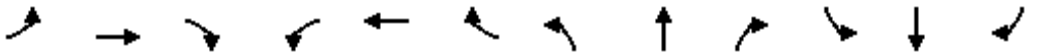
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	13	336	171	15	0	70	0	44	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0		5.0			
Lane Util. Factor		1.00	1.00		1.00		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (prot)		1863	1583		1781		1770		1583			
Flt Permitted		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (perm)		1863	1583		1781		1770		1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	14	354	180	16	0	74	0	46	0	0	0
RTOR Reduction (vph)	0	0	293	0	0	0	0	0	31	0	0	0
Lane Group Flow (vph)	0	14	61	0	196	0	74	0	15	0	0	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		9.3	9.3		12.9		4.6		17.2			
Effective Green, g (s)		9.3	9.3		12.9		4.6		17.2			
Actuated g/C Ratio		0.17	0.17		0.24		0.08		0.32			
Clearance Time (s)		5.0	5.0		5.0		5.0		5.0			
Vehicle Extension (s)		3.0	3.0		3.0		3.0		3.0			
Lane Grp Cap (vph)		318	271		422		150		501			
v/s Ratio Prot		0.01			c0.11		c0.04					
v/s Ratio Perm			c0.04						c0.01			
v/c Ratio		0.04	0.22		0.46		0.49		0.03			
Uniform Delay, d1		18.8	19.4		17.8		23.8		12.8			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.1	0.4		0.8		2.5		0.0			
Delay (s)		18.9	19.9		18.6		26.3		12.9			
Level of Service		B	B		B		C		B			
Approach Delay (s)		19.8			18.6			21.2			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



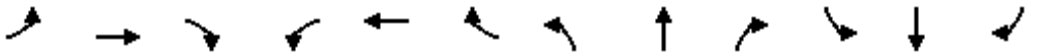
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	241	93	62	11	6	59	98	19	238	264	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1859	1583		1787	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1859	1583		1787	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	254	98	65	12	6	62	103	20	251	278	5
RTOR Reduction (vph)	0	0	77	0	0	5	0	0	17	0	0	3
Lane Group Flow (vph)	0	266	21	0	77	1	62	103	3	251	278	2
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		15.7	15.7		8.7	8.7	4.5	11.6	11.6	15.9	23.0	23.0
Effective Green, g (s)		15.7	15.7		8.7	8.7	4.5	11.6	11.6	15.9	23.0	23.0
Actuated g/C Ratio		0.22	0.22		0.12	0.12	0.06	0.16	0.16	0.22	0.32	0.32
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		406	346		216	192	111	571	255	391	1132	506
v/s Ratio Prot		c0.14			c0.04		0.04	0.03		c0.14	c0.08	
v/s Ratio Perm			0.01			0.00			0.00			0.00
v/c Ratio		0.66	0.06		0.36	0.00	0.56	0.18	0.01	0.64	0.25	0.00
Uniform Delay, d1		25.6	22.3		29.0	27.8	32.7	26.0	25.3	25.4	18.0	16.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		3.8	0.1		1.0	0.0	6.0	0.2	0.0	3.6	0.1	0.0
Delay (s)		29.4	22.3		30.0	27.8	38.7	26.2	25.4	29.0	18.2	16.6
Level of Service		C	C		C	C	D	C	C	C	B	B
Approach Delay (s)		27.5			29.9			30.3			23.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	102	351	0	2	40	128	696	0	47	575	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.88			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1646			1863	1583	1770	3539		1770	3539	1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1646			1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	129	107	369	0	2	42	135	733	0	49	605	107
RTOR Reduction (vph)	0	188	0	0	0	39	0	0	0	0	0	72
Lane Group Flow (vph)	129	288	0	0	2	3	135	733	0	49	605	35
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	8.4	16.7			4.3	4.3	6.4	22.1		1.3	17.0	17.0
Effective Green, g (s)	8.4	16.7			4.3	4.3	6.4	22.1		1.3	17.0	17.0
Actuated g/C Ratio	0.16	0.32			0.08	0.08	0.12	0.42		0.02	0.33	0.33
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	285	528			154	131	217	1501		44	1155	517
v/s Ratio Prot	0.07	c0.18			0.00		c0.08	c0.21		0.03	0.17	
v/s Ratio Perm						0.00						0.02
v/c Ratio	0.45	0.55			0.01	0.03	0.62	0.49		1.11	0.52	0.07
Uniform Delay, d1	19.8	14.6			22.0	22.0	21.7	10.9		25.4	14.3	12.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	1.2			0.0	0.1	5.5	0.3		171.0	0.4	0.1
Delay (s)	20.9	15.7			22.0	22.1	27.2	11.1		196.4	14.7	12.1
Level of Service	C	B			C	C	C	B		F	B	B
Approach Delay (s)		16.8			22.1			13.6			26.0	
Approach LOS		B			C			B			C	

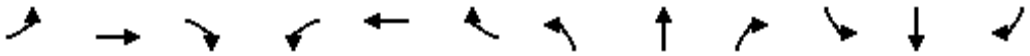
Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	7	27	41	2	15	11	591	259	242	337	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1783	1562	1770	1863	1562	1770	3539	1547	1770	3539	1547
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1783	1562	1770	1863	1562	1770	3539	1547	1770	3539	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	7	28	43	2	16	12	622	273	255	355	11
RTOR Reduction (vph)	0	0	25	0	0	14	0	0	166	0	0	5
Lane Group Flow (vph)	0	67	3	43	2	2	12	622	107	255	355	6
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		6.3	6.3	6.0	6.0	6.0	0.4	24.2	24.2	9.0	32.8	32.8
Effective Green, g (s)		6.3	6.3	6.0	6.0	6.0	0.4	24.2	24.2	9.0	32.8	32.8
Actuated g/C Ratio		0.10	0.10	0.10	0.10	0.10	0.01	0.39	0.39	0.15	0.53	0.53
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		183	160	173	182	152	12	1393	609	259	1887	825
v/s Ratio Prot		c0.04		c0.02	0.00		0.01	c0.18		c0.14	0.10	
v/s Ratio Perm			0.00			0.00			0.07			0.00
v/c Ratio		0.37	0.02	0.25	0.01	0.01	1.00	0.45	0.18	0.98	0.19	0.01
Uniform Delay, d1		25.7	24.8	25.7	25.1	25.1	30.6	13.7	12.2	26.2	7.4	6.7
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.2	0.0	0.8	0.0	0.0	259.8	0.2	0.1	51.2	0.0	0.0
Delay (s)		27.0	24.9	26.4	25.1	25.1	290.4	14.0	12.3	77.4	7.5	6.7
Level of Service		C	C	C	C	C	F	B	B	E	A	A
Approach Delay (s)		26.4			26.0			17.1			36.2	
Approach LOS		C			C			B			D	

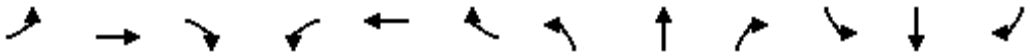
Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	61.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



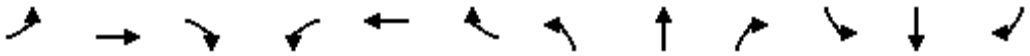
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	3	27	25	9	34	38	759	3	18	377	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4		3.0	3.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.95	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1776	1583		1796	1583	1770	3537		1770	3376	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1776	1583		1796	1583	1770	3537		1770	3376	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	141	3	28	26	9	36	40	799	3	19	397	177
RTOR Reduction (vph)	0	0	23	0	0	32	0	0	0	0	50	0
Lane Group Flow (vph)	0	144	5	0	35	4	40	802	0	19	524	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		9.0	9.0		4.5	4.5	2.2	21.4		0.8	20.0	
Effective Green, g (s)		10.0	10.0		5.5	5.5	3.2	23.7		1.8	22.3	
Actuated g/C Ratio		0.19	0.19		0.10	0.10	0.06	0.44		0.03	0.42	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		333	296		185	163	106	1570		60	1410	
v/s Ratio Prot		c0.08			c0.02		c0.02	c0.23		0.01	0.16	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.43	0.02		0.19	0.02	0.38	0.51		0.32	0.37	
Uniform Delay, d1		19.2	17.7		21.9	21.5	24.1	10.7		25.2	10.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.2	0.0	0.8	0.4		1.1	0.2	
Delay (s)		19.5	17.7		22.1	21.6	25.0	11.0		26.3	10.9	
Level of Service		B	B		C	C	C	B		C	B	
Approach Delay (s)		19.2			21.8			11.7			11.4	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



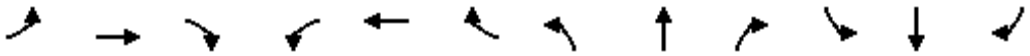
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	24	39	29	5	21	20	736	17	4	420	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.95		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1792	1583		1721		1770	3527		1770	3503	
Flt Permitted		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1792	1583		1721		1770	3527		1770	3503	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	97	25	41	31	5	22	21	775	18	4	442	32
RTOR Reduction (vph)	0	0	35	0	20	0	0	2	0	0	5	0
Lane Group Flow (vph)	0	122	6	0	38	0	21	791	0	4	469	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		8.7	8.7		4.7		0.6	26.5		0.7	26.6	
Effective Green, g (s)		8.7	8.7		4.7		0.6	26.5		0.7	26.6	
Actuated g/C Ratio		0.15	0.15		0.08		0.01	0.45		0.01	0.46	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		267	236		139		18	1603		21	1598	
v/s Ratio Prot		c0.07			c0.02		c0.01	c0.22		0.00	0.13	
v/s Ratio Perm			0.00									
v/c Ratio		0.46	0.03		0.27		1.17	0.49		0.19	0.29	
Uniform Delay, d1		22.6	21.2		25.2		28.8	11.2		28.5	10.0	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		0.4		269.7	0.3		1.6	0.1	
Delay (s)		23.1	21.2		25.6		298.5	11.5		30.1	10.1	
Level of Service		C	C		C		F	B		C	B	
Approach Delay (s)		22.6			25.6			18.9			10.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	17.7
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	6	301	13	11	13	97	709	12	2	521	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1782	1583		1814	1583	1770	3530		1770	3526	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1782	1583		1814	1583	1770	3530		1770	3526	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	6	317	14	12	14	102	746	13	2	548	14
RTOR Reduction (vph)	0	0	255	0	0	13	0	1	0	0	2	0
Lane Group Flow (vph)	0	63	62	0	26	1	102	758	0	2	560	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		10.1	10.1		4.1	4.1	4.7	23.8		0.6	19.7	
Effective Green, g (s)		11.1	11.1		5.1	5.1	5.7	26.5		1.6	22.4	
Actuated g/C Ratio		0.20	0.20		0.09	0.09	0.10	0.47		0.03	0.40	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		351	312		164	143	179	1662		50	1403	
v/s Ratio Prot		0.04			c0.01		c0.06	c0.21		0.00	0.16	
v/s Ratio Perm			c0.04			0.00						
v/c Ratio		0.18	0.20		0.16	0.01	0.57	0.46		0.04	0.40	
Uniform Delay, d1		18.8	18.9		23.6	23.3	24.1	10.0		26.6	12.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.3		0.5	0.0	2.5	0.3		0.1	0.2	
Delay (s)		19.1	19.2		24.1	23.3	26.6	10.3		26.7	12.4	
Level of Service		B	B		C	C	C	B		C	B	
Approach Delay (s)		19.2			23.8			12.2			12.4	
Approach LOS		B			C			B			B	

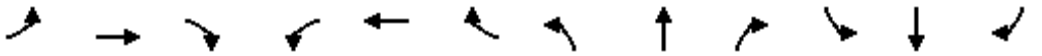
Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	24	35	100	51	91	35	1225	30	429	488	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1515	1681	1741	1583	1770	3520		1770	3474	
Flt Permitted		0.97	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799	1515	1681	1741	1583	1770	3520		1770	3474	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	25	37	105	54	96	37	1289	32	452	514	45
RTOR Reduction (vph)	0	0	33	0	0	88	0	1	0	0	4	0
Lane Group Flow (vph)	0	86	4	78	81	8	37	1320	0	452	555	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		11.8	11.8	8.2	8.2	8.2	3.4	47.4		29.4	73.4	
Effective Green, g (s)		12.8	12.8	9.2	9.2	9.2	5.4	49.4		31.4	75.4	
Actuated g/C Ratio		0.11	0.11	0.08	0.08	0.08	0.05	0.43		0.27	0.65	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		199	167	134	138	126	83	1502		480	2262	
v/s Ratio Prot		c0.05		0.05	c0.05		0.02	c0.38		c0.26	0.16	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.43	0.02	0.58	0.59	0.06	0.45	0.88		0.94	0.25	
Uniform Delay, d1		48.1	45.9	51.4	51.5	49.3	53.7	30.5		41.3	8.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.1	0.0	5.2	5.2	0.1	1.4	6.3		26.7	0.1	
Delay (s)		49.2	46.0	56.7	56.7	49.4	55.1	36.8		68.0	8.5	
Level of Service		D	D	E	E	D	E	D		E	A	
Approach Delay (s)		48.2			54.0			37.3			35.1	
Approach LOS		D			D			D			D	

Intersection Summary					
HCM Average Control Delay	38.5	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.81				
Actuated Cycle Length (s)	115.8	Sum of lost time (s)		13.0	
Intersection Capacity Utilization	83.3%	ICU Level of Service		E	
Analysis Period (min)	15				

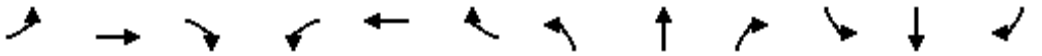
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	0	108	42	0	72	81	1186	33	44	510	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3525		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3525		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	0	114	44	0	76	85	1248	35	46	537	23
RTOR Reduction (vph)	0	0	103	0	0	68	0	2	0	0	0	12
Lane Group Flow (vph)	61	0	11	44	0	8	85	1281	0	46	537	11
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	6.7		6.7	6.5		6.5	6.4	36.9		3.9	34.4	34.4
Effective Green, g (s)	6.7		6.7	7.5		7.5	6.4	37.9		4.9	35.4	34.4
Actuated g/C Ratio	0.09		0.09	0.10		0.10	0.09	0.53		0.07	0.49	0.48
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	165		148	185		166	158	1863		121	1747	759
v/s Ratio Prot	c0.03			c0.02			c0.05	c0.36		0.03	0.15	
v/s Ratio Perm			0.01			0.01						0.01
v/c Ratio	0.37		0.07	0.24		0.05	0.54	0.69		0.38	0.31	0.01
Uniform Delay, d1	30.5		29.7	29.5		28.9	31.2	12.5		31.9	10.8	9.8
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5		0.1	0.2		0.0	1.8	1.3		0.7	0.2	0.0
Delay (s)	31.0		29.7	29.7		28.9	33.0	13.8		32.7	11.0	9.8
Level of Service	C		C	C		C	C	B		C	B	A
Approach Delay (s)		30.2			29.2			15.0			12.6	
Approach LOS		C			C			B			B	

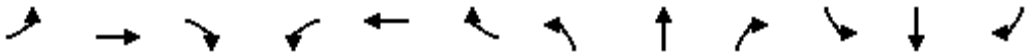
Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	11.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



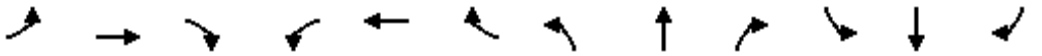
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	4	53	65	4	13	297	832	141	94	914	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1692	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1692	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	88	4	56	68	4	14	313	876	148	99	962	546
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	327
Lane Group Flow (vph)	46	46	56	68	4	14	313	876	148	99	962	219
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	8.3	8.3	75.9	6.5	6.5	75.9	16.0	36.8	75.9	6.3	27.1	27.1
Effective Green, g (s)	9.3	9.3	75.9	7.5	7.5	75.9	17.0	40.2	75.9	7.3	30.5	30.5
Actuated g/C Ratio	0.12	0.12	1.00	0.10	0.10	1.00	0.22	0.53	1.00	0.10	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	206	207	1583	175	184	1583	396	2693	1583	170	2043	636
v/s Ratio Prot	c0.03	0.03		c0.04	0.00		c0.18	0.17		0.06	c0.19	
v/s Ratio Perm			0.04			0.01			0.09			0.14
v/c Ratio	0.22	0.22	0.04	0.39	0.02	0.01	0.79	0.33	0.09	0.58	0.47	0.34
Uniform Delay, d1	30.0	30.0	0.0	32.1	30.9	0.0	27.8	10.1	0.0	32.8	16.7	15.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	0.0	1.4	0.0	0.0	9.6	0.1	0.1	5.0	0.3	0.6
Delay (s)	30.4	30.4	0.0	33.5	30.9	0.0	37.4	10.3	0.1	37.8	17.1	16.4
Level of Service	C	C	A	C	C	A	D	B	A	D	B	B
Approach Delay (s)		18.9			27.9			15.5			18.1	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	11.6
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



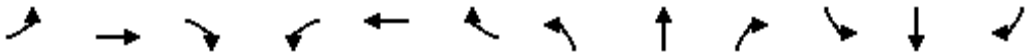
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	2	1	18	2	34	1	1575	127	180	642	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0		3.0	0.6	4.0	4.0	0.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1741	1583	1770	1598		1770	3539	1583	1770	4903	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00	0.13	1.00	
Satd. Flow (perm)	1681	1741	1583	1770	1598		1770	3539	1583	238	4903	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	2	1	19	2	36	1	1658	134	189	676	212
RTOR Reduction (vph)	0	0	1	0	34	0	0	0	20	0	19	0
Lane Group Flow (vph)	2	3	0	19	4	0	1	1658	114	189	869	0
Turn Type	Split		Perm	Split			Prot		Perm	Perm		
Protected Phases	4	4		8	8		5	2			6	
Permitted Phases			4						2	6		
Actuated Green, G (s)	3.9	3.9	3.9	6.8	6.8		1.0	105.3	105.3	100.3	100.3	
Effective Green, g (s)	4.9	3.9	4.9	6.8	6.8		2.0	108.7	105.3	100.3	103.7	
Actuated g/C Ratio	0.04	0.03	0.04	0.05	0.05		0.02	0.84	0.82	0.78	0.80	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	64	53	60	93	84		27	2982	1292	185	3941	
v/s Ratio Prot	0.00	c0.00		c0.01	0.00		0.00	c0.47			0.18	
v/s Ratio Perm			0.00						0.07	c0.79		
v/c Ratio	0.03	0.06	0.00	0.20	0.05		0.04	0.56	0.09	1.02	0.22	
Uniform Delay, d1	59.8	60.8	59.7	58.5	58.0		62.6	3.0	2.3	14.4	3.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.4	0.0	1.1	0.2		0.6	0.2	0.0	71.9	0.0	
Delay (s)	60.0	61.2	59.7	59.6	58.3		63.1	3.2	2.4	86.3	3.0	
Level of Service	E	E	E	E	E		E	A	A	F	A	
Approach Delay (s)		60.5			58.7			3.2			17.6	
Approach LOS		E			E			A			B	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	129.0	Sum of lost time (s)	13.6
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



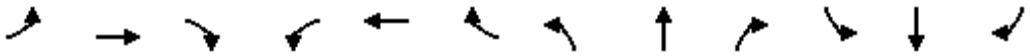
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	2	21	0	6	58	416	1645	0	293	338	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	0.95		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.88	0.85		0.88		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1548	1504		1634		1770	3539		1770	3539	1583
Flt Permitted	0.71	1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1329	1548	1504		1634		1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	2	22	0	6	61	438	1732	0	308	356	47
RTOR Reduction (vph)	0	9	11	0	55	0	0	0	0	0	0	26
Lane Group Flow (vph)	40	3	1	0	12	0	438	1732	0	308	356	21
Turn Type	Perm		Perm				Prot			Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4									6
Actuated Green, G (s)	9.0	9.0	9.0		9.0		27.1	51.6		18.2	42.7	42.7
Effective Green, g (s)	9.0	9.0	9.0		9.0		27.1	51.6		18.2	42.7	42.7
Actuated g/C Ratio	0.10	0.10	0.10		0.10		0.29	0.55		0.19	0.46	0.46
Clearance Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	128	149	144		157		511	1947		343	1611	721
v/s Ratio Prot		0.00			0.01		c0.25	c0.49		0.17	0.10	
v/s Ratio Perm	c0.03		0.00									0.01
v/c Ratio	0.31	0.02	0.01		0.08		0.86	0.89		0.90	0.22	0.03
Uniform Delay, d1	39.5	38.4	38.4		38.6		31.5	18.6		36.9	15.5	14.1
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1	0.0		0.2		13.3	5.4		24.7	0.1	0.0
Delay (s)	40.9	38.5	38.4		38.8		44.8	24.0		61.6	15.5	14.1
Level of Service	D	D	D		D		D	C		E	B	B
Approach Delay (s)		40.0			38.8			28.2			35.4	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	93.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	9	17	43	1	2	8	1712	328	33	394	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	2.6		3.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786	1583	1681	1689	1583	1770	4963		1770	5073	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1786	1583	1681	1689	1583	1770	4963		1770	5073	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	9	18	45	1	2	8	1802	345	35	415	7
RTOR Reduction (vph)	0	0	16	0	0	2	0	23	0	0	1	0
Lane Group Flow (vph)	0	62	2	23	23	0	8	2124	0	35	421	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4						
Actuated Green, G (s)		5.3	5.3	6.5	6.5	6.5	0.9	37.3		1.3	37.7	
Effective Green, g (s)		6.3	6.3	7.5	7.5	7.5	1.9	40.7		2.3	41.1	
Actuated g/C Ratio		0.09	0.09	0.11	0.11	0.11	0.03	0.60		0.03	0.60	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2	0.2	2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)		165	146	184	185	174	49	2953		60	3048	
v/s Ratio Prot		c0.03		c0.01	0.01		0.00	c0.43		c0.02	0.08	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.38	0.01	0.12	0.12	0.00	0.16	0.72		0.58	0.14	
Uniform Delay, d1		29.2	28.2	27.5	27.5	27.1	32.5	9.8		32.6	5.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0	0.1	0.1	0.0	0.6	0.9		9.0	0.0	
Delay (s)		29.7	28.2	27.6	27.6	27.1	33.0	10.7		41.6	6.0	
Level of Service		C	C	C	C	C	C	B		D	A	
Approach Delay (s)		29.4			27.6			10.8			8.7	
Approach LOS		C			C			B			A	

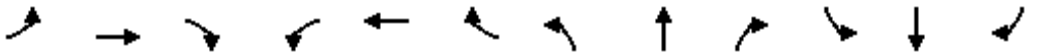
Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	11.6
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	9	298	73	19	49	172	1669	17	10	936	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1779	1550		1792	1583	1770	5076		1770	5070	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1779	1550		1792	1583	1770	5076		1770	5070	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	151	9	314	77	20	52	181	1757	18	11	985	16
RTOR Reduction (vph)	0	0	211	0	0	48	0	1	0	0	2	0
Lane Group Flow (vph)	0	160	103	0	97	4	181	1774	0	11	999	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		10.4	10.4		3.0	3.0	8.5	28.8		0.5	20.8	
Effective Green, g (s)		12.7	12.7		5.3	5.3	9.5	31.8		1.5	23.8	
Actuated g/C Ratio		0.20	0.20		0.09	0.09	0.15	0.51		0.02	0.38	
Clearance Time (s)		5.3	5.3		4.0	4.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		364	318		153	135	271	2603		43	1946	
v/s Ratio Prot		c0.09			c0.05		c0.10	c0.35		0.01	0.20	
v/s Ratio Perm			0.07			0.00						
v/c Ratio		0.44	0.32		0.63	0.03	0.67	0.68		0.26	0.51	
Uniform Delay, d1		21.5	21.0		27.4	26.0	24.8	11.3		29.7	14.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.2		6.2	0.0	4.8	1.0		1.1	0.5	
Delay (s)		21.9	21.2		33.6	26.0	29.5	12.3		30.8	15.1	
Level of Service		C	C		C	C	C	B		C	B	
Approach Delay (s)		21.4			30.9			13.9			15.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	7.7
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

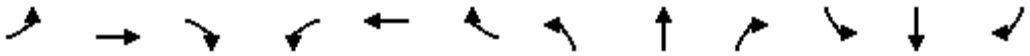
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	405	831	101	177	209	127	93	1411	240	164	925	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1535	1770	5085	1534	3433	5085	1560	3433	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1535	1770	5085	1534	3433	5085	1560	3433	5085	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	426	875	106	186	220	134	98	1485	253	173	974	154
RTOR Reduction (vph)	0	0	52	0	0	96	0	0	0	0	0	0
Lane Group Flow (vph)	426	875	54	186	220	38	98	1485	253	173	974	154
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	18.7	32.4	32.4	15.9	29.6	29.6	7.0	44.2	120.0	8.1	45.0	120.0
Effective Green, g (s)	19.7	35.4	35.4	16.9	32.6	32.6	8.0	47.2	120.0	9.1	48.0	120.0
Actuated g/C Ratio	0.16	0.29	0.29	0.14	0.27	0.27	0.07	0.39	1.00	0.08	0.40	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	564	1044	453	249	1381	417	229	2000	1560	260	2034	1560
v/s Ratio Prot	c0.12	c0.25		0.11	0.04		0.03	c0.29		c0.05	0.19	
v/s Ratio Perm			0.04			0.02			c0.16			0.10
v/c Ratio	0.76	0.84	0.12	0.75	0.16	0.09	0.43	0.74	0.16	0.67	0.48	0.10
Uniform Delay, d1	47.9	39.6	30.9	49.5	33.3	32.6	53.8	31.2	0.0	54.0	26.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	6.2	0.1	10.2	0.1	0.1	0.5	1.7	0.2	4.9	0.8	0.1
Delay (s)	52.9	45.8	31.0	59.7	33.3	32.7	54.3	32.9	0.2	58.9	27.5	0.1
Level of Service	D	D	C	E	C	C	D	C	A	E	C	A
Approach Delay (s)		46.8			42.3			29.6			28.5	
Approach LOS		D			D			C			C	

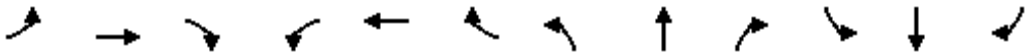
Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	0	39	44	2	21	23	1704	20	10	1231	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0	4.7	3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.91	
Frt		0.94			0.96		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1704			1727		1770	3539	1583	1770	5080	
Flt Permitted		0.81			0.74		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1411			1311		1770	3539	1583	1770	5080	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	0	41	46	2	22	24	1794	21	11	1296	9
RTOR Reduction (vph)	0	26	0	0	15	0	0	0	3	0	0	0
Lane Group Flow (vph)	0	67	0	0	55	0	24	1794	18	11	1305	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		11.7			11.7		6.3	94.0	94.0	0.6	88.3	
Effective Green, g (s)		12.7			12.7		7.3	96.7	95.0	1.6	91.0	
Actuated g/C Ratio		0.11			0.11		0.06	0.81	0.79	0.01	0.76	
Clearance Time (s)		4.0			4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8	3.8	2.0	3.8	
Lane Grp Cap (vph)		149			139		108	2852	1253	24	3852	
v/s Ratio Prot							0.01	c0.51		c0.01	0.26	
v/s Ratio Perm		c0.05			0.04				0.01			
v/c Ratio		0.45			0.39		0.22	0.63	0.01	0.46	0.34	
Uniform Delay, d1		50.4			50.1		53.6	4.6	2.6	58.8	4.7	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.2			1.8		0.4	1.1	0.0	5.0	0.1	
Delay (s)		52.5			51.9		54.0	5.7	2.7	63.7	4.8	
Level of Service		D			D		D	A	A	E	A	
Approach Delay (s)		52.5			51.9			6.2			5.3	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



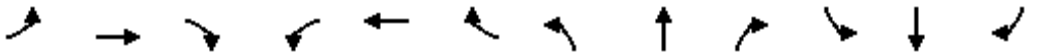
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	319	240	109	50	51	124	1713	48	138	2080	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5072	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5072	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	114	336	253	115	53	54	131	1803	51	145	2189	34
RTOR Reduction (vph)	0	0	101	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	114	336	152	115	53	54	131	1803	51	145	2222	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	14.9	19.0	19.0	6.8	10.9	120.0	7.7	66.5	120.0	8.0	66.8	
Effective Green, g (s)	15.9	22.0	22.0	7.8	13.9	120.0	8.7	69.5	120.0	9.0	69.8	
Actuated g/C Ratio	0.13	0.18	0.18	0.06	0.12	1.00	0.07	0.58	1.00	0.08	0.58	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	235	649	283	223	410	1562	249	2945	1562	257	2950	
v/s Ratio Prot	c0.06	0.09		0.03	0.01		0.04	0.35		c0.04	c0.44	
v/s Ratio Perm			c0.10			c0.03			0.03			
v/c Ratio	0.49	0.52	0.54	0.52	0.13	0.03	0.53	0.61	0.03	0.56	0.75	
Uniform Delay, d1	48.3	44.2	44.4	54.3	47.6	0.0	53.7	16.5	0.0	53.6	18.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.9	2.4	0.8	0.2	0.0	0.9	0.4	0.0	1.7	1.8	
Delay (s)	48.8	45.1	46.7	55.1	47.8	0.0	54.6	16.9	0.0	55.3	20.5	
Level of Service	D	D	D	E	D	A	D	B	A	E	C	
Approach Delay (s)		46.3			40.0			18.9			22.6	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	173	322	1646	101	205	2272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	3.0	2.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	182	339	1733	106	216	2392
RTOR Reduction (vph)	0	0	0	33	0	0
Lane Group Flow (vph)	182	339	1733	73	216	2392
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	13.3	67.1	27.8	27.8	10.0	43.8
Effective Green, g (s)	14.3	67.1	29.8	29.8	11.0	45.8
Actuated g/C Ratio	0.21	1.00	0.44	0.44	0.16	0.68
Clearance Time (s)	6.0		6.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	377	1583	2258	703	290	3471
v/s Ratio Prot	c0.10		0.34		c0.12	c0.47
v/s Ratio Perm		0.21		0.05		
v/c Ratio	0.48	0.21	0.77	0.10	0.74	0.69
Uniform Delay, d1	23.2	0.0	15.7	10.9	26.7	6.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.3	1.7	0.1	8.8	0.6
Delay (s)	24.1	0.3	17.4	10.9	35.5	7.0
Level of Service	C	A	B	B	D	A
Approach Delay (s)	8.6		17.0			9.3
Approach LOS	A		B			A

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

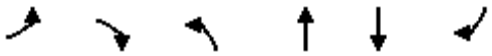


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	16	9	97	2	179	40	1150	371	613	1326	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1510	1504	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1510	1504	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	17	9	102	2	188	42	1211	391	645	1396	16
RTOR Reduction (vph)	0	0	9	0	85	85	0	0	236	0	0	4
Lane Group Flow (vph)	5	17	0	102	11	9	42	1211	155	645	1396	12
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.2	4.2	4.2	8.3	8.3	8.3	5.3	34.9	34.9	26.6	56.2	56.2
Effective Green, g (s)	4.2	4.2	4.2	8.3	8.3	8.3	5.3	34.9	34.9	26.6	56.2	56.2
Actuated g/C Ratio	0.05	0.05	0.05	0.09	0.09	0.09	0.06	0.39	0.39	0.30	0.62	0.62
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	160	87	74	317	139	139	104	1372	614	1015	2210	988
v/s Ratio Prot	0.00	c0.01		c0.03	0.01		0.02	c0.34		c0.19	0.39	
v/s Ratio Perm			0.00			0.01			0.10			0.01
v/c Ratio	0.03	0.20	0.01	0.32	0.08	0.06	0.40	0.88	0.25	0.64	0.63	0.01
Uniform Delay, d1	41.0	41.3	40.9	38.2	37.3	37.3	40.8	25.6	18.7	27.5	10.5	6.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.1	0.0	0.6	0.2	0.2	2.6	8.5	1.0	1.3	1.4	0.0
Delay (s)	41.0	42.4	40.9	38.8	37.6	37.5	43.4	34.1	19.7	28.8	11.9	6.4
Level of Service	D	D	D	D	D	D	D	C	B	C	B	A
Approach Delay (s)		41.7			38.0			30.9			17.1	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

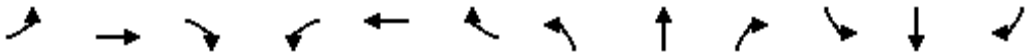
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	113	13	730	171	44	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	119	14	768	180	46	646
RTOR Reduction (vph)	0	11	0	78	0	0
Lane Group Flow (vph)	119	3	768	102	46	646
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.1	9.1	26.1	26.1	2.0	32.1
Effective Green, g (s)	10.6	10.6	29.1	29.1	3.0	35.1
Actuated g/C Ratio	0.21	0.21	0.57	0.57	0.06	0.69
Clearance Time (s)	4.0	4.0	6.0	6.0	4.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	366	328	2011	900	104	2426
v/s Ratio Prot	c0.07		c0.22		c0.03	0.18
v/s Ratio Perm		0.00		0.06		
v/c Ratio	0.33	0.01	0.38	0.11	0.44	0.27
Uniform Delay, d1	17.3	16.1	6.1	5.1	23.3	3.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.2	0.1	1.1	0.1
Delay (s)	17.8	16.1	6.3	5.2	24.4	3.2
Level of Service	B	B	A	A	C	A
Approach Delay (s)	17.6		6.1			4.6
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	8.5
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1	104	379	1388	792	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	3.0	3.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	109	399	1461	834	35
RTOR Reduction (vph)	0	97	0	0	0	24
Lane Group Flow (vph)	1	12	399	1461	834	11
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	6.1	6.1	15.7	38.1	17.4	17.4
Effective Green, g (s)	6.1	6.1	15.7	40.1	19.4	17.4
Actuated g/C Ratio	0.11	0.11	0.29	0.74	0.36	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	199	178	513	2618	1267	508
v/s Ratio Prot	0.00		c0.23	0.41	c0.24	
v/s Ratio Perm		c0.01				0.01
v/c Ratio	0.01	0.07	0.78	0.56	0.66	0.02
Uniform Delay, d1	21.4	21.5	17.7	3.1	14.6	12.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.2	7.3	0.3	1.2	0.0
Delay (s)	21.4	21.7	25.0	3.4	15.9	12.6
Level of Service	C	C	C	A	B	B
Approach Delay (s)	21.7			8.0	15.7	
Approach LOS	C			A	B	

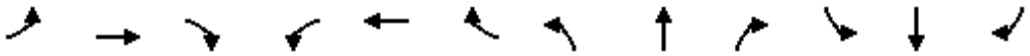
Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	13.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	9	10	53	1	182	6	1326	122	89	561	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1738			1776	1557	1770	3487		1770	3511	
Flt Permitted		0.94			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1662			1399	1557	1770	3487		1770	3511	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	9	11	56	1	192	6	1396	128	94	591	28
RTOR Reduction (vph)	0	9	0	0	0	144	0	8	0	0	3	0
Lane Group Flow (vph)	0	18	0	0	57	48	6	1516	0	94	616	0
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						
Actuated Green, G (s)		11.0			11.0	11.0	1.2	34.6		3.9	37.3	
Effective Green, g (s)		12.0			12.0	12.0	2.2	37.6		4.9	40.3	
Actuated g/C Ratio		0.19			0.19	0.19	0.03	0.59		0.08	0.64	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		316			266	296	62	2075		137	2239	
v/s Ratio Prot							0.00	c0.43		c0.05	c0.18	
v/s Ratio Perm		0.01			c0.04	0.03						
v/c Ratio		0.06			0.21	0.16	0.10	0.73		0.69	0.28	
Uniform Delay, d1		21.0			21.6	21.4	29.5	9.2		28.4	5.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			0.1	0.1	0.2	1.5		10.8	0.1	
Delay (s)		21.0			21.8	21.5	29.8	10.7		39.2	5.1	
Level of Service		C			C	C	C	B		D	A	
Approach Delay (s)		21.0			21.6			10.8			9.6	
Approach LOS		C			C			B			A	

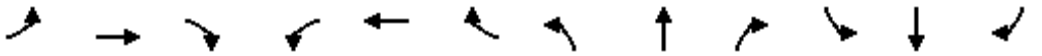
Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	11.4
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1	47	14	1	15	32	1314	70	21	573	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1775	1531		1779	1465	1770	3539	1544	1770	3518	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1775	1531		1779	1465	1770	3539	1544	1770	3518	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	1	49	15	1	16	34	1383	74	22	603	21
RTOR Reduction (vph)	0	0	44	0	0	15	0	0	15	0	2	0
Lane Group Flow (vph)	0	85	5	0	16	1	34	1383	59	22	622	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		8.4	8.4		2.4	2.4	3.8	59.4	59.4	2.1	57.7	
Effective Green, g (s)		9.4	9.4		3.4	3.4	4.8	62.4	60.4	3.1	60.7	
Actuated g/C Ratio		0.10	0.10		0.04	0.04	0.05	0.69	0.67	0.03	0.67	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		185	160		67	55	94	2454	1036	61	2373	
v/s Ratio Prot		c0.05			c0.01		0.02	c0.39		c0.01	0.18	
v/s Ratio Perm			0.00			0.00			0.04			
v/c Ratio		0.46	0.03		0.24	0.01	0.36	0.56	0.06	0.36	0.26	
Uniform Delay, d1		37.9	36.2		42.0	41.7	41.1	6.9	5.1	42.5	5.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.7	0.0		0.7	0.0	0.9	0.5	0.1	1.3	0.3	
Delay (s)		38.6	36.2		42.7	41.7	42.0	7.5	5.1	43.8	6.1	
Level of Service		D	D		D	D	D	A	A	D	A	
Approach Delay (s)		37.7			42.2			8.1			7.3	
Approach LOS		D			D			A			A	

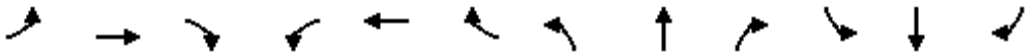
Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	650	0	764	11	3	1	291	757	0	1	486	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	684	0	804	12	3	1	306	797	0	1	512	148
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	84
Lane Group Flow (vph)	342	342	804	12	3	0	306	797	0	1	512	64
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	21.8	21.8	90.0	4.2	4.2		11.3	44.9		1.4	37.0	37.0
Effective Green, g (s)	23.8	23.8	90.0	6.2	6.2		13.3	46.9		3.4	39.0	39.0
Actuated g/C Ratio	0.26	0.26	1.00	0.07	0.07		0.15	0.52		0.04	0.43	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.9		2.0	4.3	4.3
Lane Grp Cap (vph)	445	445	1478	122	124		507	1844		67	1534	640
v/s Ratio Prot	c0.20	0.20		0.01	0.00		c0.09	0.23		0.00	0.14	
v/s Ratio Perm			c0.54									0.04
v/c Ratio	0.77	0.77	0.54	0.10	0.02		0.60	0.43		0.01	0.33	0.10
Uniform Delay, d1	30.6	30.6	0.0	39.3	39.1		35.9	13.3		41.7	16.9	15.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.0	7.0	1.4	0.1	0.0		1.4	0.7		0.0	0.2	0.1
Delay (s)	37.6	37.6	1.4	39.4	39.1		37.3	14.1		41.7	17.1	15.2
Level of Service	D	D	A	D	D		D	B		D	B	B
Approach Delay (s)		18.1			39.3			20.5			16.7	
Approach LOS		B			D			C			B	

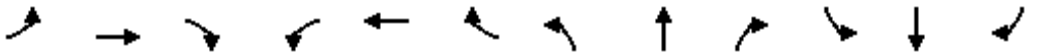
Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	2.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



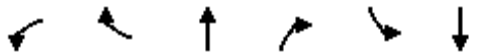
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	1	14	0	1	25	30	689	0	22	732	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1601			1863	1583	1770	3539		1770	3499	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1601			1863	1583	1770	3539		1770	3499	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	1	15	0	1	26	32	725	0	23	771	63
RTOR Reduction (vph)	0	13	0	0	0	24	0	0	0	0	4	0
Lane Group Flow (vph)	100	3	0	0	1	2	32	725	0	23	830	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	8.4	8.4			3.9	3.9	2.5	33.3		1.1	31.9	
Effective Green, g (s)	8.4	8.4			3.9	3.9	2.5	33.3		1.1	31.9	
Actuated g/C Ratio	0.13	0.13			0.06	0.06	0.04	0.50		0.02	0.48	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	223	202			109	93	66	1767		29	1673	
v/s Ratio Prot	c0.06	0.00			0.00		c0.02	0.20		0.01	c0.24	
v/s Ratio Perm						c0.00						
v/c Ratio	0.45	0.01			0.01	0.02	0.48	0.41		0.79	0.50	
Uniform Delay, d1	27.0	25.5			29.6	29.6	31.5	10.5		32.7	11.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.0			0.0	0.1	5.5	0.2		83.5	0.2	
Delay (s)	28.4	25.6			29.6	29.7	37.0	10.7		116.2	12.1	
Level of Service	C	C			C	C	D	B		F	B	
Approach Delay (s)		28.0			29.7			11.8			14.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



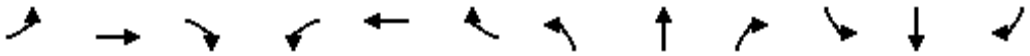
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	0	37	41	1	48	65	435	5	25	390	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583	1770	1589		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1583	1770	1589		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	0	39	43	1	51	68	458	5	26	411	99
RTOR Reduction (vph)	0	0	34	0	45	0	0	0	3	0	0	61
Lane Group Flow (vph)	36	36	5	43	7	0	68	458	2	26	411	38
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	8.2	8.2	8.2	6.8	6.8		4.1	25.7	25.7	1.0	22.6	22.6
Effective Green, g (s)	8.2	8.2	8.2	6.8	6.8		4.1	25.7	25.7	1.0	22.6	22.6
Actuated g/C Ratio	0.14	0.14	0.14	0.12	0.12		0.07	0.44	0.44	0.02	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	234	234	220	204	183		123	1542	690	30	1356	606
v/s Ratio Prot	c0.02	0.02		c0.02	0.00		c0.04	c0.13		0.01	0.12	
v/s Ratio Perm			0.00						0.00			0.02
v/c Ratio	0.15	0.15	0.02	0.21	0.04		0.55	0.30	0.00	0.87	0.30	0.06
Uniform Delay, d1	22.3	22.3	21.9	23.7	23.2		26.6	10.8	9.4	28.9	12.7	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0	0.2	0.0		3.0	0.1	0.0	105.7	0.2	0.1
Delay (s)	22.5	22.5	22.0	23.9	23.2		29.6	10.9	9.4	134.6	12.9	11.6
Level of Service	C	C	C	C	C		C	B	A	F	B	B
Approach Delay (s)		22.3			23.5			13.3			18.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	17.3
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



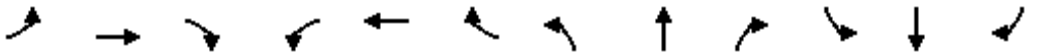
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	41	21	6	57	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	43	22	6	60	24
RTOR Reduction (vph)	0	36	0	6	0	0
Lane Group Flow (vph)	5	7	22	1	60	24
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	3.5	3.5	1.9	1.9	2.4	9.3
Effective Green, g (s)	3.5	3.5	1.9	1.9	2.4	9.3
Actuated g/C Ratio	0.15	0.15	0.08	0.08	0.11	0.41
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	272	243	155	132	186	760
v/s Ratio Prot	0.00		c0.01		c0.03	0.01
v/s Ratio Perm		c0.00		0.00		
v/c Ratio	0.02	0.03	0.14	0.00	0.32	0.03
Uniform Delay, d1	8.2	8.2	9.7	9.6	9.4	4.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.4	0.0	1.0	0.0
Delay (s)	8.2	8.2	10.1	9.6	10.5	4.1
Level of Service	A	A	B	A	B	A
Approach Delay (s)	8.2		10.0			8.6
Approach LOS	A		B			A

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	22.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	24.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	371	37	45	447	11	38	8	37	6	46	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1713	1583		1812	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1713	1583		1812	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	391	39	47	471	12	40	8	39	6	48	11
RTOR Reduction (vph)	0	0	20	0	0	6	0	0	35	0	9	0
Lane Group Flow (vph)	3	391	19	47	471	6	24	24	4	0	56	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	0.6	22.8	22.8	2.1	24.3	24.3	3.8	3.8	3.8		3.7	
Effective Green, g (s)	2.6	24.8	24.8	3.1	26.3	26.3	4.8	4.8	4.8		5.7	
Actuated g/C Ratio	0.05	0.50	0.50	0.06	0.52	0.52	0.10	0.10	0.10		0.11	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	92	1752	784	110	1858	831	161	164	152		206	
v/s Ratio Prot	0.00	0.11		c0.03	c0.13		c0.01	0.01			c0.03	
v/s Ratio Perm			0.01			0.00			0.00			
v/c Ratio	0.03	0.22	0.02	0.43	0.25	0.01	0.15	0.15	0.02		0.27	
Uniform Delay, d1	22.6	7.2	6.5	22.6	6.5	5.7	20.8	20.8	20.5		20.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.1	0.1	0.0	1.0	0.1	0.0	0.2	0.2	0.0		0.3	
Delay (s)	22.6	7.3	6.5	23.6	6.6	5.7	20.9	20.9	20.6		20.6	
Level of Service	C	A	A	C	A	A	C	C	C		C	
Approach Delay (s)		7.3			8.1			20.8			20.6	
Approach LOS		A			A			C			C	

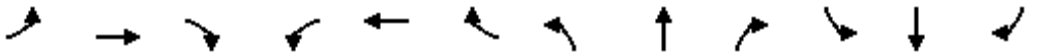
Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	50.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	351	119	69	368	7	70	9	31	15	37	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1703	1478	1770	1863	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1703	1478	1770	1863	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	369	125	73	387	7	74	9	33	16	39	81
RTOR Reduction (vph)	0	0	65	0	0	3	0	0	31	0	0	71
Lane Group Flow (vph)	24	369	60	73	387	4	41	42	2	16	39	10
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	0.4	18.3	18.3	1.5	19.4	19.4	2.0	2.0	2.0	3.7	3.7	3.7
Effective Green, g (s)	1.4	21.0	21.0	2.5	22.1	22.1	3.0	3.0	3.0	4.7	5.6	5.6
Actuated g/C Ratio	0.03	0.48	0.48	0.06	0.50	0.50	0.07	0.07	0.07	0.11	0.13	0.13
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	57	1697	709	101	1786	746	115	117	101	190	238	189
v/s Ratio Prot	0.01	0.10		c0.04	c0.11		0.02	c0.02		0.01	c0.02	
v/s Ratio Perm			0.04			0.00			0.00			0.01
v/c Ratio	0.42	0.22	0.08	0.72	0.22	0.00	0.36	0.36	0.02	0.08	0.16	0.05
Uniform Delay, d1	20.8	6.6	6.2	20.3	6.0	5.4	19.5	19.5	19.0	17.6	17.0	16.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.1	0.1	19.3	0.1	0.0	0.7	0.7	0.0	0.3	0.4	0.2
Delay (s)	22.6	6.7	6.3	39.6	6.1	5.4	20.2	20.2	19.1	17.9	17.5	16.9
Level of Service	C	A	A	D	A	A	C	C	B	B	B	B
Approach Delay (s)		7.3			11.3			19.9			17.2	
Approach LOS		A			B			B			B	

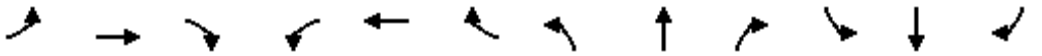
Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	43.8	Sum of lost time (s)	8.7
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



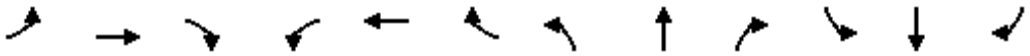
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	297	57	31	361	3	52	15	4	0	7	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1793	1583		1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1793	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	313	60	33	380	3	55	16	4	0	7	28
RTOR Reduction (vph)	0	0	28	0	0	1	0	0	4	0	0	27
Lane Group Flow (vph)	63	313	32	33	380	2	0	71	0	0	7	1
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	1.3	20.8	20.8	0.4	19.9	19.9		3.7	3.7		1.1	1.1
Effective Green, g (s)	2.3	22.8	22.8	1.4	21.9	21.9		4.7	4.7		2.1	2.1
Actuated g/C Ratio	0.05	0.53	0.53	0.03	0.51	0.51		0.11	0.11		0.05	0.05
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3		3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	95	1876	839	58	1802	806		196	173		91	77
v/s Ratio Prot	c0.04	0.09		0.02	c0.11			c0.04			c0.00	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.66	0.17	0.04	0.57	0.21	0.00		0.36	0.00		0.08	0.02
Uniform Delay, d1	20.0	5.2	4.8	20.5	5.8	5.2		17.8	17.1		19.5	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	12.7	0.1	0.0	7.4	0.1	0.0		1.3	0.0		0.1	0.0
Delay (s)	32.6	5.3	4.9	27.9	5.9	5.2		19.1	17.1		19.7	19.5
Level of Service	C	A	A	C	A	A		B	B		B	B
Approach Delay (s)		9.2			7.6			19.0			19.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	43.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	169	136	7	297	111	83	12	4	28	63	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1706	1583		1835	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1706	1583		1835	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	28	178	143	7	313	117	87	13	4	29	66	8
RTOR Reduction (vph)	0	0	60	0	0	69	0	0	3	0	0	7
Lane Group Flow (vph)	28	178	83	7	313	48	50	50	1	0	95	1
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	0.5	16.9	24.6	0.3	16.7	16.7	7.7	7.7	7.7		3.9	3.9
Effective Green, g (s)	1.5	18.9	26.6	1.3	18.7	18.7	8.7	8.7	8.7		4.9	4.9
Actuated g/C Ratio	0.03	0.41	0.58	0.03	0.41	0.41	0.19	0.19	0.19		0.11	0.11
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	58	1460	919	50	1445	646	319	324	301		196	169
v/s Ratio Prot	c0.02	0.05	0.02	0.00	c0.09		c0.03	0.03			c0.05	
v/s Ratio Perm			0.04			0.03			0.00			0.00
v/c Ratio	0.48	0.12	0.09	0.14	0.22	0.07	0.16	0.15	0.00		0.48	0.01
Uniform Delay, d1	21.8	8.3	4.2	21.7	8.8	8.3	15.5	15.5	15.0		19.3	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.3	0.1	0.1	0.5	0.1	0.1	0.3	0.3	0.0		0.7	0.0
Delay (s)	24.1	8.4	4.3	22.2	8.9	8.3	15.8	15.7	15.0		19.9	18.3
Level of Service	C	A	A	C	A	A	B	B	B		B	B
Approach Delay (s)		8.0			9.0			15.7			19.8	
Approach LOS		A			A			B			B	

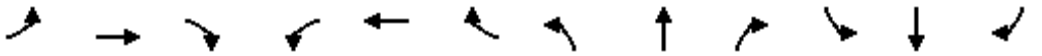
Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	36	84	43	12	5	23	721	71	38	1149	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.90		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1643		3433	1778		1676	4984	1414	1745	5187	1472
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1643		3433	1778		1676	4984	1414	1745	5187	1472
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	38	88	45	13	5	24	759	75	40	1209	103
RTOR Reduction (vph)	0	75	0	0	5	0	0	0	37	0	0	49
Lane Group Flow (vph)	116	51	0	45	13	0	24	759	38	40	1209	54
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	11.1	9.2		5.6	5.0		1.7	30.8	30.8	2.6	31.7	31.7
Effective Green, g (s)	12.1	10.2		6.6	6.0		2.7	34.2	34.2	3.6	35.1	35.1
Actuated g/C Ratio	0.18	0.15		0.10	0.09		0.04	0.51	0.51	0.05	0.52	0.52
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	316	248		336	158		67	2525	716	93	2697	765
v/s Ratio Prot	c0.07	0.03		c0.01	0.01		0.01	0.15		c0.02	c0.23	
v/s Ratio Perm									0.03			0.04
v/c Ratio	0.37	0.21		0.13	0.09		0.36	0.30	0.05	0.43	0.45	0.07
Uniform Delay, d1	24.3	25.1		27.8	28.2		31.6	9.7	8.4	31.0	10.1	8.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3		0.1	0.1		1.2	0.1	0.1	1.2	0.2	0.1
Delay (s)	24.6	25.5		27.9	28.3		32.8	9.8	8.5	32.1	10.4	8.1
Level of Service	C	C		C	C		C	A	A	C	B	A
Approach Delay (s)		25.0			28.0			10.3			10.8	
Approach LOS		C			C			B			B	

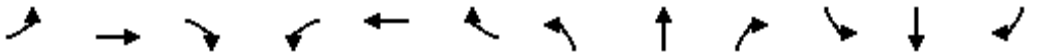
Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	67.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



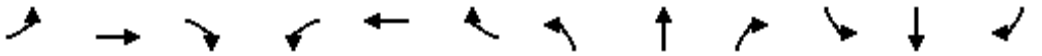
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	106	98	169	249	11	113	780	85	27	1208	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	1851		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	1851		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	112	103	178	262	12	119	821	89	28	1272	63
RTOR Reduction (vph)	0	0	88	0	2	0	0	0	33	0	0	25
Lane Group Flow (vph)	31	112	15	178	272	0	119	821	56	28	1272	38
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	5.0	21.4	21.4	12.0	28.4		9.6	94.2	94.2	3.8	87.3	87.3
Effective Green, g (s)	5.0	21.4	21.4	12.0	28.4		9.6	94.2	94.2	3.8	87.3	87.3
Actuated g/C Ratio	0.03	0.14	0.14	0.08	0.19		0.06	0.63	0.63	0.03	0.58	0.58
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	5.6	5.6	2.0	4.3	4.3
Lane Grp Cap (vph)	59	505	226	275	350		220	3193	994	87	2959	921
v/s Ratio Prot	0.02	0.03		c0.05	c0.15		c0.03	0.16		0.01	c0.25	
v/s Ratio Perm			0.01						0.04			0.02
v/c Ratio	0.53	0.22	0.07	0.65	0.78		0.54	0.26	0.06	0.32	0.43	0.04
Uniform Delay, d1	71.3	56.9	55.6	66.9	57.8		68.1	12.4	10.8	71.8	17.5	13.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.26	0.52	0.11	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.3	0.2	3.9	10.9		1.4	0.2	0.1	0.8	0.2	0.0
Delay (s)	75.2	57.2	55.8	70.8	68.7		87.2	6.7	1.3	72.6	17.6	13.5
Level of Service	E	E	E	E	E		F	A	A	E	B	B
Approach Delay (s)		58.9			69.5			15.5			18.6	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



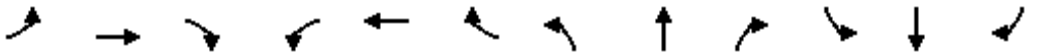
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	31	130	179	48	59	107	945	274	110	1386	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.3	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1762	1583	1610	3163		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1762	1583	1610	3163		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	33	137	188	51	62	113	995	288	116	1459	56
RTOR Reduction (vph)	0	0	129	0	34	0	0	0	73	0	0	19
Lane Group Flow (vph)	22	36	8	102	165	0	113	995	215	116	1459	37
Turn Type	Split		Perm	Split			Prot		pm+ov	Prot		Perm
Protected Phases	8	8		7	7		5	2	7	1	6	
Permitted Phases			8						2			6
Actuated Green, G (s)	8.8	8.8	8.8	16.2	16.2		10.3	95.6	111.8	9.8	95.1	95.1
Effective Green, g (s)	8.8	8.8	8.8	16.2	16.2		10.3	95.6	111.8	9.8	95.1	95.1
Actuated g/C Ratio	0.06	0.06	0.06	0.11	0.11		0.07	0.64	0.75	0.07	0.63	0.63
Clearance Time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.3	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	4.3	4.3
Lane Grp Cap (vph)	99	103	93	174	342		236	3241	1236	224	3224	1004
v/s Ratio Prot	0.01	c0.02		c0.06	0.05		c0.03	0.20	0.02	0.03	c0.29	
v/s Ratio Perm			0.01						0.12			0.02
v/c Ratio	0.22	0.35	0.09	0.59	0.48		0.48	0.31	0.17	0.52	0.45	0.04
Uniform Delay, d1	67.3	67.8	66.8	63.7	63.0		67.3	12.3	5.6	67.8	14.1	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.16	0.60	0.00	0.84	0.43	0.17
Incremental Delay, d2	1.1	2.1	0.4	5.0	1.1		1.5	0.2	0.1	1.9	0.2	0.0
Delay (s)	68.5	69.9	67.2	68.7	64.0		79.6	7.6	0.1	58.8	6.3	1.7
Level of Service	E	E	E	E	E		E	A	A	E	A	A
Approach Delay (s)		67.8			65.6			11.8			9.9	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



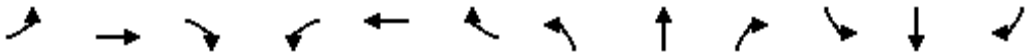
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	287	0	0	264	365	805	0	0	1590	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0			4.0	3.0	4.0			4.0	4.0
Lane Util. Factor			1.00			1.00	0.97	0.91			0.91	1.00
Frt			0.86			0.86	1.00	1.00			1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1611			1611	3433	5085			5085	1583
Flt Permitted			1.00			1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1611			1611	3433	5085			5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	302	0	0	278	384	847	0	0	1674	184
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	0	302	0	0	278	384	847	0	0	1674	137
Turn Type			Free			Free	Prot					Perm
Protected Phases							5	2			6	
Permitted Phases			Free			Free						6
Actuated Green, G (s)			75.0			75.0	13.5	75.0			52.5	52.5
Effective Green, g (s)			75.0			75.0	14.5	75.0			53.5	53.5
Actuated g/C Ratio			1.00			1.00	0.19	1.00			0.71	0.71
Clearance Time (s)							4.0	5.0			5.0	5.0
Vehicle Extension (s)							3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			1611			1611	664	5085			3627	1129
v/s Ratio Prot							c0.11	0.17			c0.33	
v/s Ratio Perm			0.19			0.17						0.09
v/c Ratio			0.19			0.17	0.58	0.17			0.46	0.12
Uniform Delay, d1			0.0			0.0	27.5	0.0			4.6	3.4
Progression Factor			1.00			1.00	1.06	1.00			0.60	0.28
Incremental Delay, d2			0.3			0.2	1.2	0.1			0.4	0.2
Delay (s)			0.3			0.2	30.4	0.1			3.2	1.2
Level of Service			A			A	C	A			A	A
Approach Delay (s)		0.3			0.2			9.5			3.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	4.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



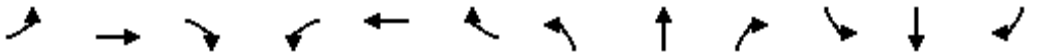
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	1199	0	0	212	0	958	184	538	1339	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.3			3.0		4.7	4.7	4.7	4.7	
Lane Util. Factor			1.00			1.00		0.91	1.00	0.97	0.91	
Frt			0.86			0.86		1.00	0.85	1.00	1.00	
Flt Protected			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1611			1611		5085	1583	3433	5085	
Flt Permitted			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1611			1611		5085	1583	3433	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	1262	0	0	223	0	1008	194	566	1409	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	0	0
Lane Group Flow (vph)	0	0	1262	0	0	223	0	1008	184	566	1409	0
Turn Type			custom			Free			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases			5			Free			2			
Actuated Green, G (s)			101.7			150.0		106.1	106.1	32.5	37.3	
Effective Green, g (s)			101.7			150.0		107.1	107.1	33.5	38.3	
Actuated g/C Ratio			0.68			1.00		0.71	0.71	0.22	0.26	
Clearance Time (s)			5.3					5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)			1092			1611		3631	1130	767	1298	
v/s Ratio Prot								0.20		0.16	c0.28	
v/s Ratio Perm			c0.78			0.14			0.12			
v/c Ratio			1.16			0.14		0.28	0.16	0.74	1.09	
Uniform Delay, d1			24.1			0.0		7.7	6.9	54.2	55.9	
Progression Factor			1.00			1.00		0.40	0.28	0.72	0.86	
Incremental Delay, d2			80.7			0.2		0.2	0.3	3.4	50.9	
Delay (s)			104.8			0.2		3.2	2.2	42.1	99.1	
Level of Service			F			A		A	A	D	F	
Approach Delay (s)		104.8			0.2			3.1			82.7	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM Average Control Delay	64.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	108.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



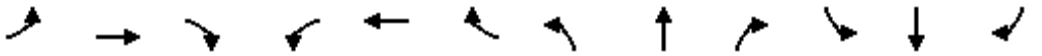
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	1	9	8	9	17	43	0	4	13	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.95			0.95		1.00	1.00		1.00	0.92	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750			1745		1770	3539		1770	1710	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1779			1776		1770	3539		1770	1710	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	1	1	9	8	9	18	45	0	4	14	17
RTOR Reduction (vph)	0	1	0	0	9	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	2	0	0	17	0	18	45	0	4	23	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		0.7			0.7		0.7	19.2		0.7	19.2	
Effective Green, g (s)		0.7			0.7		0.7	19.2		0.7	19.2	
Actuated g/C Ratio		0.02			0.02		0.02	0.51		0.02	0.51	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		33			33		33	1822		33	880	
v/s Ratio Prot							c0.01	0.01		0.00	c0.01	
v/s Ratio Perm		c0.00			c0.01							
v/c Ratio		0.06			0.52		0.55	0.02		0.12	0.03	
Uniform Delay, d1		18.0			18.1		18.1	4.4		18.0	4.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			6.7		9.5	0.0		0.6	0.0	
Delay (s)		18.3			24.8		27.6	4.5		18.6	4.5	
Level of Service		B			C		C	A		B	A	
Approach Delay (s)		18.3			24.8			11.1			6.1	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	37.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



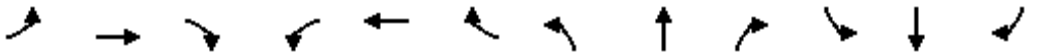
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	9	8	64	10	63	20	990	92	296	1960	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.4	3.4	3.0	2.5	3.2	3.0	2.5	3.2	3.2
Lane Util. Factor	0.86	0.86	1.00	0.86	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3044	3089	1583	3044	3101	1583	3335	4940	1538	3335	4940	1489
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3044	3089	1583	3044	3101	1583	3335	4940	1538	3335	4940	1489
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	9	8	67	11	66	21	1042	97	312	2063	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	53	35	8	45	33	66	21	1042	97	312	2063	44
Confl. Peds. (#/hr)												10
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	7.3	7.3	150.0	6.0	6.0	150.0	3.6	99.7	150.0	18.4	114.5	114.5
Effective Green, g (s)	8.8	8.8	150.0	7.5	7.5	150.0	5.1	102.2	150.0	19.9	117.0	117.0
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.05	1.00	0.03	0.68	1.00	0.13	0.78	0.78
Clearance Time (s)	4.0	4.0		4.9	4.9		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.9	3.9		2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	179	181	1583	152	155	1583	113	3366	1538	442	3853	1161
v/s Ratio Prot	c0.02	0.01		c0.01	0.01		0.01	0.21		c0.09	c0.42	
v/s Ratio Perm			0.01			0.04			0.06			0.03
v/c Ratio	0.30	0.19	0.01	0.30	0.21	0.04	0.19	0.31	0.06	0.71	0.54	0.04
Uniform Delay, d1	67.6	67.2	0.0	68.7	68.4	0.0	70.4	9.7	0.0	62.2	6.2	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.29	0.74	1.00	1.16	0.56	0.24
Incremental Delay, d2	0.9	0.5	0.0	1.4	0.9	0.0	0.2	0.1	0.1	0.4	0.0	0.0
Delay (s)	68.6	67.7	0.0	70.2	69.3	0.0	91.0	7.2	0.1	72.6	3.6	0.9
Level of Service	E	E	A	E	E	A	F	A	A	E	A	A
Approach Delay (s)		62.6			37.8			8.1			12.4	
Approach LOS		E			D			A			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	175	1	119	5	2	4	42	1458	1	5	1544	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1774	1583		1799	1583	1770	3539		1770	3539	1583
Flt Permitted		0.95	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1774	1583		1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	184	1	125	5	2	4	44	1535	1	5	1625	166
RTOR Reduction (vph)	0	0	102	0	0	4	0	0	0	0	0	47
Lane Group Flow (vph)	0	185	23	0	7	0	44	1536	0	5	1625	119
Turn Type	Split		Perm	Perm		Perm	Prot			Prot		Perm
Protected Phases	4	4			3		5	2		1	6	
Permitted Phases			4	3		3						6
Actuated Green, G (s)		12.5	12.5		1.4	1.4	2.9	39.2		0.8	37.1	37.1
Effective Green, g (s)		13.5	13.5		2.4	2.4	5.9	41.2		1.8	40.1	40.1
Actuated g/C Ratio		0.19	0.19		0.03	0.03	0.08	0.57		0.02	0.55	0.55
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		329	294		61	52	143	2003		44	1949	872
v/s Ratio Prot		c0.10					c0.02	0.43		0.00	c0.46	
v/s Ratio Perm			0.01		c0.00	0.00						0.08
v/c Ratio		0.56	0.08		0.11	0.00	0.31	0.77		0.11	0.83	0.14
Uniform Delay, d1		27.0	24.5		34.2	34.0	31.5	12.1		34.7	13.6	7.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		1.3	0.0		0.3	0.0	0.4	2.0		0.4	3.4	0.1
Delay (s)		28.3	24.6		34.5	34.0	32.0	14.1		35.1	17.0	8.0
Level of Service		C	C		C	C	C	B		D	B	A
Approach Delay (s)		26.8			34.3			14.6			16.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	10.9
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

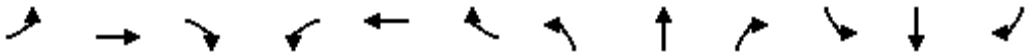


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	309	14	348	3	6	18	82	1189	8	7	1383	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	0.86		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1594		1770	1863	1583	3433	3536		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1594		1770	1863	1583	3433	3536		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	325	15	366	3	6	19	86	1252	8	7	1456	324
RTOR Reduction (vph)	0	120	0	0	0	19	0	0	0	0	0	91
Lane Group Flow (vph)	325	261	0	3	6	0	86	1260	0	7	1456	233
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						6
Actuated Green, G (s)	17.4	17.4		1.0	1.0	1.0	2.3	41.2		0.5	39.4	39.4
Effective Green, g (s)	18.4	18.4		2.0	2.0	2.0	3.3	43.7		1.5	41.9	41.9
Actuated g/C Ratio	0.24	0.24		0.03	0.03	0.03	0.04	0.56		0.02	0.54	0.54
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0		2.0	2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	814	378		46	48	41	146	1991		34	1911	855
v/s Ratio Prot	0.09	c0.16		0.00	c0.00		c0.03	0.36		0.00	c0.41	
v/s Ratio Perm						0.00						0.15
v/c Ratio	0.40	0.69		0.07	0.12	0.01	0.59	0.63		0.21	0.76	0.27
Uniform Delay, d1	24.9	27.0		36.9	36.9	36.8	36.5	11.5		37.5	14.0	9.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	5.4		0.2	0.4	0.0	3.9	0.9		1.1	2.2	0.4
Delay (s)	25.3	32.4		37.1	37.4	36.9	40.4	12.4		38.6	16.2	10.0
Level of Service	C	C		D	D	D	D	B		D	B	B
Approach Delay (s)		29.1			37.0			14.2			15.1	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

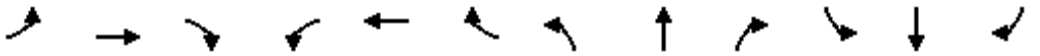
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	140	443	879	443	905	837
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	4.3
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	466	925	466	953	881
RTOR Reduction (vph)	0	21	0	264	0	0
Lane Group Flow (vph)	147	445	925	202	953	881
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	7.9	24.0	24.5	24.5	16.1	44.6
Effective Green, g (s)	8.9	28.6	26.8	26.8	18.4	45.6
Actuated g/C Ratio	0.14	0.46	0.43	0.43	0.30	0.74
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	5.3
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	494	776	1535	686	1022	2611
v/s Ratio Prot	0.04	c0.17	c0.26		c0.28	0.25
v/s Ratio Perm		0.11		0.13		
v/c Ratio	0.30	0.57	0.60	0.29	0.93	0.34
Uniform Delay, d1	23.7	12.1	13.4	11.4	21.1	2.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.6	0.8	0.3	14.4	0.1
Delay (s)	23.8	12.8	14.2	11.7	35.5	2.9
Level of Service	C	B	B	B	D	A
Approach Delay (s)	15.4		13.3			19.9
Approach LOS	B		B			B

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	4.7
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	318	12	18	36	20	45	13	1066	0	41	795	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.94		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1673			1720		1770	3539		1770	3484	
Flt Permitted	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1673			1720		1770	3539		1770	3484	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	335	13	19	38	21	47	14	1122	0	43	837	97
RTOR Reduction (vph)	0	7	0	0	45	0	0	0	0	0	11	0
Lane Group Flow (vph)	184	176	0	0	61	0	14	1122	0	43	923	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	10.8	10.8			3.1		0.5	25.9		1.6	26.6	
Effective Green, g (s)	10.8	10.8			3.1		0.5	25.9		1.6	26.6	
Actuated g/C Ratio	0.19	0.19			0.05		0.01	0.44		0.03	0.46	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Vehicle Extension (s)	2.0	2.0			2.0		2.0	4.2		2.0	3.2	
Lane Grp Cap (vph)	311	310			91		15	1572		49	1590	
v/s Ratio Prot	c0.11	0.10			c0.04		0.01	c0.32		c0.02	0.26	
v/s Ratio Perm												
v/c Ratio	0.59	0.57			0.68		0.93	0.71		0.88	0.58	
Uniform Delay, d1	21.7	21.6			27.1		28.9	13.2		28.3	11.7	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	1.4			14.5		195.4	1.7		81.4	0.6	
Delay (s)	23.7	23.0			41.6		224.3	14.9		109.7	12.3	
Level of Service	C	C			D		F	B		F	B	
Approach Delay (s)		23.4			41.6			17.5			16.6	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	16.9
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

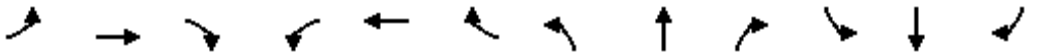


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	10	27	25	1	7	41	1077	25	8	820	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1777	1583	1770	3527		1770	3523	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1777	1583	1770	3527		1770	3523	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	11	28	26	1	7	43	1134	26	8	863	28
RTOR Reduction (vph)	0	0	25	0	0	7	0	1	0	0	2	0
Lane Group Flow (vph)	0	91	3	0	27	0	43	1159	0	8	889	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		7.4	7.4		2.3	2.3	4.7	34.3		0.6	30.2	
Effective Green, g (s)		7.4	7.4		2.3	2.3	4.7	34.3		0.6	30.2	
Actuated g/C Ratio		0.12	0.12		0.04	0.04	0.08	0.56		0.01	0.49	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)		215	190		66	59	135	1967		17	1730	
v/s Ratio Prot		c0.05			c0.02		0.02	c0.33		0.00	c0.25	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.42	0.02		0.41	0.00	0.32	0.59		0.47	0.51	
Uniform Delay, d1		25.1	23.8		28.9	28.5	26.9	9.0		30.3	10.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		1.5	0.0	0.5	0.6		7.3	0.4	
Delay (s)		25.6	23.9		30.4	28.5	27.4	9.5		37.6	11.0	
Level of Service		C	C		C	C	C	A		D	B	
Approach Delay (s)		25.2			30.0			10.2			11.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.5	Sum of lost time (s)	17.8
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

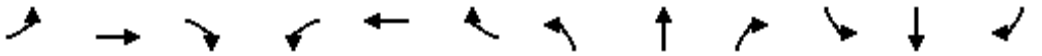
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	53	145	321	8	365	589
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	153	338	8	384	620
RTOR Reduction (vph)	0	119	0	6	0	0
Lane Group Flow (vph)	56	34	338	2	384	620
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.0	9.0	10.2	10.2	17.1	31.3
Effective Green, g (s)	11.0	11.0	12.9	12.9	19.1	34.0
Actuated g/C Ratio	0.22	0.22	0.26	0.26	0.38	0.68
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	755	348	1312	408	676	3458
v/s Ratio Prot	0.02		c0.07		c0.22	0.12
v/s Ratio Perm		c0.02		0.00		
v/c Ratio	0.07	0.10	0.26	0.01	0.57	0.18
Uniform Delay, d1	15.5	15.5	14.7	13.8	12.2	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.2	0.0	0.7	0.0
Delay (s)	15.5	15.6	14.9	13.8	12.9	3.0
Level of Service	B	B	B	B	B	A
Approach Delay (s)	15.6		14.9			6.7
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	449	55	204	371	93	20	3	159	90	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	5002		1770	5085	1583		1785	1583	1681	1690	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	5002		1770	5085	1583		1785	1583	1681	1690	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	473	58	215	391	98	21	3	167	95	3	16
RTOR Reduction (vph)	0	15	0	0	0	54	0	0	146	0	0	14
Lane Group Flow (vph)	36	516	0	215	391	44	0	24	21	49	49	2
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	5.7	20.2		13.1	27.6	27.6		7.3	7.3	8.5	8.5	8.5
Effective Green, g (s)	6.7	22.5		14.1	29.9	29.9		8.3	8.3	9.5	9.5	9.5
Actuated g/C Ratio	0.10	0.34		0.21	0.45	0.45		0.12	0.12	0.14	0.14	0.14
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	179	1695		376	2290	713		223	198	241	242	226
v/s Ratio Prot	0.02	c0.10		c0.12	0.08			c0.01		c0.03	0.03	
v/s Ratio Perm						0.03			0.01			0.00
v/c Ratio	0.20	0.30		0.57	0.17	0.06		0.11	0.11	0.20	0.20	0.01
Uniform Delay, d1	27.4	16.2		23.4	10.9	10.3		25.8	25.8	25.1	25.1	24.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2		1.3	0.1	0.1		0.1	0.1	0.2	0.2	0.0
Delay (s)	27.6	16.4		24.8	10.9	10.4		25.8	25.8	25.3	25.3	24.4
Level of Service	C	B		C	B	B		C	C	C	C	C
Approach Delay (s)		17.1			15.1			25.8			25.1	
Approach LOS		B			B			C			C	

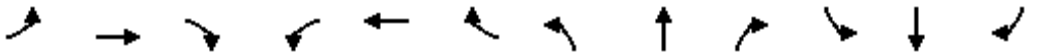
Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	748	288	65	185	77	370	429	35	80	334	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	232	787	303	68	195	81	389	452	37	84	352	52
RTOR Reduction (vph)	0	0	191	0	0	58	0	0	28	0	0	40
Lane Group Flow (vph)	232	787	112	68	195	23	389	452	9	84	352	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	10.4	23.5	23.5	4.3	17.0	17.0	9.3	16.5	16.5	6.3	13.5	13.5
Effective Green, g (s)	11.4	25.5	25.5	5.3	19.7	19.7	10.3	18.8	17.5	7.3	15.8	15.8
Actuated g/C Ratio	0.17	0.37	0.37	0.08	0.29	0.29	0.15	0.27	0.25	0.11	0.23	0.23
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	293	1312	587	136	1013	453	514	1390	403	377	1209	376
v/s Ratio Prot	c0.13	c0.22		0.04	0.06		c0.11	c0.09		0.02	0.07	
v/s Ratio Perm			0.07			0.01			0.01			0.01
v/c Ratio	0.79	0.60	0.19	0.50	0.19	0.05	0.76	0.33	0.02	0.22	0.29	0.03
Uniform Delay, d1	27.6	17.5	14.7	30.5	18.5	17.8	28.0	19.9	19.2	28.2	21.9	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8	1.1	0.3	1.1	0.1	0.1	5.6	0.2	0.0	0.1	0.2	0.1
Delay (s)	40.3	18.6	15.0	31.5	18.7	17.9	33.6	20.2	19.3	28.3	22.1	20.6
Level of Service	D	B	B	C	B	B	C	C	B	C	C	C
Approach Delay (s)		21.6			21.0			26.1			23.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

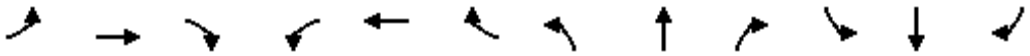


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	2	14	25	2	132	49	787	41	136	465	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.91	1.00
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1786	1583		1807	1600	1770	3736		1832	5790	1639
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1786	1583		1807	1600	1770	3736		1832	5790	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	2	15	26	2	139	52	828	43	143	489	22
RTOR Reduction (vph)	0	0	14	0	0	104	0	4	0	0	0	10
Lane Group Flow (vph)	0	14	1	0	28	35	52	867	0	143	489	12
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		2.5	2.5		3.7	11.7	1.6	22.7		8.0	29.1	29.1
Effective Green, g (s)		2.5	2.5		3.7	13.7	1.6	25.0		9.0	31.4	29.1
Actuated g/C Ratio		0.05	0.05		0.07	0.25	0.03	0.46		0.17	0.58	0.54
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		82	73		123	493	52	1723		304	3354	880
v/s Ratio Prot		c0.01			c0.02	0.01	c0.03	c0.23		c0.08	0.08	
v/s Ratio Perm			0.00			0.01						0.01
v/c Ratio		0.17	0.01		0.23	0.07	1.00	0.50		0.47	0.15	0.01
Uniform Delay, d1		24.9	24.7		23.9	15.4	26.3	10.2		20.4	5.2	5.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4	0.0		0.3	0.0	124.8	0.5		0.4	0.0	0.0
Delay (s)		25.2	24.7		24.2	15.4	151.1	10.7		20.9	5.3	5.9
Level of Service		C	C		C	B	F	B		C	A	A
Approach Delay (s)		24.9			16.9			18.7			8.7	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

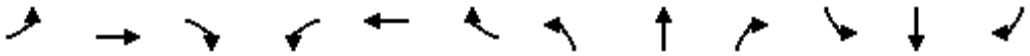
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	179	795	1	17	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	2.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3539		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3539		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	188	837	1	18	466
RTOR Reduction (vph)	0	147	0	0	0	0
Lane Group Flow (vph)	2	41	838	0	18	466
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	8.0	8.0	19.9		0.9	24.7
Effective Green, g (s)	9.0	9.0	21.9		1.9	26.7
Actuated g/C Ratio	0.22	0.22	0.53		0.05	0.64
Clearance Time (s)	4.0	4.0	4.8		4.0	4.9
Vehicle Extension (s)	2.0	2.0	3.9		2.0	2.9
Lane Grp Cap (vph)	383	342	1863		81	2271
v/s Ratio Prot	0.00		c0.24		0.01	c0.13
v/s Ratio Perm		c0.03				
v/c Ratio	0.01	0.12	0.45		0.22	0.21
Uniform Delay, d1	12.8	13.1	6.1		19.1	3.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.1	0.2		0.5	0.0
Delay (s)	12.8	13.2	6.3		19.6	3.1
Level of Service	B	B	A		B	A
Approach Delay (s)	13.2		6.3			3.7
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	8.7
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	5	0	10	0	1465	27	24	1222	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		3.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3530		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3530		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	5	0	11	0	1542	28	25	1286	0
RTOR Reduction (vph)	0	0	0	0	0	11	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	5	0	0	0	1569	0	25	1286	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				1.3		1.3		51.2		0.9	56.1	
Effective Green, g (s)				2.3		2.3		53.2		1.9	58.1	
Actuated g/C Ratio				0.03		0.03		0.72		0.03	0.79	
Clearance Time (s)				4.0		4.0		4.9		4.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				55		49		2545		46	2786	
v/s Ratio Prot				c0.00				c0.44		0.01	c0.36	
v/s Ratio Perm						0.00						
v/c Ratio				0.09		0.01		0.62		0.54	0.46	
Uniform Delay, d1				34.7		34.6		5.2		35.5	2.6	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.3		0.0		0.7		6.9	0.3	
Delay (s)				35.0		34.7		5.9		42.4	2.9	
Level of Service				C		C		A		D	A	
Approach Delay (s)		0.0			34.8			5.9			3.6	
Approach LOS		A			C			A			A	

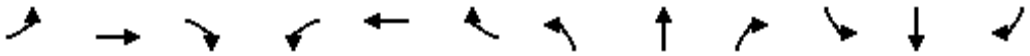
Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	16.3
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	24	31	60	27	55	35	1666	41	84	1167	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1643		1770	3522		1770	3522	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1643		1770	3522		1770	3522	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	49	25	33	63	28	58	37	1754	43	88	1228	31
RTOR Reduction (vph)	0	0	30	0	52	0	0	2	0	0	2	0
Lane Group Flow (vph)	49	25	3	63	34	0	37	1795	0	88	1257	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3									
Actuated Green, G (s)	6.1	6.1	6.1	7.7	7.7		3.9	47.0		5.3	48.8	
Effective Green, g (s)	7.1	7.1	7.1	8.7	8.7		4.9	49.0		6.3	50.8	
Actuated g/C Ratio	0.09	0.09	0.09	0.10	0.10		0.06	0.59		0.08	0.61	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	151	159	135	185	171		104	2069		134	2145	
v/s Ratio Prot	c0.03	0.01		c0.04	0.02		0.02	c0.51		c0.05	0.36	
v/s Ratio Perm			0.00									
v/c Ratio	0.32	0.16	0.02	0.34	0.20		0.36	0.87		0.66	0.59	
Uniform Delay, d1	35.9	35.4	35.0	34.7	34.2		37.7	14.5		37.5	9.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.4	0.1	0.9	0.5		0.8	4.4		8.5	0.5	
Delay (s)	36.9	35.8	35.0	35.6	34.6		38.5	18.8		46.0	10.4	
Level of Service	D	D	D	D	C		D	B		D	B	
Approach Delay (s)		36.1			35.1			19.2			12.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	83.4	Sum of lost time (s)	12.3
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

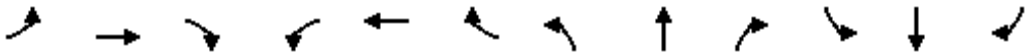
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	23	5	59	18	21	11	2500	16	12	1615	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.97		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2026			1983		1770	4983		1770	4962	
Flt Permitted		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2026			1983		1770	4983		1770	4962	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	24	5	62	19	22	12	2632	17	13	1700	57
RTOR Reduction (vph)	0	4	0	0	17	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	77	0	0	86	0	12	2648	0	13	1752	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split			Split			Prot			Prot		
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)		3.2			5.7		0.6	32.8		0.6	32.8	
Effective Green, g (s)		4.2			6.7		1.6	35.5		1.6	35.5	
Actuated g/C Ratio		0.07			0.11		0.03	0.59		0.03	0.59	
Clearance Time (s)		4.0			4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0		2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		142			221		47	2948		47	2936	
v/s Ratio Prot		c0.04			c0.04		0.01	c0.53		c0.01	0.35	
v/s Ratio Perm												
v/c Ratio		0.54			0.39		0.26	0.90		0.28	0.60	
Uniform Delay, d1		27.0			24.8		28.6	10.7		28.6	7.7	
Progression Factor		1.00			1.00		1.23	0.66		1.09	0.89	
Incremental Delay, d2		2.3			0.4		0.8	3.8		0.9	0.3	
Delay (s)		29.3			25.2		36.0	10.8		32.0	7.2	
Level of Service		C			C		D	B		C	A	
Approach Delay (s)		29.3			25.2			10.9			7.4	
Approach LOS		C			C			B			A	

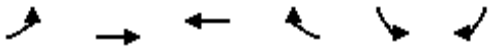
Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



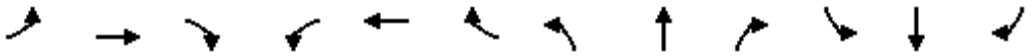
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	0	21	65	0	18	2	2490	73	4	1635	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00		0.97	1.00		0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1532	1770		1532	1770	5059		1770	5083	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1532	1770		1532	1770	5059		1770	5083	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	0	22	68	0	19	2	2621	77	4	1721	5
RTOR Reduction (vph)	0	0	20	0	0	18	0	4	0	0	0	0
Lane Group Flow (vph)	45	0	2	68	0	1	2	2694	0	4	1726	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	3.7		3.7	3.7		3.7	0.6	39.0		0.6	39.0	
Effective Green, g (s)	4.7		4.7	4.7		4.7	1.6	40.5		2.6	40.5	
Actuated g/C Ratio	0.08		0.08	0.08		0.08	0.03	0.68		0.04	0.68	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	139		120	139		120	47	3415		77	3431	
v/s Ratio Prot	0.03			c0.04			0.00	c0.53		c0.00	0.34	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.32		0.01	0.49		0.01	0.04	0.79		0.05	0.50	
Uniform Delay, d1	26.1		25.5	26.5		25.5	28.5	6.8		27.5	4.8	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.17	0.77	
Incremental Delay, d2	0.5		0.0	1.0		0.0	0.1	1.9		0.1	0.1	
Delay (s)	26.6		25.5	27.5		25.5	28.6	8.7		32.3	3.8	
Level of Service	C		C	C		C	C	A		C	A	
Approach Delay (s)		26.3			27.1			8.7			3.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



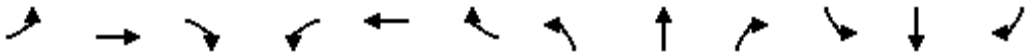
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	9	164	224	66	27	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	3.9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	173	236	69	28	1
RTOR Reduction (vph)	0	0	0	27	0	1
Lane Group Flow (vph)	9	173	236	42	28	0
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.6	30.8	26.2	26.2	3.5	3.5
Effective Green, g (s)	1.6	31.8	27.2	27.2	4.5	4.5
Actuated g/C Ratio	0.04	0.71	0.61	0.61	0.10	0.10
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	2.0
Lane Grp Cap (vph)	63	2506	2144	959	177	159
v/s Ratio Prot	c0.01	0.05	c0.07		c0.02	
v/s Ratio Perm				0.03		0.00
v/c Ratio	0.14	0.07	0.11	0.04	0.16	0.00
Uniform Delay, d1	21.0	2.0	3.7	3.6	18.5	18.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	0.0	0.0	0.2	0.0
Delay (s)	21.4	2.0	3.8	3.6	18.6	18.2
Level of Service	C	A	A	A	B	B
Approach Delay (s)		3.0	3.7		18.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	44.9	Sum of lost time (s)	11.6
Intersection Capacity Utilization	18.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



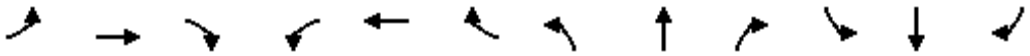
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	350	297	80	178	42	233	560	86	53	214	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4938	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4938	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	368	313	84	187	44	245	589	91	56	225	54
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	39	0
Lane Group Flow (vph)	51	368	313	84	187	44	245	589	91	56	240	0
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			
Actuated Green, G (s)	3.2	13.5	65.0	5.2	15.9	65.0	11.2	23.6	65.0	3.7	16.1	
Effective Green, g (s)	4.2	16.2	65.0	6.2	18.6	65.0	12.2	25.9	65.0	4.7	18.4	
Actuated g/C Ratio	0.06	0.25	1.00	0.10	0.29	1.00	0.19	0.40	1.00	0.07	0.28	
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	114	882	1583	169	1013	1583	332	1410	1583	128	1398	
v/s Ratio Prot	0.03	c0.10		c0.05	0.05		c0.14	c0.17		0.03	0.05	
v/s Ratio Perm			c0.20			0.03			0.06			
v/c Ratio	0.45	0.42	0.20	0.50	0.18	0.03	0.74	0.42	0.06	0.44	0.17	
Uniform Delay, d1	29.3	20.4	0.0	27.9	17.5	0.0	24.9	14.1	0.0	28.9	17.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.5	0.3	0.8	0.2	0.0	7.2	0.4	0.1	0.9	0.1	
Delay (s)	30.3	21.0	0.3	28.8	17.7	0.0	32.1	14.5	0.1	29.8	17.7	
Level of Service	C	C	A	C	B	A	C	B	A	C	B	
Approach Delay (s)		12.8			18.2			17.7			19.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	41	31	47	11	38	19	1277	65	48	332	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1791	1583	1770	3514		1770	3527	
Flt Permitted		0.93	1.00		0.73	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1734	1583		1363	1583	1770	3514		1770	3527	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	43	33	49	12	40	20	1344	68	51	349	8
RTOR Reduction (vph)	0	0	28	0	0	34	0	5	0	0	2	0
Lane Group Flow (vph)	0	54	5	0	61	6	20	1407	0	51	355	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		6.7	6.7		6.7	6.7	0.6	35.4		3.3	38.1	
Effective Green, g (s)		8.3	8.3		8.3	8.3	1.6	38.1		4.3	40.8	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.03	0.64		0.07	0.68	
Clearance Time (s)		4.9	4.9		4.9	4.9	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		240	219		189	219	47	2231		127	2398	
v/s Ratio Prot							0.01	c0.40		c0.03	0.10	
v/s Ratio Perm		0.03	0.00		c0.04	0.00						
v/c Ratio		0.23	0.02		0.32	0.03	0.43	0.63		0.40	0.15	
Uniform Delay, d1		23.0	22.3		23.3	22.4	28.7	6.7		26.6	3.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.7	0.0	2.2	0.6		0.8	0.1	
Delay (s)		23.3	22.4		24.0	22.4	31.0	7.3		27.4	3.5	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		23.0			23.4			7.6			6.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

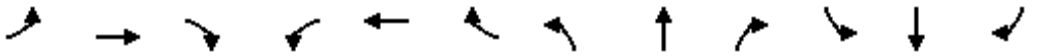


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	4	2	21	1	22	6	1230	31	20	334	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1800	1583		1778	1583	1770	3526		1770	3532	
Flt Permitted		0.86	1.00		0.79	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1605	1583		1469	1583	1770	3526		1770	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	4	2	22	1	23	6	1295	33	21	352	5
RTOR Reduction (vph)	0	0	2	0	0	20	0	1	0	0	1	0
Lane Group Flow (vph)	0	13	0	0	23	3	6	1327	0	21	356	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4		4						
Actuated Green, G (s)		9.9	9.9		9.9	9.9	0.6	64.4		2.0	65.8	
Effective Green, g (s)		10.9	10.9		10.9	10.9	1.6	67.4		3.0	68.8	
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.02	0.75		0.03	0.76	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)		194	192		178	192	31	2641		59	2700	
v/s Ratio Prot							0.00	c0.38		c0.01	0.10	
v/s Ratio Perm		0.01	0.00		c0.02	0.00						
v/c Ratio		0.07	0.00		0.13	0.01	0.19	0.50		0.36	0.13	
Uniform Delay, d1		35.0	34.8		35.3	34.8	43.6	4.5		42.6	2.8	
Progression Factor		1.00	1.00		1.00	1.00	0.75	0.25		1.00	1.00	
Incremental Delay, d2		0.1	0.0		0.1	0.0	1.0	0.2		1.3	0.1	
Delay (s)		35.1	34.8		35.4	34.8	33.7	1.4		43.9	2.9	
Level of Service		D	C		D	C	C	A		D	A	
Approach Delay (s)		35.1			35.1			1.5			5.2	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	3.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

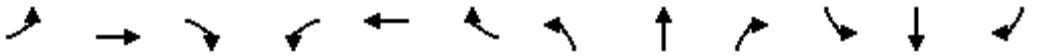
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	28	103	1152	47	34	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3519		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3519		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	108	1213	49	36	339
RTOR Reduction (vph)	0	95	2	0	0	0
Lane Group Flow (vph)	29	13	1260	0	36	339
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	10.1	10.1	62.6		3.6	70.2
Effective Green, g (s)	11.1	11.1	65.6		4.6	73.2
Actuated g/C Ratio	0.12	0.12	0.73		0.05	0.81
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	218	195	2565		90	2878
v/s Ratio Prot	c0.02		c0.36		c0.02	0.10
v/s Ratio Perm		0.01				
v/c Ratio	0.13	0.07	0.49		0.40	0.12
Uniform Delay, d1	35.2	34.9	5.2		41.4	1.7
Progression Factor	1.00	1.00	1.00		1.15	0.81
Incremental Delay, d2	0.1	0.1	0.2		1.1	0.1
Delay (s)	35.3	34.9	5.3		48.5	1.5
Level of Service	D	C	A		D	A
Approach Delay (s)	35.0		5.3			6.0
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



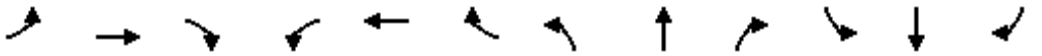
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	0	200	0	1	0	201	695	1	0	510	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5			3.0		3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00	0.98			1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85			1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400	1542			1863		1660	3417	1544		3491	1500
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400	1542			1863		1660	3417	1544		3491	1500
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	136	0	211	0	1	0	212	732	1	0	537	216
RTOR Reduction (vph)	0	161	0	0	0	0	0	0	0	0	0	147
Lane Group Flow (vph)	136	50	0	0	1	0	212	732	1	0	537	69
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	10.4	10.4			1.1		8.6	26.7	26.7		14.1	14.1
Effective Green, g (s)	12.9	12.9			2.1		9.6	30.1	30.1		17.5	17.5
Actuated g/C Ratio	0.24	0.24			0.04		0.18	0.55	0.55		0.32	0.32
Clearance Time (s)	6.0	6.0			4.0		4.0	6.4	6.4		6.4	6.4
Vehicle Extension (s)	4.1	4.1			2.0		2.0	4.3	4.3		4.3	4.3
Lane Grp Cap (vph)	803	364			72		292	1884	851		1119	481
v/s Ratio Prot	c0.04	0.03			c0.00		c0.13	0.21			c0.15	
v/s Ratio Perm									0.00			0.05
v/c Ratio	0.17	0.14			0.01		0.73	0.39	0.00		0.48	0.14
Uniform Delay, d1	16.6	16.5			25.3		21.3	7.0	5.5		14.9	13.2
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.2			0.0		7.4	0.2	0.0		0.5	0.2
Delay (s)	16.7	16.7			25.3		28.7	7.2	5.5		15.4	13.4
Level of Service	B	B			C		C	A	A		B	B
Approach Delay (s)		16.7			25.3			12.0			14.8	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



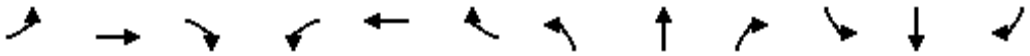
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	0	130	2	0	2	47	846	0	7	680	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4		4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539		1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1770	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	0	137	2	0	2	49	891	0	7	716	16
RTOR Reduction (vph)	0	0	115	0	0	2	0	0	0	0	0	9
Lane Group Flow (vph)	0	60	22	0	2	0	49	891	0	7	716	7
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)		8.1	8.1		2.6	2.6	2.5	26.5		0.7	24.7	24.7
Effective Green, g (s)		8.1	9.1		2.6	2.6	3.5	27.5		0.7	25.7	25.7
Actuated g/C Ratio		0.14	0.16		0.05	0.05	0.06	0.49		0.01	0.46	0.46
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)		255	256		82	73	110	1729		22	1615	723
v/s Ratio Prot		c0.03			c0.00		c0.03	c0.25		0.00	0.20	
v/s Ratio Perm			0.01			0.00						0.00
v/c Ratio		0.24	0.09		0.02	0.00	0.45	0.52		0.32	0.44	0.01
Uniform Delay, d1		21.4	20.1		25.6	25.6	25.5	9.8		27.6	10.4	8.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2	0.1		0.0	0.0	1.0	0.4		3.0	0.3	0.0
Delay (s)		21.5	20.1		25.7	25.6	26.5	10.2		30.6	10.7	8.4
Level of Service		C	C		C	C	C	B		C	B	A
Approach Delay (s)		20.5			25.6			11.1			10.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	11.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



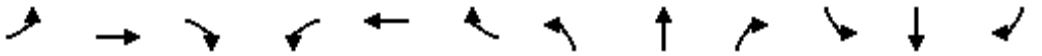
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	1	276	13	1	7	448	827	32	21	681	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1610	3070		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1610	3070		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	1	291	14	1	7	472	871	34	22	717	100
RTOR Reduction (vph)	0	0	237	0	7	0	0	0	15	0	0	72
Lane Group Flow (vph)	40	39	54	8	7	0	472	871	19	22	717	28
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.0	11.0	11.0	2.8	2.8		21.2	37.0	37.0	1.9	17.3	17.3
Effective Green, g (s)	13.7	13.7	13.7	3.8	3.8		22.2	40.4	40.4	2.9	20.7	20.7
Actuated g/C Ratio	0.18	0.18	0.18	0.05	0.05		0.30	0.55	0.55	0.04	0.28	0.28
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	311	312	293	83	157		530	1929	863	69	1421	442
v/s Ratio Prot	0.02	0.02		c0.00	0.00		c0.27	c0.25		0.01	0.14	
v/s Ratio Perm			c0.03						0.01			0.02
v/c Ratio	0.13	0.12	0.18	0.10	0.05		0.89	0.45	0.02	0.32	0.50	0.06
Uniform Delay, d1	25.2	25.2	25.5	33.5	33.4		24.8	10.2	7.8	34.6	22.4	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.5	0.8	0.2		16.6	0.3	0.0	1.0	0.4	0.1
Delay (s)	25.5	25.5	26.0	34.3	33.6		41.4	10.5	7.8	35.6	22.8	19.7
Level of Service	C	C	C	C	C		D	B	A	D	C	B
Approach Delay (s)		25.9			33.9			21.0			22.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	10.7
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	2	132	45	3	22	152	1431	91	74	902	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1688	1583		1779	1583	1770	5040		1770	5012	
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1688	1583		1779	1583	1770	5040		1770	5012	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	139	2	139	47	3	23	160	1506	96	78	949	101
RTOR Reduction (vph)	0	0	123	0	0	21	0	4	0	0	8	0
Lane Group Flow (vph)	71	70	16	0	50	2	160	1598	0	78	1042	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)	13.0	13.0	13.0		10.8	10.8	14.5	71.0		7.5	64.0	
Effective Green, g (s)	14.0	14.0	14.0		11.8	11.8	15.5	74.0		8.5	67.0	
Actuated g/C Ratio	0.12	0.12	0.12		0.10	0.10	0.13	0.62		0.07	0.56	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3		2.0	5.3	
Lane Grp Cap (vph)	196	197	185		175	156	229	3108		125	2798	
v/s Ratio Prot	c0.04	0.04			c0.03		c0.09	c0.32		c0.04	0.21	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.36	0.36	0.09		0.29	0.01	0.70	0.51		0.62	0.37	
Uniform Delay, d1	48.9	48.8	47.3		50.2	48.8	50.0	12.9		54.2	14.8	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4	0.1		0.3	0.0	7.3	0.6		6.8	0.2	
Delay (s)	49.3	49.2	47.4		50.5	48.9	57.3	13.5		61.0	15.0	
Level of Service	D	D	D		D	D	E	B		E	B	
Approach Delay (s)		48.3			50.0			17.5			18.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

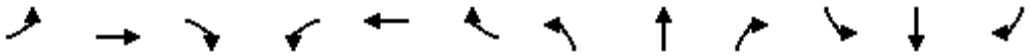


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	347	66	304	51	131	90	123	1661	18	28	1035	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.91	0.91			0.95		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.90			0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3027			3332		3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.73			0.77		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	2237			2600		3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	365	69	320	54	138	95	129	1748	19	29	1089	183
RTOR Reduction (vph)	0	113	0	0	55	0	0	0	8	0	0	99
Lane Group Flow (vph)	263	378	0	0	232	0	129	1748	11	29	1089	84
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	23.2	44.5			17.3		8.0	54.4	54.4	5.4	51.8	51.8
Effective Green, g (s)	24.2	47.2			20.0		9.0	57.4	57.4	6.4	54.8	54.8
Actuated g/C Ratio	0.20	0.39			0.17		0.08	0.48	0.48	0.05	0.46	0.46
Clearance Time (s)	4.0	5.7			5.7		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3			4.3		2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	325	1050			433		257	2432	757	94	2322	723
v/s Ratio Prot	c0.16	0.08					c0.04	c0.34		0.02	0.21	
v/s Ratio Perm		0.06			c0.09				0.01			0.05
v/c Ratio	0.81	0.36			1.44dr		0.50	0.72	0.01	0.31	0.47	0.12
Uniform Delay, d1	45.7	25.7			45.8		53.3	24.9	16.4	54.7	22.5	18.7
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.1	0.3			1.8		0.6	1.9	0.0	0.7	0.3	0.1
Delay (s)	58.7	26.1			47.6		53.9	26.7	16.5	55.4	22.8	18.8
Level of Service	E	C			D		D	C	B	E	C	B
Approach Delay (s)		37.5			47.6			28.5			23.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

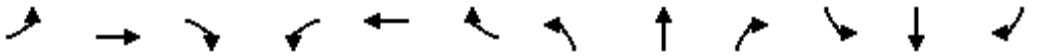
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	206	14	27	343	7	27	3	28	6	2	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.93			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	3505		1770	3529			1701			1705	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (perm)	1770	3505		1770	3529			1701			1705	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	217	15	28	361	7	28	3	29	6	2	8
RTOR Reduction (vph)	0	4	0	0	1	0	0	25	0	0	8	0
Lane Group Flow (vph)	1	228	0	28	367	0	0	35	0	0	8	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.9	22.5		0.8	22.4			6.3			1.0	
Effective Green, g (s)	1.9	25.2		1.8	25.1			7.3			2.0	
Actuated g/C Ratio	0.04	0.52		0.04	0.52			0.15			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	70	1829		66	1834			257			71	
v/s Ratio Prot	0.00	0.07		c0.02	c0.10			c0.02			c0.00	
v/s Ratio Perm												
v/c Ratio	0.01	0.12		0.42	0.20			0.14			0.12	
Uniform Delay, d1	22.3	5.9		22.7	6.2			17.8			22.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.1		1.6	0.1			0.1			0.3	
Delay (s)	22.3	6.0		24.3	6.3			17.9			22.6	
Level of Service	C	A		C	A			B			C	
Approach Delay (s)		6.0			7.6			17.9			22.6	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	229	6	20	489	18	9	2	9	43	0	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1711			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1711			1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	97	241	6	21	515	19	9	2	9	45	0	174
RTOR Reduction (vph)	0	0	3	0	0	12	0	9	0	0	0	135
Lane Group Flow (vph)	97	241	3	21	515	7	0	11	0	0	45	39
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	6.6	25.7	25.7	0.9	20.0	20.0		1.1			11.0	11.0
Effective Green, g (s)	7.6	28.7	28.7	1.9	23.0	23.0		2.1			13.0	13.0
Actuated g/C Ratio	0.13	0.49	0.49	0.03	0.39	0.39		0.04			0.22	0.22
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	230	1739	778	58	1394	623		62			394	352
v/s Ratio Prot	c0.05	0.07		0.01	c0.15			c0.01			c0.03	
v/s Ratio Perm			0.00			0.00						0.02
v/c Ratio	0.42	0.14	0.00	0.36	0.37	0.01		0.18			0.11	0.11
Uniform Delay, d1	23.4	8.1	7.6	27.7	12.6	10.8		27.3			18.1	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.5	0.0	0.0	1.4	0.2	0.0		0.5			0.0	0.1
Delay (s)	23.8	8.1	7.6	29.1	12.7	10.8		27.8			18.2	18.1
Level of Service	C	A	A	C	B	B		C			B	B
Approach Delay (s)		12.6			13.3			27.8			18.1	
Approach LOS		B			B			C			B	

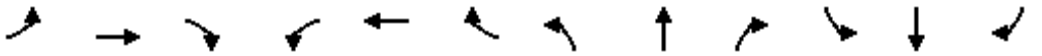
Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	12.7
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	186	12	52	315	6	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	196	13	55	332	6	58
RTOR Reduction (vph)	0	11	0	0	0	44
Lane Group Flow (vph)	196	2	55	332	6	15
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	5.5	5.5	2.3	12.8	7.6	7.6
Effective Green, g (s)	5.5	5.5	2.3	12.8	7.6	7.6
Actuated g/C Ratio	0.18	0.18	0.08	0.42	0.25	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	640	286	134	1490	443	396
v/s Ratio Prot	0.06		0.03	c0.09	0.00	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.31	0.01	0.41	0.22	0.01	0.04
Uniform Delay, d1	10.8	10.2	13.4	5.6	8.6	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	2.0	0.1	0.0	0.0
Delay (s)	11.1	10.2	15.4	5.7	8.6	8.7
Level of Service	B	B	B	A	A	A
Approach Delay (s)	11.0			7.1	8.7	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	30.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

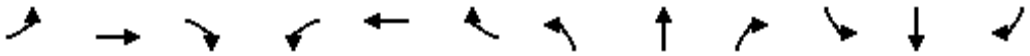
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	325	11	274	1001	428	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	342	12	288	1054	451	272
RTOR Reduction (vph)	0	10	0	225	0	0
Lane Group Flow (vph)	342	2	288	829	451	272
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	15.2	15.2	59.0	59.0	30.0	94.0
Effective Green, g (s)	15.2	15.2	59.0	59.0	30.0	94.0
Actuated g/C Ratio	0.13	0.13	0.49	0.49	0.25	0.79
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	438	202	1752	784	445	2791
v/s Ratio Prot	c0.10		0.08		c0.25	0.08
v/s Ratio Perm		0.00		c0.52		
v/c Ratio	0.78	0.01	0.16	1.06	1.01	0.10
Uniform Delay, d1	50.4	45.4	16.5	30.1	44.6	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.8	0.0	0.0	48.5	46.1	0.0
Delay (s)	59.2	45.4	16.6	78.6	90.7	2.9
Level of Service	E	D	B	E	F	A
Approach Delay (s)	58.7		65.3			57.7
Approach LOS	E		E			E

Intersection Summary			
HCM Average Control Delay	62.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	119.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



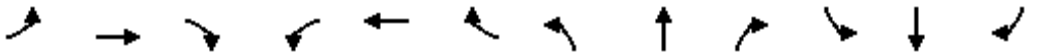
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	429	0	443	0	1628	217	0	828	768
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Lane Util. Factor				0.94		1.00		0.91	1.00		0.95	0.88
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				4990		1583		5085	1583		3539	2787
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				4990		1583		5085	1583		3539	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	452	0	466	0	1714	228	0	872	808
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	97	0	0	345
Lane Group Flow (vph)	0	0	0	452	0	448	0	1714	131	0	872	463
Turn Type				custom		custom			Perm			Perm
Protected Phases								2			6	
Permitted Phases				8		8			2			6
Actuated Green, G (s)				27.7		27.7		51.5	51.5		51.5	51.5
Effective Green, g (s)				27.7		27.7		51.5	51.5		51.5	51.5
Actuated g/C Ratio				0.31		0.31		0.57	0.57		0.57	0.57
Clearance Time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Vehicle Extension (s)				2.0		2.0		3.8	3.8		3.9	3.9
Lane Grp Cap (vph)				1539		488		2916	908		2030	1598
v/s Ratio Prot								c0.34			0.25	
v/s Ratio Perm				0.09		c0.28			0.08			0.17
v/c Ratio				0.29		0.92		0.59	0.14		0.43	0.29
Uniform Delay, d1				23.6		30.0		12.3	8.9		10.8	9.8
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.0		21.8		0.3	0.1		0.2	0.1
Delay (s)				23.7		51.7		12.7	9.0		11.0	9.9
Level of Service				C		D		B	A		B	A
Approach Delay (s)		0.0			37.9			12.2			10.5	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	10.6
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



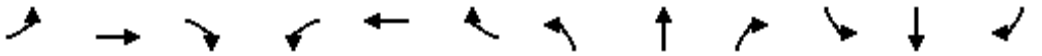
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	353	113	17	0	156	0	1668	61	59	944	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3	4.0		4.0		4.9	4.9	4.0	4.9	
Lane Util. Factor		0.95	1.00	0.97		1.00		0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	3433		1583		3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	3433		1583		3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	372	119	18	0	164	0	1756	64	62	994	0
RTOR Reduction (vph)	0	0	101	0	0	0	0	0	7	0	0	0
Lane Group Flow (vph)	0	372	18	18	0	164	0	1756	57	62	994	0
Turn Type			Perm	Prot		custom			Perm	Prot		
Protected Phases		4		3		3 1		2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		17.7	17.7	12.3		19.9		59.0	59.0	7.6	70.6	
Effective Green, g (s)		17.7	17.7	12.3		19.9		59.0	59.0	7.6	70.6	
Actuated g/C Ratio		0.15	0.15	0.11		0.17		0.51	0.51	0.07	0.61	
Clearance Time (s)		5.3	5.3	4.0				4.9	4.9	4.0	4.9	
Vehicle Extension (s)		2.8	2.8	2.0				3.6	3.6	2.0	3.6	
Lane Grp Cap (vph)		546	244	368		274		1819	814	117	2176	
v/s Ratio Prot		c0.11		0.01		c0.10		c0.50		0.04	0.28	
v/s Ratio Perm			0.01						0.04			
v/c Ratio		0.68	0.08	0.05		0.60		0.97	0.07	0.53	0.46	
Uniform Delay, d1		45.9	41.5	46.0		43.8		26.9	14.1	51.9	11.8	
Progression Factor		1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		3.4	0.1	0.0		2.3		13.8	0.0	2.0	0.2	
Delay (s)		49.3	41.7	46.0		46.1		40.7	14.1	53.9	12.0	
Level of Service		D	D	D		D		D	B	D	B	
Approach Delay (s)		47.4			46.1			39.8			14.5	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	114.8	Sum of lost time (s)	18.2
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



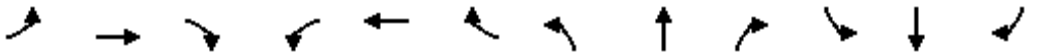
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	605	3	2	178	188	8	64	2	711	14	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1853	1583		1776	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1853	1583		1776	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	637	3	2	187	198	8	67	2	748	15	109
RTOR Reduction (vph)	0	0	2	0	0	157	0	0	2	0	0	21
Lane Group Flow (vph)	65	637	1	2	187	41	0	75	0	0	763	88
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	3.0	15.8	15.8	0.7	13.5	13.5		7.4	7.4		37.2	37.2
Effective Green, g (s)	4.0	18.8	18.8	1.7	16.5	16.5		8.4	8.4		38.2	38.2
Actuated g/C Ratio	0.05	0.24	0.24	0.02	0.21	0.21		0.11	0.11		0.48	0.48
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	90	841	376	38	738	330		197	168		858	764
v/s Ratio Prot	c0.04	c0.18		0.00	0.05			c0.04			c0.43	
v/s Ratio Perm			0.00			0.03			0.00			0.06
v/c Ratio	0.72	0.76	0.00	0.05	0.25	0.13		0.38	0.00		0.89	0.12
Uniform Delay, d1	37.0	28.0	23.0	37.9	26.2	25.4		32.9	31.6		18.5	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	21.3	4.0	0.0	0.2	0.2	0.2		0.4	0.0		10.8	0.0
Delay (s)	58.3	32.1	23.0	38.1	26.4	25.6		33.4	31.6		29.4	11.2
Level of Service	E	C	C	D	C	C		C	C		C	B
Approach Delay (s)		34.4			26.0			33.3			27.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	79.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



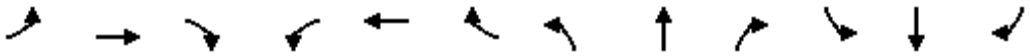
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	1307	13	74	355	53	12	92	93	114	49	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	1376	14	78	374	56	13	97	98	120	52	19
RTOR Reduction (vph)	0	0	8	0	0	31	0	0	83	0	0	15
Lane Group Flow (vph)	46	1376	6	78	374	25	13	97	15	120	52	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.7	34.6	34.6	6.9	36.8	36.8	1.3	12.9	12.9	7.6	19.2	19.2
Effective Green, g (s)	4.7	34.6	34.6	6.9	36.8	36.8	1.3	12.9	12.9	7.6	19.2	19.2
Actuated g/C Ratio	0.06	0.42	0.42	0.08	0.45	0.45	0.02	0.16	0.16	0.09	0.23	0.23
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	101	1493	668	149	1588	710	28	293	249	164	436	371
v/s Ratio Prot	0.03	c0.39		c0.04	0.11		0.01	c0.05		c0.07	0.03	
v/s Ratio Perm			0.00			0.02			0.01			0.00
v/c Ratio	0.46	0.92	0.01	0.52	0.24	0.04	0.46	0.33	0.06	0.73	0.12	0.01
Uniform Delay, d1	37.4	22.4	13.8	36.0	13.9	12.7	40.0	30.7	29.4	36.2	24.7	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	9.7	0.0	3.3	0.1	0.0	11.7	0.7	0.1	15.4	0.1	0.0
Delay (s)	40.6	32.1	13.8	39.3	14.0	12.7	51.7	31.4	29.5	51.7	24.9	24.1
Level of Service	D	C	B	D	B	B	D	C	C	D	C	C
Approach Delay (s)		32.2			17.7			31.8			41.6	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



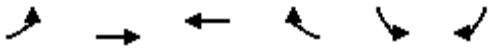
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	636	854	73	107	160	111	46	524	149	126	364	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	669	899	77	113	168	117	48	552	157	133	383	175
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	669	899	77	113	168	117	48	552	157	133	383	175
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	20.1	26.5	74.3	5.9	12.3	74.3	4.3	14.1	74.3	8.1	18.2	74.3
Effective Green, g (s)	21.1	29.5	74.3	6.9	15.3	74.3	5.3	16.8	74.3	9.1	20.9	74.3
Actuated g/C Ratio	0.28	0.40	1.00	0.09	0.21	1.00	0.07	0.23	1.00	0.12	0.28	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	975	1405	1583	319	729	1583	245	800	1583	420	995	1583
v/s Ratio Prot	c0.19	c0.25		0.03	0.05		0.01	c0.16		0.04	c0.11	
v/s Ratio Perm			0.05			0.07			0.10			0.11
v/c Ratio	0.69	0.64	0.05	0.35	0.23	0.07	0.20	0.69	0.10	0.32	0.38	0.11
Uniform Delay, d1	23.7	18.1	0.0	31.6	24.6	0.0	32.5	26.4	0.0	29.8	21.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	1.2	0.1	0.2	0.3	0.1	0.1	2.8	0.1	0.2	0.4	0.1
Delay (s)	25.3	19.3	0.1	31.9	24.9	0.1	32.6	29.1	0.1	29.9	21.9	0.1
Level of Service	C	B	A	C	C	A	C	C	A	C	C	A
Approach Delay (s)		20.8			19.6			23.3			18.0	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



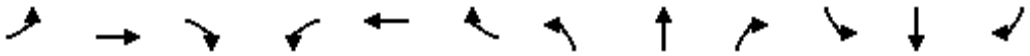
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	882	197	95	251	19	27	144	234	182	116	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.91		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3442		1770	3502		1770	1690		1770	1745	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3442		1770	3502		1770	1690		1770	1745	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	928	207	100	264	20	28	152	246	192	122	89
RTOR Reduction (vph)	0	22	0	0	7	0	0	72	0	0	29	0
Lane Group Flow (vph)	121	1113	0	100	277	0	28	326	0	192	182	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.9	25.7		4.6	23.4		2.9	22.1		9.1	28.3	
Effective Green, g (s)	7.9	28.4		5.6	26.1		3.9	24.4		10.1	30.6	
Actuated g/C Ratio	0.10	0.35		0.07	0.33		0.05	0.30		0.13	0.38	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	175	1220		124	1141		86	515		223	667	
v/s Ratio Prot	0.07	c0.32		c0.06	0.08		0.02	c0.19		c0.11	0.10	
v/s Ratio Perm												
v/c Ratio	0.69	0.91		0.81	0.24		0.33	0.63		0.86	0.27	
Uniform Delay, d1	34.9	24.7		36.7	19.8		36.8	24.0		34.3	17.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	10.6		29.0	0.1		0.8	2.8		26.3	0.3	
Delay (s)	44.0	35.2		65.7	19.9		37.6	26.8		60.6	17.4	
Level of Service	D	D		E	B		D	C		E	B	
Approach Delay (s)		36.1			31.8			27.5			38.0	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.1	Sum of lost time (s)	8.6
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



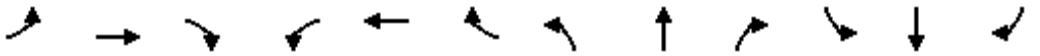
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	8	1308	368	17	80	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		2.0	2.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3516		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3516		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	1377	387	18	84	14
RTOR Reduction (vph)	0	0	3	0	0	12
Lane Group Flow (vph)	8	1377	402	0	84	2
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	1.3	36.9	31.6		6.8	6.8
Effective Green, g (s)	2.3	39.6	34.3		7.8	7.8
Actuated g/C Ratio	0.04	0.76	0.65		0.15	0.15
Clearance Time (s)	4.0	5.7	5.7		3.0	3.0
Vehicle Extension (s)	2.0	3.8	3.8		2.0	2.0
Lane Grp Cap (vph)	78	2675	2302		263	236
v/s Ratio Prot	0.00	c0.39	0.11		c0.05	
v/s Ratio Perm						0.00
v/c Ratio	0.10	0.51	0.17		0.32	0.01
Uniform Delay, d1	24.1	2.6	3.5		19.9	19.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.2	0.0		0.3	0.0
Delay (s)	24.3	2.8	3.6		20.2	19.0
Level of Service	C	A	A		C	B
Approach Delay (s)		2.9	3.6		20.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	5.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



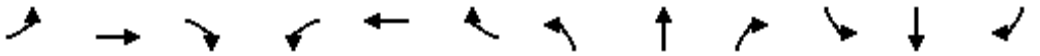
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1353	53	128	327	0	115	0	115	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7	4.7	2.0	2.7			2.0	2.0			
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00			
Frt		1.00	0.85	1.00	1.00			1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3539	1583	1770	3539			1770	1583			
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (perm)		3539	1583	1770	3539			1770	1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1424	56	135	344	0	121	0	121	0	0	0
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	95	0	0	0
Lane Group Flow (vph)	0	1424	30	135	344	0	0	121	26	0	0	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2						3			
Actuated Green, G (s)		31.9	31.9	5.0	40.9			11.2	11.2			
Effective Green, g (s)		34.9	32.9	7.0	43.9			13.2	13.2			
Actuated g/C Ratio		0.56	0.53	0.11	0.71			0.21	0.21			
Clearance Time (s)		5.7	5.7	4.0	5.7			4.0	4.0			
Vehicle Extension (s)		3.8	3.8	2.0	3.7			2.0	2.0			
Lane Grp Cap (vph)		1999	843	200	2514			378	338			
v/s Ratio Prot		c0.40		c0.08	0.10			c0.07				
v/s Ratio Perm			0.02						0.02			
v/c Ratio		0.71	0.04	0.68	0.14			0.32	0.08			
Uniform Delay, d1		9.8	6.9	26.3	2.9			20.5	19.4			
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00			
Incremental Delay, d2		1.3	0.0	6.9	0.0			0.2	0.0			
Delay (s)		11.1	6.9	33.2	2.9			20.7	19.5			
Level of Service		B	A	C	A			C	B			
Approach Delay (s)		10.9			11.4			20.1			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	6.7
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



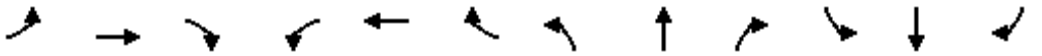
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1254	13	65	395	3	36	9	120	44	15	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3534		1770	3535			1790	1583		1796	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78	1.00		0.79	1.00
Satd. Flow (perm)	1770	3534		1770	3535			1454	1583		1476	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	1320	14	68	416	3	38	9	126	46	16	17
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	102	0	0	14
Lane Group Flow (vph)	11	1333	0	68	419	0	0	47	24	0	62	3
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	0.9	28.3		2.8	30.2			9.3	9.3		9.3	9.3
Effective Green, g (s)	1.9	31.0		3.8	32.9			10.3	10.3		10.3	10.3
Actuated g/C Ratio	0.04	0.57		0.07	0.61			0.19	0.19		0.19	0.19
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	62	2025		124	2150			277	301		281	301
v/s Ratio Prot	0.01	c0.38		c0.04	0.12							
v/s Ratio Perm								0.03	0.02		c0.04	0.00
v/c Ratio	0.18	0.66		0.55	0.19			0.17	0.08		0.22	0.01
Uniform Delay, d1	25.3	7.9		24.3	4.7			18.3	18.0		18.5	17.8
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.5	0.8		2.6	0.1			0.1	0.0		0.1	0.0
Delay (s)	25.8	8.8		27.0	4.8			18.4	18.0		18.7	17.8
Level of Service	C	A		C	A			B	B		B	B
Approach Delay (s)		8.9			7.9			18.1			18.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



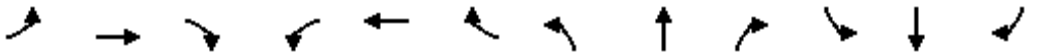
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	784	8	15	297	120	9	0	20	71	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.96			0.91		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	3534		1770	3387			1662		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (perm)	1770	3534		1770	3387			1662		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	204	825	8	16	313	126	9	0	21	75	0	36
RTOR Reduction (vph)	0	0	0	0	41	0	0	20	0	0	32	0
Lane Group Flow (vph)	204	833	0	16	398	0	0	10	0	75	4	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	11.6	31.5		0.9	20.8			2.3		6.0	6.0	
Effective Green, g (s)	12.6	34.2		1.9	23.5			3.3		7.0	7.0	
Actuated g/C Ratio	0.22	0.59		0.03	0.40			0.06		0.12	0.12	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	382	2070		58	1363			94		212	190	
v/s Ratio Prot	c0.12	c0.24		0.01	0.12			c0.01		c0.04	0.00	
v/s Ratio Perm												
v/c Ratio	0.53	0.40		0.28	0.29			0.11		0.35	0.02	
Uniform Delay, d1	20.3	6.6		27.6	11.8			26.2		23.6	22.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.2		0.9	0.2			0.4		0.4	0.0	
Delay (s)	21.0	6.7		28.5	12.0			26.5		24.0	22.7	
Level of Service	C	A		C	B			C		C	C	
Approach Delay (s)		9.5			12.6			26.5			23.6	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



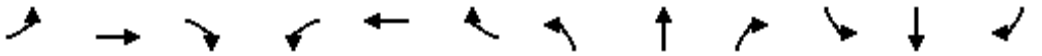
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1	9	112	3	24	22	373	117	5	715	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	1	9	118	3	25	23	393	123	5	753	17
RTOR Reduction (vph)	0	0	8	0	0	20	0	0	71	0	0	10
Lane Group Flow (vph)	6	1	1	118	3	5	23	393	52	5	753	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	3.2	3.2	7.6	10.4	10.4	0.5	22.6	22.6	0.4	22.5	22.5
Effective Green, g (s)	0.4	3.2	3.2	7.6	10.4	10.4	0.5	22.6	22.6	0.4	22.5	22.5
Actuated g/C Ratio	0.01	0.06	0.06	0.14	0.19	0.19	0.01	0.42	0.42	0.01	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	111	94	250	360	306	16	2136	665	13	2127	662
v/s Ratio Prot	0.00	0.00		c0.07	0.00		c0.01	0.08		0.00	c0.15	
v/s Ratio Perm			0.00			c0.00			0.03			0.00
v/c Ratio	0.46	0.01	0.01	0.47	0.01	0.02	1.44	0.18	0.08	0.38	0.35	0.01
Uniform Delay, d1	26.6	23.8	23.8	21.3	17.5	17.6	26.6	9.8	9.4	26.6	10.7	9.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.8	0.0	0.0	1.4	0.0	0.0	385.6	0.0	0.1	17.9	0.1	0.0
Delay (s)	50.4	23.8	23.8	22.7	17.5	17.6	412.3	9.8	9.4	44.5	10.8	9.2
Level of Service	D	C	C	C	B	B	F	A	A	D	B	A
Approach Delay (s)		33.8			21.7			26.9			11.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



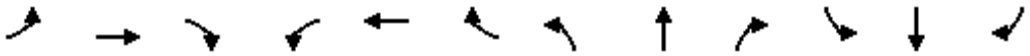
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	39	71	271	8	22	22	480	144	15	815	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	41	75	285	8	23	23	505	152	16	858	6
RTOR Reduction (vph)	0	0	64	0	0	14	0	0	101	0	0	4
Lane Group Flow (vph)	12	41	11	285	8	9	23	505	51	16	858	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	8.4	8.4	15.7	23.6	23.6	1.2	21.2	21.2	0.5	20.5	20.5
Effective Green, g (s)	1.5	10.4	9.4	16.7	25.6	24.6	2.2	23.2	22.2	1.5	22.5	21.5
Actuated g/C Ratio	0.02	0.16	0.14	0.25	0.39	0.37	0.03	0.35	0.34	0.02	0.34	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	40	294	226	449	725	592	59	1793	534	40	1739	517
v/s Ratio Prot	0.01	c0.02		c0.16	0.00		c0.01	0.10		0.01	c0.17	
v/s Ratio Perm			0.01			0.01			0.03			0.00
v/c Ratio	0.30	0.14	0.05	0.63	0.01	0.01	0.39	0.28	0.10	0.40	0.49	0.00
Uniform Delay, d1	31.6	23.8	24.3	21.8	12.3	13.0	31.1	15.3	14.9	31.7	17.1	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.2	0.1	2.9	0.0	0.0	4.2	0.1	0.1	6.4	0.2	0.0
Delay (s)	35.8	24.1	24.4	24.8	12.3	13.0	35.4	15.4	15.0	38.2	17.4	14.9
Level of Service	D	C	C	C	B	B	D	B	B	D	B	B
Approach Delay (s)		25.4			23.6			16.0			17.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	9	104	115	4	16	28	583	38	50	1157	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	9	109	121	4	17	29	614	40	53	1218	16
RTOR Reduction (vph)	0	0	95	0	0	14	0	0	24	0	0	9
Lane Group Flow (vph)	55	9	14	121	4	3	29	614	16	53	1218	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.2	7.9	7.9	6.7	12.4	12.4	1.2	24.8	24.8	3.7	27.3	27.3
Effective Green, g (s)	2.2	7.9	7.9	6.7	12.4	12.4	1.2	24.8	24.8	3.7	27.3	27.3
Actuated g/C Ratio	0.03	0.12	0.12	0.11	0.20	0.20	0.02	0.39	0.39	0.06	0.43	0.43
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	61	232	197	187	364	310	34	1989	619	103	2190	682
v/s Ratio Prot	0.03	0.00		c0.07	c0.00		0.02	0.12		c0.03	c0.24	
v/s Ratio Perm			c0.01			0.00			0.01			0.00
v/c Ratio	0.90	0.04	0.07	0.65	0.01	0.01	0.85	0.31	0.03	0.51	0.56	0.01
Uniform Delay, d1	30.5	24.4	24.5	27.2	20.6	20.6	31.0	13.4	11.9	29.0	13.5	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	80.6	0.1	0.1	7.5	0.0	0.0	95.5	0.1	0.0	4.3	0.3	0.0
Delay (s)	111.1	24.5	24.7	34.7	20.6	20.6	126.5	13.5	11.9	33.3	13.8	10.3
Level of Service	F	C	C	C	C	C	F	B	B	C	B	B
Approach Delay (s)		52.1			32.6			18.2			14.6	
Approach LOS		D			C			B			B	

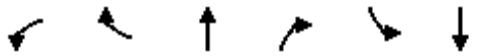
Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	49	107	18	71	6	21	45	13	8	114	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1549	1770	1839		1770	1790		1770	1728	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1549	1770	1839		1770	1790		1770	1728	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	52	113	19	75	6	22	47	14	8	120	89
RTOR Reduction (vph)	0	0	90	0	5	0	0	10	0	0	41	0
Lane Group Flow (vph)	65	52	23	19	76	0	22	51	0	8	168	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	1.8	7.3	7.3	0.4	5.9		0.4	9.2		0.4	9.2	
Effective Green, g (s)	1.8	7.3	7.3	0.4	5.9		0.4	9.2		0.4	9.2	
Actuated g/C Ratio	0.05	0.21	0.21	0.01	0.17		0.01	0.26		0.01	0.26	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	90	385	320	20	307		20	467		20	450	
v/s Ratio Prot	c0.04	0.03		0.01	c0.04		c0.01	0.03		0.00	c0.10	
v/s Ratio Perm			0.02									
v/c Ratio	0.72	0.14	0.07	0.95	0.25		1.10	0.11		0.40	0.37	
Uniform Delay, d1	16.5	11.4	11.3	17.4	12.8		17.4	9.9		17.3	10.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	24.7	0.2	0.1	175.6	0.4		234.8	0.1		12.6	0.5	
Delay (s)	41.2	11.6	11.4	193.0	13.2		252.2	10.0		29.9	11.2	
Level of Service	D	B	B	F	B		F	B		C	B	
Approach Delay (s)		19.8			47.4			74.2			11.9	
Approach LOS		B			D			E			B	

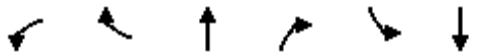
Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	35.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



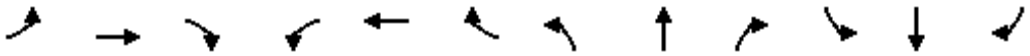
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	27	468	741	21	86	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	28	493	780	22	91	325
RTOR Reduction (vph)	0	179	0	11	0	0
Lane Group Flow (vph)	28	314	780	11	91	325
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	16.1	16.1	32.9	32.9	4.1	42.0
Effective Green, g (s)	16.1	16.1	32.9	32.9	4.1	42.0
Actuated g/C Ratio	0.24	0.24	0.48	0.48	0.06	0.62
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	418	374	900	765	107	1149
v/s Ratio Prot	0.02		c0.42		c0.05	0.17
v/s Ratio Perm		c0.20		0.01		
v/c Ratio	0.07	0.84	0.87	0.01	0.85	0.28
Uniform Delay, d1	20.2	24.8	15.6	9.2	31.7	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	15.5	8.8	0.0	44.0	0.1
Delay (s)	20.2	40.3	24.4	9.2	75.7	6.2
Level of Service	C	D	C	A	E	A
Approach Delay (s)	39.2		24.0			21.4
Approach LOS	D		C			C

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	2	731	32	14	452
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.32	1.00
Satd. Flow (perm)	1770	1583	1863	1583	604	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	2	769	34	15	476
RTOR Reduction (vph)	0	2	0	13	0	0
Lane Group Flow (vph)	5	0	769	21	15	476
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	0.6	0.6	16.2	16.2	16.2	16.2
Effective Green, g (s)	0.6	0.6	16.2	16.2	16.2	16.2
Actuated g/C Ratio	0.02	0.02	0.63	0.63	0.63	0.63
Clearance Time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	41	37	1170	994	379	1170
v/s Ratio Prot	c0.00		c0.41			0.26
v/s Ratio Perm		0.00		0.01	0.02	
v/c Ratio	0.12	0.00	0.66	0.02	0.04	0.41
Uniform Delay, d1	12.3	12.3	3.0	1.8	1.8	2.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0	1.3	0.0	0.0	0.2
Delay (s)	13.7	12.3	4.4	1.8	1.9	2.6
Level of Service	B	B	A	A	A	A
Approach Delay (s)	13.3		4.3			2.6
Approach LOS	B		A			A

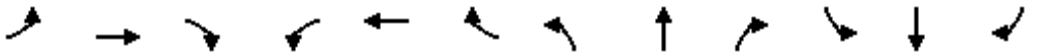
Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	25.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	526	12	40	213	10	12	9	7	6	5	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1549	1770	3539	1549	1770	1731		1770	1729	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1549	1770	3539	1549	1770	1731		1770	1729	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	554	13	42	224	11	13	9	7	6	5	4
RTOR Reduction (vph)	0	0	7	0	0	5	0	7	0	0	4	0
Lane Group Flow (vph)	9	554	6	42	224	6	13	9	0	6	5	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	0.5	18.0	18.0	2.2	19.7	19.7	0.5	2.2		0.5	2.2	
Effective Green, g (s)	0.5	18.0	18.0	2.2	19.7	19.7	0.5	2.2		0.5	2.2	
Actuated g/C Ratio	0.01	0.46	0.46	0.06	0.51	0.51	0.01	0.06		0.01	0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	23	1638	717	100	1792	784	23	98		23	98	
v/s Ratio Prot	0.01	c0.16		c0.02	0.06		c0.01	c0.01		0.00	0.00	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.39	0.34	0.01	0.42	0.12	0.01	0.57	0.10		0.26	0.05	
Uniform Delay, d1	19.0	6.7	5.6	17.7	5.1	4.8	19.1	17.4		19.0	17.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.7	0.1	0.0	2.8	0.0	0.0	28.1	0.4		6.0	0.2	
Delay (s)	29.7	6.8	5.6	20.6	5.1	4.8	47.2	17.8		25.0	17.6	
Level of Service	C	A	A	C	A	A	D	B		C	B	
Approach Delay (s)		7.1			7.4			31.0			20.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	38.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

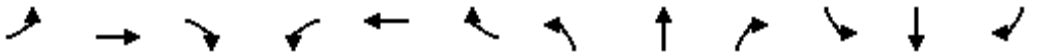


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	5	18	0	6	33	5	720	0	7	539	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00		1.00	1.00	0.97	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583		1863	1583	3433	5085		3433	5085	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583		1863	1583	3433	5085		3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	5	19	0	6	35	5	758	0	7	567	8
RTOR Reduction (vph)	0	0	16	0	0	33	0	0	0	0	0	4
Lane Group Flow (vph)	5	5	3	0	6	2	5	758	0	7	567	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.7	8.8	8.8		3.1	3.1	0.7	24.3		0.7	24.3	24.3
Effective Green, g (s)	0.7	8.8	8.8		3.1	3.1	0.7	24.3		0.7	24.3	24.3
Actuated g/C Ratio	0.01	0.18	0.18		0.06	0.06	0.01	0.50		0.01	0.50	0.50
Clearance Time (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	49	336	285		118	101	49	2532		49	2532	788
v/s Ratio Prot	c0.00	0.00			c0.00		0.00	c0.15		c0.00	0.11	
v/s Ratio Perm			0.00			0.00						0.00
v/c Ratio	0.10	0.01	0.01		0.05	0.02	0.10	0.30		0.14	0.22	0.01
Uniform Delay, d1	23.7	16.4	16.4		21.5	21.4	23.7	7.2		23.8	6.9	6.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	0.0		0.2	0.1	0.9	0.1		1.3	0.0	0.0
Delay (s)	24.7	16.5	16.4		21.6	21.5	24.7	7.3		25.1	7.0	6.2
Level of Service	C	B	B		C	C	C	A		C	A	A
Approach Delay (s)		17.9			21.5			7.4			7.2	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	0	9	0	0	0	16	11	0	0	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Lane Util. Factor	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770		1583				1770	1863			1863	1583
Flt Permitted	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	1770		1583				1770	1863			1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	0	9	0	0	0	17	12	0	0	11	5
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	12	0	3	0	0	0	17	12	0	0	11	0
Turn Type	Prot		Perm	Prot		Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5		7.1				1.6	1.6			1.2	1.2
Effective Green, g (s)	0.5		7.1				1.6	1.6			1.2	1.2
Actuated g/C Ratio	0.02		0.29				0.06	0.06			0.05	0.05
Clearance Time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	35		451				113	119			89	76
v/s Ratio Prot	c0.01						c0.01	0.01			c0.01	
v/s Ratio Perm			c0.00									0.00
v/c Ratio	0.34		0.01				0.15	0.10			0.12	0.00
Uniform Delay, d1	12.0		6.4				11.0	11.0			11.3	11.3
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	5.8		0.0				0.6	0.4			0.6	0.0
Delay (s)	17.8		6.4				11.6	11.3			12.0	11.3
Level of Service	B		A				B	B			B	B
Approach Delay (s)		12.9			0.0			11.5			11.8	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	24.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	19.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

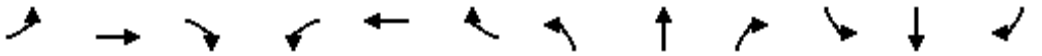


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	10	20	133	10	24	30	691	39	7	697	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	11	21	140	11	25	32	727	41	7	734	32
RTOR Reduction (vph)	0	0	20	0	0	21	0	0	24	0	0	20
Lane Group Flow (vph)	32	11	1	140	11	4	32	727	17	7	734	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.2	3.0	3.0	7.5	8.3	8.3	2.2	22.3	22.3	0.8	20.9	20.9
Effective Green, g (s)	2.2	3.0	3.0	7.5	8.3	8.3	2.2	22.3	22.3	0.8	20.9	20.9
Actuated g/C Ratio	0.04	0.06	0.06	0.14	0.15	0.15	0.04	0.42	0.42	0.01	0.39	0.39
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	73	104	89	248	288	245	73	2116	659	26	1983	617
v/s Ratio Prot	0.02	c0.01		c0.08	0.01		c0.02	0.14		0.00	c0.14	
v/s Ratio Perm			0.00			0.00			0.01			0.01
v/c Ratio	0.44	0.11	0.01	0.56	0.04	0.02	0.44	0.34	0.03	0.27	0.37	0.02
Uniform Delay, d1	25.1	24.0	23.9	21.5	19.3	19.2	25.1	10.7	9.2	26.1	11.7	10.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.4	0.1	2.9	0.1	0.0	4.2	0.1	0.0	5.5	0.1	0.0
Delay (s)	29.3	24.5	24.0	24.5	19.3	19.2	29.3	10.8	9.3	31.6	11.8	10.1
Level of Service	C	C	C	C	B	B	C	B	A	C	B	B
Approach Delay (s)		26.7			23.4			11.4			11.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

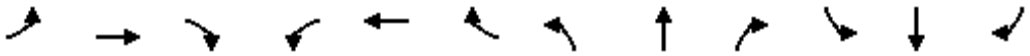
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	0	20	0	0	0	15	6	0	0	9	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Lane Util. Factor	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770		1583				1770	1863			1863	1583
Flt Permitted	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	1770		1583				1770	1863			1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	0	21	0	0	0	16	6	0	0	9	22
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	20
Lane Group Flow (vph)	17	0	6	0	0	0	16	6	0	0	9	2
Turn Type	Prot		Perm	Prot		Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.6		7.3				0.6	7.3			1.7	1.7
Effective Green, g (s)	0.6		7.3				0.6	7.3			1.7	1.7
Actuated g/C Ratio	0.02		0.30				0.02	0.30			0.07	0.07
Clearance Time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	43		469				43	552			128	109
v/s Ratio Prot	c0.01						c0.01	0.00			c0.00	
v/s Ratio Perm			c0.00									0.00
v/c Ratio	0.40		0.01				0.37	0.01			0.07	0.01
Uniform Delay, d1	11.8		6.1				11.8	6.1			10.7	10.7
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	5.9		0.0				5.4	0.0			0.2	0.1
Delay (s)	17.7		6.1				17.2	6.1			10.9	10.7
Level of Service	B		A				B	A			B	B
Approach Delay (s)		11.3			0.0			14.2			10.8	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	24.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	19.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	293	78	1	0	84	856	22	0	857	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00		0.97	0.91	1.00		0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863		3433	5085	1583		5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863		3433	5085	1583		5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	1	308	82	1	0	88	901	23	0	902	3
RTOR Reduction (vph)	0	0	255	0	0	0	0	0	12	0	0	2
Lane Group Flow (vph)	1	1	53	82	1	0	88	901	11	0	902	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	9.8	9.8	3.8	12.8		5.4	28.3	28.3		17.9	17.9
Effective Green, g (s)	0.8	9.8	9.8	3.8	12.8		5.4	28.3	28.3		17.9	17.9
Actuated g/C Ratio	0.01	0.17	0.17	0.07	0.22		0.09	0.50	0.50		0.31	0.31
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	48	321	273	229	419		326	2529	787		1600	498
v/s Ratio Prot	0.00	0.00		c0.02	c0.00		0.03	c0.18			c0.18	
v/s Ratio Perm			c0.03						0.01			0.00
v/c Ratio	0.02	0.00	0.19	0.36	0.00		0.27	0.36	0.01		0.56	0.00
Uniform Delay, d1	27.7	19.5	20.2	25.4	17.1		23.9	8.7	7.2		16.2	13.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.0	0.3	1.0	0.0		0.4	0.1	0.0		0.5	0.0
Delay (s)	27.8	19.5	20.5	26.3	17.1		24.4	8.8	7.2		16.7	13.4
Level of Service	C	B	C	C	B		C	A	A		B	B
Approach Delay (s)		20.5			26.2			10.1			16.7	
Approach LOS		C			C			B			B	

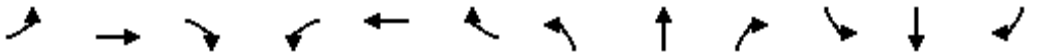
Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	25.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	214	0	11	804	9	0	0	3	2	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.86		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1770	3533			1590		1770	1562	
Flt Permitted	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539		1770	3533			1590		1770	1562	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	225	0	12	846	9	0	0	3	2	0	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	11	0
Lane Group Flow (vph)	21	225	0	12	855	0	0	0	0	2	0	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Perm			Split		
Protected Phases	7	4		3	8			2		6	6	
Permitted Phases							2					
Actuated Green, G (s)	0.3	22.3		0.3	22.3			1.7		1.7	1.7	
Effective Green, g (s)	0.3	22.3		0.3	22.3			1.7		1.7	1.7	
Actuated g/C Ratio	0.01	0.53		0.01	0.53			0.04		0.04	0.04	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	13	1879		13	1876			64		72	63	
v/s Ratio Prot	c0.01	0.06		0.01	c0.24			c0.00		c0.00	0.00	
v/s Ratio Perm												
v/c Ratio	1.62	0.12		0.92	0.46			0.00		0.03	0.01	
Uniform Delay, d1	20.9	4.9		20.8	6.1			19.3		19.4	19.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	484.6	0.0		207.3	0.2			0.0		0.2	0.0	
Delay (s)	505.5	5.0		228.1	6.3			19.3		19.5	19.4	
Level of Service	F	A		F	A			B		B	B	
Approach Delay (s)		47.7			9.3			19.3			19.4	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		

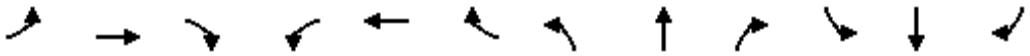
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	5	45	53	7	61	65	76	16	16	78	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1549	1770	1863	1549	1770	1863	1549	1770	1863	1549
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1549	1770	1863	1549	1770	1863	1549	1770	1863	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	5	47	56	7	64	68	80	17	17	82	99
RTOR Reduction (vph)	0	0	39	0	0	54	0	0	12	0	0	72
Lane Group Flow (vph)	72	5	8	56	7	10	68	80	5	17	82	27
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.4	6.2	6.2	1.4	5.2	5.2	1.9	10.9	10.9	0.4	9.4	9.4
Effective Green, g (s)	2.4	6.2	6.2	1.4	5.2	5.2	1.9	10.9	10.9	0.4	9.4	9.4
Actuated g/C Ratio	0.07	0.18	0.18	0.04	0.15	0.15	0.05	0.31	0.31	0.01	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	331	275	71	278	231	96	582	484	20	502	417
v/s Ratio Prot	c0.04	0.00		0.03	0.00		c0.04	0.04		0.01	c0.04	
v/s Ratio Perm			0.01			c0.01			0.00			0.02
v/c Ratio	0.59	0.02	0.03	0.79	0.03	0.04	0.71	0.14	0.01	0.85	0.16	0.06
Uniform Delay, d1	15.8	11.8	11.9	16.6	12.7	12.7	16.2	8.6	8.3	17.2	9.7	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	0.0	0.0	42.6	0.0	0.1	21.2	0.1	0.0	129.8	0.2	0.1
Delay (s)	23.2	11.9	11.9	59.2	12.7	12.8	37.4	8.7	8.3	147.0	9.9	9.5
Level of Service	C	B	B	E	B	B	D	A	A	F	A	A
Approach Delay (s)		18.5			33.3			20.5			21.5	
Approach LOS		B			C			C			C	

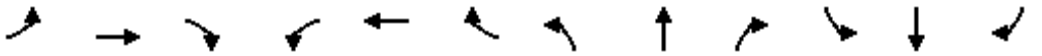
Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	34.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



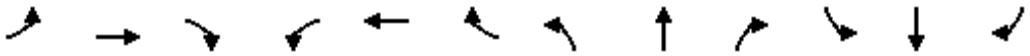
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	67	29	144	24	16	53	714	273	27	221	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0		3.0	4.3	4.3	3.0	3.2	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1856	1583		1771		1770	1863	1583	1770	3530	
Flt Permitted		1.00	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1856	1583		1771		1770	1863	1583	1770	3530	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	71	31	152	25	17	56	752	287	28	233	4
RTOR Reduction (vph)	0	0	28	0	4	0	0	0	137	0	1	0
Lane Group Flow (vph)	0	77	3	0	190	0	56	752	150	28	236	0
Turn Type	Split		Perm	Split			Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			
Actuated Green, G (s)		6.4	6.4		15.3		3.4	37.0	37.0	2.0	36.7	
Effective Green, g (s)		7.4	7.4		16.3		4.4	38.0	38.0	3.0	37.7	
Actuated g/C Ratio		0.09	0.09		0.21		0.06	0.49	0.49	0.04	0.48	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.3	5.3	4.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		176	150		370		100	908	771	68	1706	
v/s Ratio Prot		c0.04			c0.11		c0.03	c0.40		0.02	0.07	
v/s Ratio Perm			0.00						0.09			
v/c Ratio		0.44	0.02		0.51		0.56	0.83	0.19	0.41	0.14	
Uniform Delay, d1		33.3	32.0		27.3		35.9	17.2	11.3	36.6	11.2	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6	0.0		0.5		4.2	6.0	0.0	1.5	0.0	
Delay (s)		34.0	32.0		27.8		40.1	23.2	11.4	38.1	11.2	
Level of Service		C	C		C		D	C	B	D	B	
Approach Delay (s)		33.4			27.8			21.0			14.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	78.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



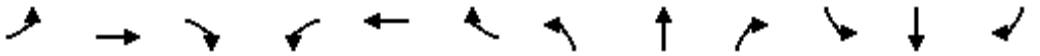
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	299	304	1	33	70	3	0	357	313	0	210	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	0.95	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1681	1761		1770	3519			1863	1583		1863	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1681	1761		1770	3519			1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	315	320	1	35	74	3	0	376	329	0	221	261
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	240	0	0	0
Lane Group Flow (vph)	283	353	0	35	74	0	0	376	89	0	221	261
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	17.1	17.1		5.9	5.9			17.8	17.8		9.8	69.2
Effective Green, g (s)	18.1	18.1		6.9	6.9			18.8	18.8		10.8	69.2
Actuated g/C Ratio	0.26	0.26		0.10	0.10			0.27	0.27		0.16	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			5.0	5.0		5.0	
Lane Grp Cap (vph)	440	461		176	351			506	430		291	1583
v/s Ratio Prot	0.17	c0.20		0.02	0.02			c0.20			c0.12	
v/s Ratio Perm									0.06			c0.16
v/c Ratio	0.64	0.77		0.20	0.21			0.74	0.21		0.76	0.16
Uniform Delay, d1	22.7	23.6		28.6	28.6			23.0	19.5		28.0	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.8	7.1		0.4	0.2			7.0	0.5		12.8	0.2
Delay (s)	25.5	30.7		29.0	28.9			30.0	20.0		40.7	0.2
Level of Service	C	C		C	C			C	B		D	A
Approach Delay (s)		28.4			28.9			25.3			18.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	10.7
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



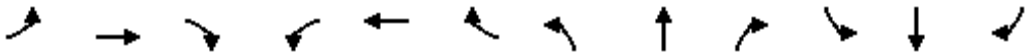
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	461	173	39	304	33	162	12	39	3	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00		0.99			0.96	1.00		0.99	
Satd. Flow (prot)		1860	1583		1831			1780	1583		1785	
Flt Permitted		0.99	1.00		0.93			0.72	1.00		0.96	
Satd. Flow (perm)		1843	1583		1716			1345	1583		1732	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	485	182	41	320	35	171	13	41	3	16	7
RTOR Reduction (vph)	0	0	71	0	5	0	0	0	30	0	5	0
Lane Group Flow (vph)	0	498	111	0	391	0	0	184	11	0	21	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		21.2	21.2		21.2			8.9	8.9		8.9	
Effective Green, g (s)		22.2	22.2		22.2			9.9	9.9		9.9	
Actuated g/C Ratio		0.58	0.58		0.58			0.26	0.26		0.26	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1068	918		995			348	409		448	
v/s Ratio Prot												
v/s Ratio Perm		c0.27	0.07		0.23			c0.14	0.01		0.01	
v/c Ratio		0.47	0.12		0.39			0.53	0.03		0.05	
Uniform Delay, d1		4.6	3.6		4.4			12.2	10.6		10.7	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.3	0.0		0.2			0.7	0.0		0.0	
Delay (s)		4.9	3.7		4.6			12.9	10.6		10.7	
Level of Service		A	A		A			B	B		B	
Approach Delay (s)		4.6			4.6			12.5			10.7	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	6.2
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



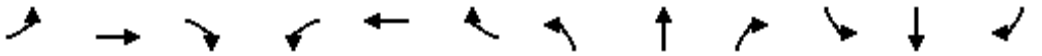
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	549	11	35	435	118	14	40	46	39	27	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.2		3.2	3.2		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.97		1.00	0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	1857		1770	1803		1770	1714			1809	1583
Flt Permitted	0.38	1.00		0.38	1.00		0.71	1.00			0.79	1.00
Satd. Flow (perm)	717	1857		707	1803		1326	1714			1477	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	578	12	37	458	124	15	42	48	41	28	28
RTOR Reduction (vph)	0	1	0	0	14	0	0	39	0	0	0	23
Lane Group Flow (vph)	100	589	0	37	568	0	15	51	0	0	69	5
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		4
Actuated Green, G (s)	23.3	23.3		23.3	23.3		6.4	6.4			6.4	6.4
Effective Green, g (s)	24.3	24.3		24.3	24.3		7.4	7.4			7.4	7.4
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.20	0.20			0.20	0.20
Clearance Time (s)	4.2	4.2		4.2	4.2		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	460	1191		453	1156		259	335			288	309
v/s Ratio Prot		c0.32			0.31			0.03				
v/s Ratio Perm	0.14			0.05			0.01				c0.05	0.00
v/c Ratio	0.22	0.49		0.08	0.49		0.06	0.15			0.24	0.02
Uniform Delay, d1	2.8	3.6		2.6	3.6		12.4	12.7			12.9	12.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.2	0.2		0.1	0.2		0.0	0.1			0.2	0.0
Delay (s)	3.0	3.8		2.6	3.8		12.4	12.7			13.0	12.3
Level of Service	A	A		A	A		B	B			B	B
Approach Delay (s)		3.7			3.7			12.7			12.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	37.9	Sum of lost time (s)	6.2
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



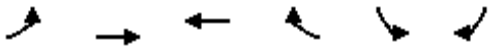
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	363	28	181	343	6	44	57	485	13	22	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0	3.0		3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.99	
Satd. Flow (prot)	1770	1843		1770	1858			1823	1583		1738	
Flt Permitted	0.95	1.00		0.95	1.00			0.86	1.00		0.93	
Satd. Flow (perm)	1770	1843		1770	1858			1607	1583		1640	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	382	29	191	361	6	46	60	511	14	23	27
RTOR Reduction (vph)	0	5	0	0	1	0	0	0	348	0	21	0
Lane Group Flow (vph)	79	406	0	191	366	0	0	106	163	0	43	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		
Actuated Green, G (s)	2.5	15.0		5.7	18.2			8.7	8.7		8.7	
Effective Green, g (s)	3.5	16.0		6.7	19.2			9.7	9.7		9.7	
Actuated g/C Ratio	0.08	0.38		0.16	0.46			0.23	0.23		0.23	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0	4.0		4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)	149	709		285	858			375	369		382	
v/s Ratio Prot	0.04	c0.22		c0.11	0.20							
v/s Ratio Perm								0.07	c0.10		0.03	
v/c Ratio	0.53	0.57		0.67	0.43			0.28	0.44		0.11	
Uniform Delay, d1	18.3	10.1		16.4	7.5			13.1	13.6		12.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	1.8	1.0		4.8	0.3			0.2	0.3		0.0	
Delay (s)	20.1	11.1		21.2	7.8			13.2	13.9		12.6	
Level of Service	C	B		C	A			B	B		B	
Approach Delay (s)		12.5			12.4			13.8			12.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	9.2
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	85	446	90	64	4	247	689	19	30	890	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.6	3.9	3.0	1.6	2.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	89	469	95	67	4	260	725	20	32	937	29
RTOR Reduction (vph)	0	0	383	0	0	3	0	0	12	0	0	18
Lane Group Flow (vph)	95	89	86	95	67	1	260	725	8	32	937	11
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	15.1	15.1	15.1	14.2	14.2	14.2	11.3	35.5	35.5	6.6	32.8	32.8
Effective Green, g (s)	16.1	16.1	16.1	15.2	15.2	15.2	12.3	37.8	36.5	7.6	35.1	33.8
Actuated g/C Ratio	0.18	0.18	0.18	0.17	0.17	0.17	0.14	0.43	0.41	0.09	0.40	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.9	4.9	4.0	3.9	3.9
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	323	340	289	305	321	272	478	1515	654	152	1407	606
v/s Ratio Prot	0.05	0.05		c0.05	0.04		c0.08	0.20		0.02	c0.26	
v/s Ratio Perm			c0.05			0.00			0.01			0.01
v/c Ratio	0.29	0.26	0.30	0.31	0.21	0.00	0.54	0.48	0.01	0.21	0.67	0.02
Uniform Delay, d1	31.2	31.0	31.2	32.0	31.4	30.3	35.4	18.2	15.3	37.6	21.8	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2	0.2	0.2	0.1	0.0	0.7	0.3	0.0	0.3	1.3	0.0
Delay (s)	31.4	31.1	31.4	32.2	31.5	30.3	36.1	18.5	15.3	37.8	23.1	17.0
Level of Service	C	C	C	C	C	C	D	B	B	D	C	B
Approach Delay (s)		31.4			31.9			23.0			23.4	
Approach LOS		C			C			C			C	

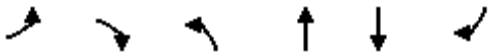
Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	9.6
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	2	352	435	317	190	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	3539	1863	1547	3437	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1770	3539	1863	1547	3437	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	371	458	334	200	2
RTOR Reduction (vph)	0	0	0	187	2	0
Lane Group Flow (vph)	2	371	458	147	200	0
Confl. Peds. (#/hr)				4		4
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	0.4	19.8	15.4	15.4	7.1	
Effective Green, g (s)	0.4	19.8	15.4	15.4	7.1	
Actuated g/C Ratio	0.01	0.57	0.44	0.44	0.20	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	20	2008	822	683	699	
v/s Ratio Prot	0.00	c0.10	c0.25		c0.06	
v/s Ratio Perm				0.10		
v/c Ratio	0.10	0.18	0.56	0.22	0.29	
Uniform Delay, d1	17.1	3.6	7.2	6.0	11.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	0.0	0.8	0.2	0.2	
Delay (s)	19.3	3.7	8.0	6.2	12.0	
Level of Service	B	A	A	A	B	
Approach Delay (s)		3.8	7.3		12.0	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	34.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

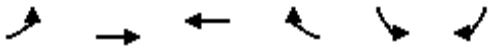
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	468	658	308	23	1	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.96	1.00	1.00
Satd. Flow (prot)	1770	1546	1681	1697	1863	1561
Flt Permitted	0.95	1.00	0.95	0.61	1.00	1.00
Satd. Flow (perm)	1770	1546	1681	1079	1863	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	493	693	324	24	1	22
RTOR Reduction (vph)	0	402	0	0	0	20
Lane Group Flow (vph)	493	291	175	173	1	2
Confl. Peds. (#/hr)		2				2
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	22.7	22.7	13.5	23.3	5.8	5.8
Effective Green, g (s)	22.7	22.7	13.5	23.3	5.8	5.8
Actuated g/C Ratio	0.42	0.42	0.25	0.43	0.11	0.11
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	744	650	420	620	200	168
v/s Ratio Prot			c0.10	0.07	0.00	
v/s Ratio Perm	c0.28	0.19		c0.05		0.00
v/c Ratio	0.66	0.45	0.42	0.28	0.01	0.01
Uniform Delay, d1	12.6	11.2	17.0	9.9	21.5	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.5	0.7	0.2	0.0	0.0
Delay (s)	14.8	11.7	17.6	10.2	21.5	21.6
Level of Service	B	B	B	B	C	C
Approach Delay (s)	13.0			13.9	21.6	
Approach LOS	B			B	C	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

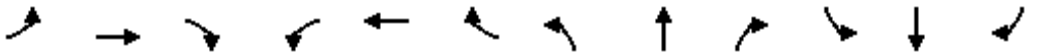
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	74	437	701	98	37	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1548	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	460	738	103	39	29
RTOR Reduction (vph)	0	0	0	73	0	17
Lane Group Flow (vph)	78	460	738	30	39	12
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.1	20.0	13.9	13.9	20.5	20.5
Effective Green, g (s)	2.1	20.0	13.9	13.9	20.5	20.5
Actuated g/C Ratio	0.04	0.41	0.29	0.29	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	77	2097	1457	444	748	660
v/s Ratio Prot	c0.04	0.09	c0.15		c0.02	
v/s Ratio Perm				0.02		0.01
v/c Ratio	1.01	0.22	0.51	0.07	0.05	0.02
Uniform Delay, d1	23.2	9.2	14.4	12.6	8.3	8.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	106.2	0.1	0.3	0.1	0.1	0.1
Delay (s)	129.4	9.3	14.7	12.6	8.4	8.2
Level of Service	F	A	B	B	A	A
Approach Delay (s)		26.7	14.5		8.3	
Approach LOS		C	B		A	

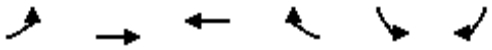
Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	227	17	477	581	700	63	1015	312	316	693	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	247	239	18	502	612	737	66	1068	328	333	729	266
RTOR Reduction (vph)	0	0	16	0	0	7	0	0	195	0	0	128
Lane Group Flow (vph)	247	239	2	502	612	730	66	1068	133	333	729	138
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.3	13.0	13.0	18.9	20.6	48.7	3.8	29.7	29.7	28.1	54.0	54.0
Effective Green, g (s)	12.3	15.0	14.0	19.9	22.6	50.7	4.8	31.7	30.7	29.1	56.0	55.0
Actuated g/C Ratio	0.12	0.14	0.13	0.19	0.21	0.48	0.05	0.30	0.29	0.28	0.53	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	399	722	210	646	1087	804	156	1525	460	945	2694	824
v/s Ratio Prot	0.07	0.05		c0.15	0.12	c0.25	0.02	c0.21		0.10	0.14	
v/s Ratio Perm			0.00			0.21			0.08			0.09
v/c Ratio	0.62	0.33	0.01	0.78	0.56	0.91	0.42	0.70	0.29	0.35	0.27	0.17
Uniform Delay, d1	44.5	40.8	39.8	40.8	37.1	25.4	49.1	32.8	29.0	30.7	13.6	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.3	0.0	5.9	0.7	13.9	1.8	1.5	0.3	0.2	0.1	0.1
Delay (s)	47.3	41.1	39.9	46.6	37.8	39.3	51.0	34.3	29.4	31.0	13.7	13.4
Level of Service	D	D	D	D	D	D	D	C	C	C	B	B
Approach Delay (s)		44.1			40.8			33.9			18.0	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	105.7	Sum of lost time (s)	5.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	23	854	1605	29	143	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1548	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	899	1689	31	151	75
RTOR Reduction (vph)	0	0	0	19	0	47
Lane Group Flow (vph)	24	899	1689	12	151	28
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	24.8	20.1	20.1	20.1	20.1
Effective Green, g (s)	0.7	24.8	20.1	20.1	20.1	20.1
Actuated g/C Ratio	0.01	0.47	0.38	0.38	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	23	2384	1932	588	673	594
v/s Ratio Prot	0.01	c0.18	c0.33		c0.09	
v/s Ratio Perm				0.01		0.02
v/c Ratio	1.04	0.38	0.87	0.02	0.22	0.05
Uniform Delay, d1	26.1	9.1	15.2	10.2	11.1	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	201.7	0.1	4.7	0.0	0.8	0.2
Delay (s)	227.8	9.2	20.0	10.3	11.9	10.5
Level of Service	F	A	B	B	B	B
Approach Delay (s)		14.9	19.8		11.4	
Approach LOS		B	B		B	

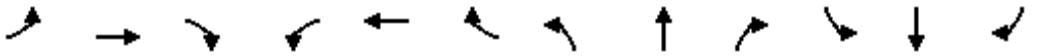
Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	52.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	987	10	1	1647	13	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1547	1770	5085	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1547	1770	5085	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1039	11	1	1734	14	1
RTOR Reduction (vph)	0	6	0	0	0	1
Lane Group Flow (vph)	1039	5	1	1734	14	0
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	22.9	22.9	0.7	27.6	20.0	20.0
Effective Green, g (s)	22.9	22.9	0.7	27.6	20.0	20.0
Actuated g/C Ratio	0.41	0.41	0.01	0.50	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2094	637	22	2524	637	562
v/s Ratio Prot	0.20		0.00	c0.34	c0.01	
v/s Ratio Perm		0.00				0.00
v/c Ratio	0.50	0.01	0.05	0.69	0.02	0.00
Uniform Delay, d1	12.1	9.6	27.1	10.7	11.5	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.9	0.8	0.1	0.0
Delay (s)	12.3	9.6	28.0	11.5	11.6	11.4
Level of Service	B	A	C	B	B	B
Approach Delay (s)	12.2			11.5	11.5	
Approach LOS	B			B	B	

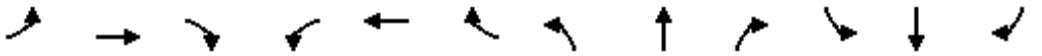
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	814	50	106	1479	255	107	111	67	165	46	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	857	53	112	1557	268	113	117	71	174	48	74
RTOR Reduction (vph)	0	0	30	0	0	133	0	0	59	0	0	61
Lane Group Flow (vph)	147	857	23	112	1557	135	113	117	12	174	48	13
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.1	34.1	34.1	8.3	33.3	33.3	7.1	13.1	13.1	7.1	13.1	13.1
Effective Green, g (s)	10.1	36.1	35.1	9.3	35.3	34.3	8.1	15.1	14.1	8.1	15.1	14.1
Actuated g/C Ratio	0.12	0.44	0.42	0.11	0.43	0.42	0.10	0.18	0.17	0.10	0.18	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	216	2222	673	199	2173	657	174	341	270	174	341	270
v/s Ratio Prot	c0.08	0.17		0.06	c0.31		0.06	c0.06		c0.10	0.03	
v/s Ratio Perm			0.01			0.09			0.01			0.01
v/c Ratio	0.68	0.39	0.03	0.56	0.72	0.21	0.65	0.34	0.04	1.00	0.14	0.05
Uniform Delay, d1	34.7	15.7	13.9	34.7	19.5	15.4	35.9	29.4	28.6	37.2	28.3	28.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.5	0.1	0.0	3.6	1.1	0.2	8.1	0.6	0.1	68.2	0.2	0.1
Delay (s)	43.2	15.9	13.9	38.3	20.7	15.6	44.0	30.0	28.7	105.5	28.5	28.7
Level of Service	D	B	B	D	C	B	D	C	C	F	C	C
Approach Delay (s)		19.6			21.0			35.0			73.8	
Approach LOS		B			C			C			E	

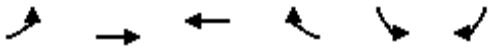
Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	82.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	153	786	81	555	1606	338	56	1000	348	174	809	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1552	3433	5085	1553	3433	3539	1557	3433	3539	1557
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1552	3433	5085	1553	3433	3539	1557	3433	3539	1557
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	161	827	85	584	1691	356	59	1053	366	183	852	122
RTOR Reduction (vph)	0	0	68	0	0	181	0	0	228	0	0	81
Lane Group Flow (vph)	161	827	17	584	1691	175	59	1053	138	183	852	41
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.9	19.9	19.9	24.0	34.0	34.0	7.6	33.8	33.8	9.0	35.2	35.2
Effective Green, g (s)	10.9	22.9	20.9	25.0	37.0	35.0	8.6	37.2	34.8	10.0	38.6	36.2
Actuated g/C Ratio	0.10	0.21	0.20	0.23	0.35	0.33	0.08	0.35	0.33	0.09	0.36	0.34
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	351	1091	304	804	1763	509	277	1234	508	322	1280	528
v/s Ratio Prot	0.05	0.16		c0.17	c0.33		0.02	c0.30		0.05	c0.24	
v/s Ratio Perm			0.01			0.11			0.09			0.03
v/c Ratio	0.46	0.76	0.05	0.73	0.96	0.34	0.21	0.85	0.27	0.57	0.67	0.08
Uniform Delay, d1	45.1	39.3	34.9	37.7	34.1	27.2	45.9	32.2	26.6	46.3	28.6	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	3.3	0.1	2.8	13.1	0.6	0.1	6.4	0.6	1.4	1.7	0.1
Delay (s)	45.5	42.6	35.0	40.5	47.2	27.7	46.0	38.7	27.2	47.7	30.3	24.1
Level of Service	D	D	C	D	D	C	D	D	C	D	C	C
Approach Delay (s)		42.4			43.1			36.1			32.4	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	39.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	106.7	Sum of lost time (s)	8.2
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

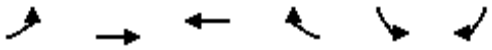


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	5	1299	2463	274	147	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1367	2593	288	155	4
RTOR Reduction (vph)	0	0	0	84	0	3
Lane Group Flow (vph)	5	1367	2593	204	155	1
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.0	48.6	43.6	43.6	13.8	13.8
Effective Green, g (s)	2.0	51.6	46.6	46.6	14.8	14.8
Actuated g/C Ratio	0.03	0.71	0.64	0.64	0.20	0.20
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	49	3624	3273	1019	362	324
v/s Ratio Prot	0.00	c0.27	c0.51		c0.09	
v/s Ratio Perm				0.13		0.00
v/c Ratio	0.10	0.38	0.79	0.20	0.43	0.00
Uniform Delay, d1	34.3	4.1	9.4	5.3	25.1	22.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	1.5	0.1	0.3	0.0
Delay (s)	34.7	4.2	10.9	5.4	25.4	22.9
Level of Service	C	A	B	A	C	C
Approach Delay (s)		4.3	10.3		25.3	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1444	37	211	2737	16	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1520	39	222	2881	17	128
RTOR Reduction (vph)	0	20	0	0	0	106
Lane Group Flow (vph)	1520	19	222	2881	17	22
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	30.2	30.2	11.5	45.7	10.8	10.8
Effective Green, g (s)	33.2	33.2	12.5	48.7	11.8	11.8
Actuated g/C Ratio	0.49	0.49	0.19	0.72	0.18	0.18
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	2505	780	328	3674	310	277
v/s Ratio Prot	0.30		0.13	c0.57	0.01	
v/s Ratio Perm		0.01				c0.01
v/c Ratio	0.61	0.02	0.68	0.78	0.05	0.08
Uniform Delay, d1	12.4	8.8	25.6	6.0	23.2	23.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	4.3	1.2	0.0	0.0
Delay (s)	12.9	8.8	29.9	7.2	23.2	23.3
Level of Service	B	A	C	A	C	C
Approach Delay (s)	12.8			8.8	23.3	
Approach LOS	B			A	C	

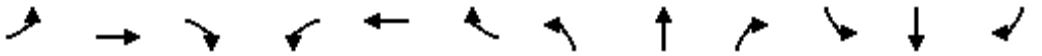
Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	6.9
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	28	1521	2937	420	280	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1534	1770	1557
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1534	1770	1557
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	1601	3092	442	295	12
RTOR Reduction (vph)	0	0	0	90	0	9
Lane Group Flow (vph)	29	1601	3092	352	295	3
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.3	66.7	59.4	59.4	20.4	20.4
Effective Green, g (s)	4.3	69.7	62.4	62.4	21.4	21.4
Actuated g/C Ratio	0.04	0.71	0.64	0.64	0.22	0.22
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	78	3617	3238	977	387	340
v/s Ratio Prot	0.02	c0.31	c0.61		c0.17	
v/s Ratio Perm				0.23		0.00
v/c Ratio	0.37	0.44	0.95	0.36	0.76	0.01
Uniform Delay, d1	45.5	6.0	16.5	8.4	35.9	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	7.9	0.3	7.8	0.0
Delay (s)	46.6	6.1	24.4	8.7	43.7	30.0
Level of Service	D	A	C	A	D	C
Approach Delay (s)		6.8	22.4		43.2	
Approach LOS		A	C		D	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

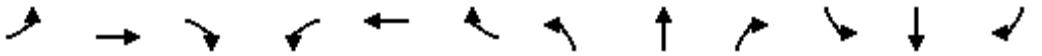


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	283	448	5	439	28	763	253	8	57	138	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	298	472	5	462	29	803	266	8	60	145	0
RTOR Reduction (vph)	0	0	364	0	0	20	0	0	4	0	0	0
Lane Group Flow (vph)	0	298	108	5	462	9	803	266	4	60	145	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		15.1	15.1	0.5	20.6	20.6	22.2	30.9	30.9	4.0	12.7	
Effective Green, g (s)		17.1	16.1	1.5	22.6	21.6	23.2	32.9	31.9	5.0	14.7	
Actuated g/C Ratio		0.24	0.23	0.02	0.32	0.31	0.33	0.47	0.45	0.07	0.21	
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		858	362	38	1134	485	1130	1652	716	126	738	
v/s Ratio Prot		0.08		0.00	c0.13		c0.23	0.08		0.03	c0.04	
v/s Ratio Perm			0.07			0.01			0.00			
v/c Ratio		0.35	0.30	0.13	0.41	0.02	0.71	0.16	0.01	0.48	0.20	
Uniform Delay, d1		22.1	22.5	33.9	18.7	17.1	20.7	10.8	10.6	31.5	23.0	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.5	1.6	0.2	0.0	2.1	0.0	0.0	2.8	0.1	
Delay (s)		22.3	23.0	35.4	19.0	17.1	22.8	10.9	10.6	34.3	23.2	
Level of Service		C	C	D	B	B	C	B	B	C	C	
Approach Delay (s)		22.7			19.0			19.8			26.4	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

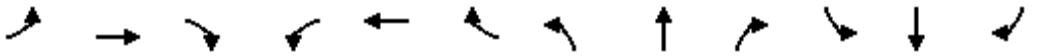
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	390	6	56	468	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3539	1583	1770	3539	1770	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (perm)	3539	1583	1770	3539	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	411	6	59	493	5	0
RTOR Reduction (vph)	0	4	0	0	0	0
Lane Group Flow (vph)	411	2	59	493	5	0
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	10.7	10.7	2.0	17.7	7.9	
Effective Green, g (s)	10.7	10.7	2.0	17.7	7.9	
Actuated g/C Ratio	0.30	0.30	0.06	0.50	0.22	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1064	476	99	1760	393	
v/s Ratio Prot	c0.12		0.03	c0.14		
v/s Ratio Perm		0.00			c0.00	
v/c Ratio	0.39	0.00	0.60	0.28	0.01	
Uniform Delay, d1	9.9	8.7	16.4	5.2	10.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.0	9.3	0.1	0.0	
Delay (s)	10.1	8.7	25.7	5.3	10.8	
Level of Service	B	A	C	A	B	
Approach Delay (s)	10.1			7.5	10.8	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	35.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	29.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



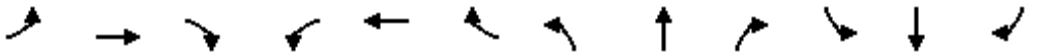
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	328	10	81	520	475	9	979	50	299	948	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	143	345	11	85	547	500	9	1031	53	315	998	133
RTOR Reduction (vph)	0	0	7	0	0	88	0	0	32	0	0	74
Lane Group Flow (vph)	143	345	4	85	547	412	9	1031	21	315	998	59
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.1	29.8	29.8	3.1	28.8	28.8	0.7	34.0	34.0	7.1	40.4	40.4
Effective Green, g (s)	5.1	31.8	30.8	4.1	30.8	29.8	1.7	36.0	35.0	8.1	42.4	41.4
Actuated g/C Ratio	0.05	0.34	0.33	0.04	0.33	0.32	0.02	0.38	0.37	0.09	0.45	0.44
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	186	1720	519	150	1160	502	62	1355	589	296	2294	697
v/s Ratio Prot	c0.04	0.07		0.02	0.15		0.00	c0.29		c0.09	0.20	
v/s Ratio Perm			0.00			c0.26			0.01			0.04
v/c Ratio	0.77	0.20	0.01	0.57	0.47	0.82	0.15	0.76	0.04	1.06	0.44	0.08
Uniform Delay, d1	43.9	22.1	21.3	44.1	25.1	29.6	45.4	25.3	18.8	43.0	17.6	15.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.2	0.1	0.0	4.8	0.3	10.3	1.1	2.6	0.0	70.3	0.1	0.1
Delay (s)	61.1	22.1	21.3	48.9	25.4	40.0	46.5	27.8	18.8	113.3	17.8	15.3
Level of Service	E	C	C	D	C	D	D	C	B	F	B	B
Approach Delay (s)		33.3			33.6			27.5			38.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	94.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



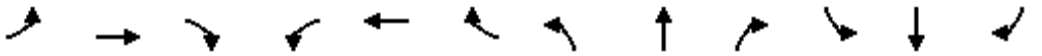
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	668	8	93	1064	37	4	0	34	16	3	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1583		1770	1636	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1583		1770	1636	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	703	8	98	1120	39	4	0	36	17	3	13
RTOR Reduction (vph)	0	0	5	0	0	19	0	30	0	0	12	0
Lane Group Flow (vph)	4	703	3	98	1120	20	4	6	0	17	4	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	0.5	21.0	21.0	5.9	26.4	26.4	5.9	9.0		0.5	3.6	
Effective Green, g (s)	0.5	21.0	21.0	5.9	26.4	26.4	5.9	9.0		0.5	3.6	
Actuated g/C Ratio	0.01	0.40	0.40	0.11	0.50	0.50	0.11	0.17		0.01	0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	17	1418	634	199	1783	798	199	272		17	112	
v/s Ratio Prot	0.00	0.20		c0.06	c0.32		c0.00	c0.00		c0.01	0.00	
v/s Ratio Perm			0.00			0.01						
v/c Ratio	0.24	0.50	0.01	0.49	0.63	0.02	0.02	0.02		1.00	0.03	
Uniform Delay, d1	25.8	11.7	9.4	21.8	9.4	6.5	20.7	18.0		25.9	22.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.0	0.3	0.0	1.9	0.7	0.0	0.2	0.0		218.3	0.1	
Delay (s)	32.8	12.0	9.4	23.8	10.1	6.5	20.9	18.1		244.2	22.9	
Level of Service	C	B	A	C	B	A	C	B		F	C	
Approach Delay (s)		12.1			11.1			18.4			136.9	
Approach LOS		B			B			B			F	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	650	14	244	1284	79	13	155	189	11	241	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	3.0	4.7	4.7	4.3	4.3	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	684	15	257	1352	83	14	163	199	12	254	121
RTOR Reduction (vph)	0	0	10	0	0	35	0	0	154	0	0	94
Lane Group Flow (vph)	55	684	5	257	1352	48	14	163	45	12	254	27
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	21.3	21.3	14.4	31.7	31.7	1.6	15.1	15.1	1.6	15.1	15.1
Effective Green, g (s)	5.0	22.3	22.3	15.4	32.7	32.7	2.6	16.1	16.1	2.6	16.1	16.1
Actuated g/C Ratio	0.07	0.31	0.31	0.22	0.46	0.46	0.04	0.23	0.23	0.04	0.23	0.23
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	5.3	5.3	5.3	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	124	1105	494	382	1621	725	64	420	357	64	420	357
v/s Ratio Prot	0.03	0.19		c0.15	c0.38		c0.01	0.09		0.01	c0.14	
v/s Ratio Perm			0.00			0.03			0.03			0.02
v/c Ratio	0.44	0.62	0.01	0.67	0.83	0.07	0.22	0.39	0.13	0.19	0.60	0.08
Uniform Delay, d1	31.9	20.9	16.9	25.7	17.0	10.8	33.4	23.5	22.0	33.4	24.8	21.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.3	0.0	3.6	4.2	0.1	0.6	0.2	0.1	0.5	1.7	0.0
Delay (s)	32.8	22.3	16.9	29.3	21.2	10.9	34.0	23.7	22.1	33.9	26.5	21.8
Level of Service	C	C	B	C	C	B	C	C	C	C	C	C
Approach Delay (s)		22.9			21.9			23.2			25.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	10.3
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

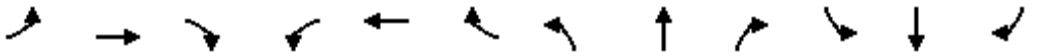


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	930	13	95	1442	93	19	19	16	33	32	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	5.7	4.0	4.7	4.7	4.9	4.9	4.9	3.9	4.9	3.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	979	14	100	1518	98	20	20	17	35	34	32
RTOR Reduction (vph)	0	0	7	0	0	26	0	0	16	0	0	29
Lane Group Flow (vph)	17	979	7	100	1518	72	20	20	1	35	34	3
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	0.6	39.5	39.5	6.2	45.1	45.1	5.0	5.0	5.0	6.6	6.6	6.6
Effective Green, g (s)	1.6	40.5	39.5	6.2	46.1	46.1	5.0	5.0	5.0	7.6	6.6	7.6
Actuated g/C Ratio	0.02	0.53	0.51	0.08	0.60	0.60	0.07	0.07	0.07	0.10	0.09	0.10
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.9	4.9	4.9	4.9	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	37	1866	814	143	2124	950	115	121	103	175	160	157
v/s Ratio Prot	0.01	0.28		c0.06	c0.43		c0.01	0.01		c0.02	0.02	
v/s Ratio Perm			0.00			0.05			0.00			0.00
v/c Ratio	0.46	0.52	0.01	0.70	0.71	0.08	0.17	0.17	0.01	0.20	0.21	0.02
Uniform Delay, d1	37.2	11.9	9.1	34.4	10.7	6.4	33.9	33.9	33.6	31.8	32.7	31.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.4	0.0	11.4	1.3	0.1	0.3	0.2	0.0	0.2	0.2	0.0
Delay (s)	40.4	12.3	9.1	45.8	12.1	6.5	34.2	34.2	33.6	32.0	32.9	31.3
Level of Service	D	B	A	D	B	A	C	C	C	C	C	C
Approach Delay (s)		12.7			13.7			34.0			32.1	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	12.8
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

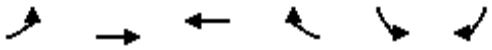
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	843	89	137	1514	111	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	887	94	144	1594	117	162
RTOR Reduction (vph)	0	55	0	0	0	134
Lane Group Flow (vph)	887	39	144	1594	117	28
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	23.4	23.4	8.4	36.8	9.7	9.7
Effective Green, g (s)	23.4	23.4	8.4	36.8	9.7	9.7
Actuated g/C Ratio	0.41	0.41	0.15	0.65	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1466	656	263	2305	304	272
v/s Ratio Prot	0.25		0.08	c0.45	c0.07	
v/s Ratio Perm		0.02				0.02
v/c Ratio	0.61	0.06	0.55	0.69	0.38	0.10
Uniform Delay, d1	12.9	9.9	22.3	6.2	20.8	19.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	2.3	0.9	0.8	0.2
Delay (s)	13.6	10.0	24.6	7.2	21.6	19.9
Level of Service	B	A	C	A	C	B
Approach Delay (s)	13.3			8.6	20.6	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



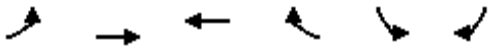
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	646	412	1029	935	49	684	1131	484	62	947	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.94	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	4990	3513		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	4990	3513		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	114	680	434	1083	984	52	720	1191	509	65	997	53
RTOR Reduction (vph)	0	0	273	0	3	0	0	0	287	0	0	38
Lane Group Flow (vph)	114	680	161	1083	1033	0	720	1191	222	65	997	15
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	10.0	21.3	21.3	24.0	35.0		25.6	48.8	48.8	6.4	29.6	29.6
Effective Green, g (s)	11.0	23.8	23.8	25.0	37.5		26.6	52.2	52.2	7.4	33.0	33.0
Actuated g/C Ratio	0.09	0.20	0.20	0.21	0.31		0.22	0.43	0.43	0.06	0.27	0.27
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	314	701	313	1038	1096		760	2208	687	211	1396	435
v/s Ratio Prot	0.03	0.19		c0.22	c0.29		c0.21	0.23		0.02	c0.20	
v/s Ratio Perm			0.10						0.14			0.01
v/c Ratio	0.36	0.97	0.51	1.04	0.94		0.95	0.54	0.32	0.31	0.71	0.03
Uniform Delay, d1	51.3	47.8	43.0	47.6	40.3		46.1	25.1	22.4	54.0	39.3	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	26.8	2.3	39.9	15.4		20.4	0.4	0.5	0.3	2.1	0.1
Delay (s)	51.6	74.7	45.4	87.5	55.7		66.5	25.6	22.9	54.3	41.5	32.0
Level of Service	D	E	D	F	E		E	C	C	D	D	C
Approach Delay (s)		62.2			72.0			37.2			41.8	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM Average Control Delay	53.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.2	Sum of lost time (s)	8.6
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



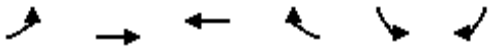
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	14	1169	1754	286	119	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	1231	1846	301	125	8
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	15	1231	1846	301	125	8
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.3	55.5	50.5	75.6	10.1	75.6
Effective Green, g (s)	2.3	58.5	53.5	75.6	11.6	75.6
Actuated g/C Ratio	0.03	0.77	0.71	1.00	0.15	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	54	2739	2504	1583	272	1583
v/s Ratio Prot	0.01	c0.35	c0.52		c0.07	
v/s Ratio Perm				0.19		0.01
v/c Ratio	0.28	0.45	0.74	0.19	0.46	0.01
Uniform Delay, d1	35.8	3.0	6.8	0.0	29.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	1.3	0.3	0.4	0.0
Delay (s)	36.9	3.1	8.1	0.3	29.6	0.0
Level of Service	D	A	A	A	C	A
Approach Delay (s)		3.5	7.0		27.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	8.2
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	16	1229	2065	22	47	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.99	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3534		1757	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3534		1757	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	1294	2174	23	49	6
RTOR Reduction (vph)	0	0	0	0	5	0
Lane Group Flow (vph)	17	1294	2197	0	50	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.2	66.8	61.6		7.0	
Effective Green, g (s)	2.2	69.5	64.3		8.0	
Actuated g/C Ratio	0.03	0.83	0.77		0.10	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	47	2946	2721		168	
v/s Ratio Prot	0.01	c0.37	c0.62		c0.03	
v/s Ratio Perm						
v/c Ratio	0.36	0.44	0.81		0.30	
Uniform Delay, d1	40.0	1.9	5.8		35.1	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.7	0.2	2.1		0.4	
Delay (s)	41.7	2.0	7.9		35.5	
Level of Service	D	A	A		D	
Approach Delay (s)		2.5	7.9		35.5	
Approach LOS		A	A		D	

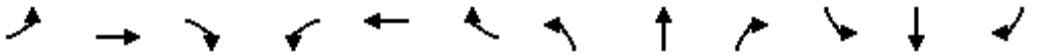
Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	45	1324	2095	1	34	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	5.7	3.0	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1517	1770	1543
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1517	1770	1543
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	1394	2205	1	36	39
RTOR Reduction (vph)	0	0	0	0	0	35
Lane Group Flow (vph)	47	1394	2205	1	36	4
Confl. Peds. (#/hr)				10		10
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.1	73.3	65.2	65.2	9.0	9.0
Effective Green, g (s)	5.1	76.0	67.9	66.2	10.0	10.0
Actuated g/C Ratio	0.05	0.82	0.73	0.71	0.11	0.11
Clearance Time (s)	4.0	6.7	6.7	6.7	4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	4.3	2.0	2.0
Lane Grp Cap (vph)	97	2892	2584	1080	190	166
v/s Ratio Prot	0.03	c0.39	c0.62		c0.02	
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.48	0.48	0.85	0.00	0.19	0.03
Uniform Delay, d1	42.7	2.6	9.0	3.9	37.8	37.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.2	3.1	0.0	0.2	0.0
Delay (s)	44.1	2.8	12.1	3.9	38.0	37.2
Level of Service	D	A	B	A	D	D
Approach Delay (s)		4.1	12.1		37.6	
Approach LOS		A	B		D	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1037	154	731	1638	307	251	668	594	364	637	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	2.0	2.7	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	1092	162	769	1724	323	264	703	625	383	671	287
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	74	1092	162	769	1724	323	264	703	625	383	671	287
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	4.8	28.7	120.0	31.3	55.2	120.0	11.7	25.8	120.0	15.8	28.9	120.0
Effective Green, g (s)	5.8	31.7	120.0	32.3	58.2	120.0	12.7	28.8	120.0	16.8	31.9	120.0
Actuated g/C Ratio	0.05	0.26	1.00	0.27	0.49	1.00	0.11	0.24	1.00	0.14	0.27	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		3.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	149	1209	1400	832	2220	1400	327	764	1400	433	847	1400
v/s Ratio Prot	0.02	c0.24		c0.25	0.38		0.09	c0.22		0.12	c0.21	
v/s Ratio Perm			0.12			0.23			0.45			0.21
v/c Ratio	0.50	0.90	0.12	0.92	0.78	0.23	0.81	0.92	0.45	0.88	0.79	0.20
Uniform Delay, d1	55.7	42.7	0.0	42.7	25.5	0.0	52.5	44.5	0.0	50.6	41.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	11.1	0.2	15.5	2.0	0.4	12.9	16.7	1.0	18.4	5.7	0.3
Delay (s)	56.6	53.7	0.2	58.2	27.5	0.4	65.3	61.2	1.0	69.1	46.7	0.3
Level of Service	E	D	A	E	C	A	E	E	A	E	D	A
Approach Delay (s)		47.4			32.8			38.3			43.1	
Approach LOS		D			C			D			D	

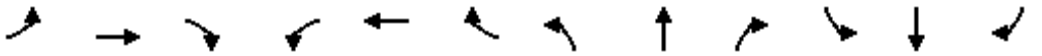
Intersection Summary			
HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1787	210	177	2895	7	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	1.7	1.7
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4978		1770	5085	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4978		1770	5085	1770	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1881	221	186	3047	7	206
RTOR Reduction (vph)	8	0	0	0	0	188
Lane Group Flow (vph)	2094	0	186	3047	7	18
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	81.3		16.6	101.9	9.4	9.4
Effective Green, g (s)	83.3		16.6	103.9	10.7	10.7
Actuated g/C Ratio	0.69		0.14	0.87	0.09	0.09
Clearance Time (s)	5.7		4.0	5.7	3.0	3.0
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	3456		245	4403	158	137
v/s Ratio Prot	0.42		c0.11	c0.60	0.00	
v/s Ratio Perm						c0.01
v/c Ratio	0.61		0.76	0.69	0.04	0.13
Uniform Delay, d1	9.7		49.8	2.7	50.0	50.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		11.3	0.9	0.0	0.2
Delay (s)	10.5		61.1	3.6	50.0	50.5
Level of Service	B		E	A	D	D
Approach Delay (s)	10.5			6.9	50.5	
Approach LOS	B			A	D	

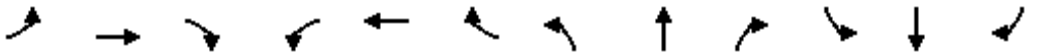
Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



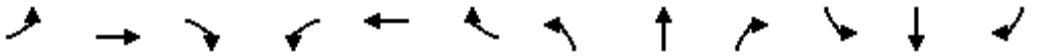
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	403	1477	97	814	1970	115	313	707	480	134	1522	636
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	6.0	5.7	4.0	6.0	6.0	4.0	4.0	6.4	4.0
Lane Util. Factor	0.97	0.91	1.00	0.94	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	424	1555	102	857	2074	121	329	744	505	141	1602	669
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	424	1555	102	857	2074	121	329	744	505	141	1602	669
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.3	42.3	120.0	19.0	48.3	120.0	9.0	28.7	120.0	8.3	25.6	120.0
Effective Green, g (s)	13.3	42.3	120.0	19.0	48.3	120.0	9.0	28.7	120.0	8.3	25.6	120.0
Actuated g/C Ratio	0.11	0.35	1.00	0.16	0.40	1.00	0.08	0.24	1.00	0.07	0.21	1.00
Clearance Time (s)	5.7	5.7		6.0	5.7		6.0	6.0		4.0	6.4	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	3.7	
Lane Grp Cap (vph)	380	1792	1583	790	2047	1583	257	1216	1583	237	1367	1583
v/s Ratio Prot	c0.12	0.31		0.17	c0.41		c0.10	0.15		0.04	c0.25	
v/s Ratio Perm			0.06			0.08			0.32			c0.42
v/c Ratio	1.12	0.87	0.06	1.08	1.01	0.08	1.28	0.61	0.32	0.59	1.17	0.42
Uniform Delay, d1	53.4	36.2	0.0	50.5	35.9	0.0	55.5	40.7	0.0	54.2	47.2	0.0
Progression Factor	1.00	1.00	1.00	0.86	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	81.3	5.1	0.1	52.9	20.0	0.1	152.5	1.1	0.5	2.7	85.5	0.8
Delay (s)	134.7	41.3	0.1	96.2	41.4	0.1	208.0	41.8	0.5	56.9	132.7	0.8
Level of Service	F	D	A	F	D	A	F	D	A	E	F	A
Approach Delay (s)		58.3			55.1			63.2			91.7	
Approach LOS		E			E			E			F	

Intersection Summary			
HCM Average Control Delay	66.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.8
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



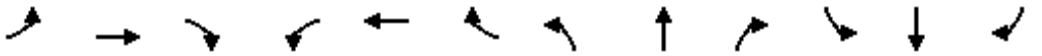
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	1718	115	528	2080	79	275	638	297	211	1233	362
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0	3.4	3.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	1808	121	556	2189	83	289	672	313	222	1298	381
RTOR Reduction (vph)	0	0	56	0	0	0	0	0	0	0	0	118
Lane Group Flow (vph)	173	1808	65	556	2189	83	289	672	313	222	1298	263
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			Free			6
Actuated Green, G (s)	8.6	43.0	43.0	16.0	52.4	120.0	10.0	29.7	120.0	8.9	28.6	28.6
Effective Green, g (s)	9.6	46.0	46.0	19.4	55.8	120.0	11.0	33.1	120.0	9.9	31.6	31.6
Actuated g/C Ratio	0.08	0.38	0.38	0.16	0.46	1.00	0.09	0.28	1.00	0.08	0.26	0.26
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1		2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	275	1949	607	555	2980	1583	315	976	1583	283	1339	417
v/s Ratio Prot	0.05	c0.36		c0.16	0.34		c0.08	0.19		0.06	c0.26	
v/s Ratio Perm			0.04			0.05			0.20			0.17
v/c Ratio	0.63	0.93	0.11	1.00	0.73	0.05	0.92	0.69	0.20	0.78	0.97	0.63
Uniform Delay, d1	53.5	35.4	23.8	50.3	26.1	0.0	54.0	38.8	0.0	54.0	43.7	39.0
Progression Factor	1.39	0.37	0.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	6.7	0.2	38.6	1.6	0.1	29.6	2.3	0.3	12.3	17.7	3.7
Delay (s)	76.5	19.7	1.7	88.9	27.7	0.1	83.7	41.2	0.3	66.3	61.4	42.8
Level of Service	E	B	A	F	C	A	F	D	A	E	E	D
Approach Delay (s)		23.3			39.0			40.8			58.2	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM Average Control Delay	39.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



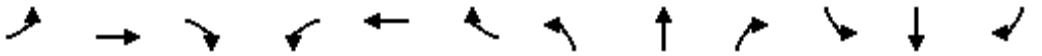
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	2149	32	93	2337	95	343	58	25	107	10	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	2262	34	98	2460	100	361	61	26	113	11	16
RTOR Reduction (vph)	0	0	10	0	0	22	0	0	22	0	0	15
Lane Group Flow (vph)	9	2262	24	98	2460	78	361	61	4	113	11	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.2	81.2	81.2	12.4	92.4	92.4	32.1	21.3	21.3	17.4	5.7	5.7
Effective Green, g (s)	1.2	81.2	81.2	12.4	92.4	92.4	32.1	21.3	21.3	17.4	5.7	5.7
Actuated g/C Ratio	0.01	0.54	0.54	0.08	0.62	0.62	0.21	0.14	0.14	0.12	0.04	0.04
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.5	2.5	2.0	3.1	3.1
Lane Grp Cap (vph)	14	2753	857	146	3132	975	379	265	225	205	71	60
v/s Ratio Prot	0.01	c0.44		0.06	c0.48		c0.20	c0.03		0.06	0.01	
v/s Ratio Perm			0.02			0.05			0.00			0.00
v/c Ratio	0.64	0.82	0.03	0.67	0.79	0.08	0.95	0.23	0.02	0.55	0.15	0.01
Uniform Delay, d1	74.2	28.4	16.0	66.8	21.4	11.6	58.2	57.1	55.3	62.6	69.8	69.4
Progression Factor	1.00	1.00	1.00	0.78	0.69	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	56.8	2.9	0.1	0.9	0.1	0.0	33.7	0.3	0.0	1.8	1.1	0.1
Delay (s)	131.0	31.3	16.1	53.1	14.8	7.4	91.9	57.4	55.4	64.4	70.9	69.5
Level of Service	F	C	B	D	B	A	F	E	E	E	E	E
Approach Delay (s)		31.5			16.0			85.0			65.5	
Approach LOS		C			B			F			E	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



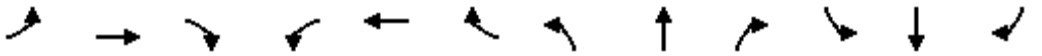
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	12	35	278	26	73	88	1421	188	97	1022	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	1490		1593	1490		1593	4577	1425	1593	3185	1425
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1593	1490		1593	1490		1593	4577	1425	1593	3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	13	37	293	27	77	93	1496	198	102	1076	1
RTOR Reduction (vph)	0	33	0	0	54	0	0	0	108	0	0	1
Lane Group Flow (vph)	6	17	0	293	50	0	93	1496	90	102	1076	0
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	0.6	10.3		18.8	28.5		9.4	42.5	42.5	10.4	42.5	42.5
Effective Green, g (s)	1.6	11.8		19.8	30.0		10.4	45.5	45.5	11.4	45.5	45.5
Actuated g/C Ratio	0.02	0.12		0.20	0.30		0.10	0.46	0.46	0.11	0.46	0.46
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	25	176		315	447		166	2083	648	182	1449	648
v/s Ratio Prot	0.00	0.01		c0.18	c0.03		0.06	0.33		c0.06	c0.34	
v/s Ratio Perm									0.06			0.00
v/c Ratio	0.24	0.10		0.93	0.11		0.56	0.72	0.14	0.56	0.74	0.00
Uniform Delay, d1	48.6	39.4		39.4	25.4		42.6	22.1	15.9	41.9	22.4	14.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.2		32.6	0.1		2.6	2.2	0.4	2.3	2.4	0.0
Delay (s)	50.4	39.6		72.1	25.4		45.2	24.2	16.3	44.3	24.8	14.9
Level of Service	D	D		E	C		D	C	B	D	C	B
Approach Delay (s)		40.7			59.8			24.4			26.5	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



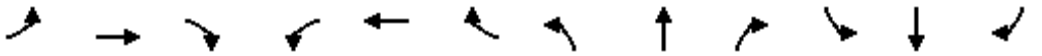
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	3	9	106	9	55	23	1432	63	47	984	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	3	9	112	9	58	24	1507	66	49	1036	7
RTOR Reduction (vph)	0	0	8	0	0	49	0	0	29	0	0	3
Lane Group Flow (vph)	4	3	1	112	9	9	24	1507	37	49	1036	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	4.2	4.2	6.4	10.1	10.1	0.7	35.2	35.2	2.3	36.8	36.8
Effective Green, g (s)	0.5	4.2	4.2	6.4	10.1	10.1	0.7	35.2	35.2	2.3	36.8	36.8
Actuated g/C Ratio	0.01	0.06	0.06	0.09	0.15	0.15	0.01	0.52	0.52	0.03	0.54	0.54
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	218	98	166	525	235	18	2628	818	60	2748	855
v/s Ratio Prot	0.00	0.00		c0.06	0.00		0.01	c0.30		c0.03	0.20	
v/s Ratio Perm			0.00			c0.01			0.02			0.00
v/c Ratio	0.31	0.01	0.01	0.67	0.02	0.04	1.33	0.57	0.04	0.82	0.38	0.00
Uniform Delay, d1	33.6	30.0	30.0	29.8	24.8	24.8	33.7	11.3	8.1	32.7	9.0	7.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.0	0.0	0.0	10.3	0.0	0.1	331.2	0.3	0.0	55.6	0.1	0.0
Delay (s)	46.6	30.0	30.0	40.2	24.8	24.9	364.9	11.6	8.2	88.3	9.1	7.2
Level of Service	D	C	C	D	C	C	F	B	A	F	A	A
Approach Delay (s)		34.2			34.5			16.8			12.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



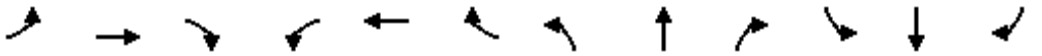
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	81	6	1	189	34	4	1	3	13	4	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	85	6	1	199	36	4	1	3	14	4	2
RTOR Reduction (vph)	0	0	5	0	0	28	0	0	2	0	0	1
Lane Group Flow (vph)	1	85	1	1	199	8	4	1	1	14	4	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	9.0	9.0	0.4	9.0	9.0	0.4	11.9	11.9	0.9	12.4	12.4
Effective Green, g (s)	0.4	9.0	9.0	0.4	9.0	9.0	0.4	11.9	11.9	0.9	12.4	12.4
Actuated g/C Ratio	0.01	0.21	0.21	0.01	0.21	0.21	0.01	0.28	0.28	0.02	0.29	0.29
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	17	755	338	17	755	338	17	525	446	38	547	465
v/s Ratio Prot	c0.00	0.02		0.00	c0.06		0.00	0.00		c0.01	c0.00	
v/s Ratio Perm			0.00			0.00			0.00			0.00
v/c Ratio	0.06	0.11	0.00	0.06	0.26	0.02	0.24	0.00	0.00	0.37	0.01	0.00
Uniform Delay, d1	20.7	13.4	13.1	20.7	13.8	13.1	20.7	10.9	10.9	20.4	10.5	10.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	0.0	1.5	0.2	0.0	7.0	0.0	0.0	6.0	0.0	0.0
Delay (s)	22.2	13.4	13.1	22.2	14.0	13.2	27.8	10.9	10.9	26.3	10.5	10.5
Level of Service	C	B	B	C	B	B	C	B	B	C	B	B
Approach Delay (s)		13.5			13.9			19.3			21.6	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.10		
Actuated Cycle Length (s)	42.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	24.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



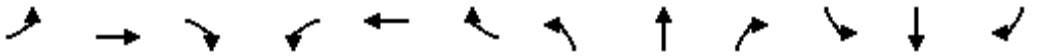
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	64	9	566	175	34	40	1428	237	57	861	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.3	4.3	4.0	3.3	4.3
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	67	9	596	184	36	42	1503	249	60	906	43
RTOR Reduction (vph)	0	0	8	0	0	23	0	0	128	0	0	27
Lane Group Flow (vph)	20	67	1	596	184	13	42	1503	121	60	906	16
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.6	12.0	12.0	16.6	28.0	28.0	2.8	29.9	29.9	3.0	30.1	30.1
Effective Green, g (s)	1.6	13.0	13.0	17.6	29.0	29.0	3.8	31.9	30.9	4.0	32.1	31.1
Actuated g/C Ratio	0.02	0.16	0.16	0.22	0.35	0.35	0.05	0.39	0.38	0.05	0.39	0.38
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	35	562	252	739	660	561	82	1983	598	87	1995	602
v/s Ratio Prot	0.01	0.02		c0.17	c0.10		0.02	c0.30		c0.03	0.18	
v/s Ratio Perm			0.00			0.01			0.08			0.01
v/c Ratio	0.57	0.12	0.01	0.81	0.28	0.02	0.51	0.76	0.20	0.69	0.45	0.03
Uniform Delay, d1	39.8	29.5	29.0	30.5	18.9	17.2	38.1	21.6	17.2	38.3	18.4	15.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.6	0.1	0.0	6.4	0.2	0.0	5.3	1.7	0.2	20.4	0.2	0.0
Delay (s)	60.3	29.6	29.0	36.9	19.1	17.2	43.4	23.3	17.3	58.7	18.5	15.9
Level of Service	E	C	C	D	B	B	D	C	B	E	B	B
Approach Delay (s)		35.9			32.0			23.0			20.8	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	81.8	Sum of lost time (s)	11.3
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



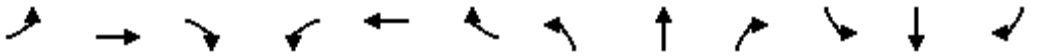
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	362	0	27	772	0	21	0	1	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0		5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00		1.00	
Frt	1.00	1.00		1.00	1.00		1.00		0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00		1.00	
Satd. Flow (prot)	1770	3539		1770	3539		1770		1583		1863	
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00		1.00	
Satd. Flow (perm)	1770	3539		1770	3539		1770		1583		1863	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	381	0	28	813	0	22	0	1	0	2	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	2	381	0	28	813	0	22	0	0	0	2	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	17.4		0.5	17.5		0.4		14.0		8.6	
Effective Green, g (s)	0.4	17.4		0.5	17.5		0.4		14.0		8.6	
Actuated g/C Ratio	0.01	0.37		0.01	0.37		0.01		0.30		0.18	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0		5.0		5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	15	1313		19	1321		15		473		342	
v/s Ratio Prot	0.00	0.11		c0.02	c0.23		c0.01				c0.00	
v/s Ratio Perm									0.00			
v/c Ratio	0.13	0.29		1.47	0.62		1.47		0.00		0.01	
Uniform Delay, d1	23.1	10.4		23.2	12.0		23.2		11.5		15.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2	4.0	0.1		378.9	0.9		405.4		0.0		0.0	
Delay (s)	27.1	10.5		402.1	12.8		428.6		11.5		15.7	
Level of Service	C	B		F	B		F		B		B	
Approach Delay (s)		10.6			25.8			410.5			15.7	
Approach LOS		B			C			F			B	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



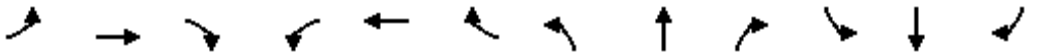
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	246	48	43	853	9	74	80	12	3	52	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	259	51	45	898	9	78	84	13	3	55	41
RTOR Reduction (vph)	0	0	33	0	0	6	0	0	9	0	0	31
Lane Group Flow (vph)	76	259	18	45	898	3	78	84	4	3	55	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.0	18.6	18.6	1.4	17.0	17.0	3.0	15.1	15.1	0.6	12.7	12.7
Effective Green, g (s)	4.0	20.6	19.6	2.4	19.0	18.0	4.0	17.1	16.1	1.6	14.7	13.7
Actuated g/C Ratio	0.07	0.37	0.35	0.04	0.34	0.32	0.07	0.31	0.29	0.03	0.26	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	127	1309	557	76	1207	512	127	572	458	51	492	389
v/s Ratio Prot	c0.04	0.07		0.03	c0.25		c0.04	c0.05		0.00	0.03	
v/s Ratio Perm			0.01			0.00			0.00			0.01
v/c Ratio	0.60	0.20	0.03	0.59	0.74	0.01	0.61	0.15	0.01	0.06	0.11	0.03
Uniform Delay, d1	25.1	11.9	11.8	26.2	16.2	12.8	25.1	14.0	14.1	26.3	15.5	15.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	0.1	0.0	11.8	2.5	0.0	8.5	0.1	0.0	0.5	0.1	0.0
Delay (s)	32.5	12.0	11.9	37.9	18.7	12.8	33.6	14.1	14.1	26.8	15.6	16.0
Level of Service	C	B	B	D	B	B	C	B	B	C	B	B
Approach Delay (s)		16.0			19.6			22.8			16.1	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	11.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



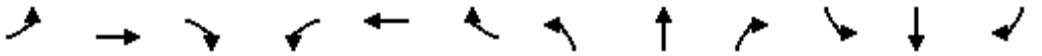
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	268	18	54	980	0	13	0	37	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0		5.0			5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00		1.00			1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00		0.85			0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95		1.00			1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539		1770		1583			1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95		1.00			1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539		1770		1583			1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	282	19	57	1032	0	14	0	39	0	0	5
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	28	0	0	4
Lane Group Flow (vph)	2	282	7	57	1032	0	14	0	11	0	0	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	19.4	19.4	2.4	21.4		0.4		13.9			8.5
Effective Green, g (s)	0.4	19.4	19.4	2.4	21.4		0.4		13.9			8.5
Actuated g/C Ratio	0.01	0.38	0.38	0.05	0.42		0.01		0.27			0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0		5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0		3.0			3.0
Lane Grp Cap (vph)	14	1354	606	84	1494		14		434			265
v/s Ratio Prot	0.00	0.08		c0.03	c0.29		c0.01					
v/s Ratio Perm			0.00						c0.01			0.00
v/c Ratio	0.14	0.21	0.01	0.68	0.69		1.00		0.02			0.00
Uniform Delay, d1	25.0	10.5	9.7	23.8	12.0		25.2		13.4			17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00		1.00			1.00
Incremental Delay, d2	4.7	0.1	0.0	19.6	1.4		240.5		0.0			0.0
Delay (s)	29.6	10.6	9.7	43.4	13.3		265.7		13.5			17.6
Level of Service	C	B	A	D	B		F		B			B
Approach Delay (s)		10.6			14.9			80.1			17.6	
Approach LOS		B			B			F			B	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	50.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



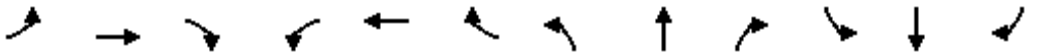
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	168	48	80	912	1	82	168	74	5	80	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	94	177	51	84	960	1	86	177	78	5	84	42
RTOR Reduction (vph)	0	0	32	0	0	1	0	0	57	0	0	33
Lane Group Flow (vph)	94	177	19	84	960	0	86	177	21	5	84	9
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.3	22.6	22.6	4.3	22.6	22.6	4.3	16.2	16.2	0.6	12.5	12.5
Effective Green, g (s)	5.3	24.6	23.6	5.3	24.6	23.6	5.3	18.2	17.2	1.6	14.5	13.5
Actuated g/C Ratio	0.08	0.39	0.37	0.08	0.39	0.37	0.08	0.29	0.27	0.03	0.23	0.21
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	147	1367	586	147	1367	586	147	532	427	44	424	335
v/s Ratio Prot	c0.05	0.05		0.05	c0.27		c0.05	c0.10		0.00	0.05	
v/s Ratio Perm			0.01			0.00			0.01			0.01
v/c Ratio	0.64	0.13	0.03	0.57	0.70	0.00	0.59	0.33	0.05	0.11	0.20	0.03
Uniform Delay, d1	28.3	12.6	12.8	28.1	16.5	12.6	28.1	18.0	17.2	30.4	19.9	19.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.8	0.0	0.0	5.3	1.7	0.0	5.8	0.4	0.0	1.2	0.2	0.0
Delay (s)	37.1	12.7	12.8	33.4	18.1	12.6	34.0	18.3	17.2	31.5	20.1	19.9
Level of Service	D	B	B	C	B	B	C	B	B	C	C	B
Approach Delay (s)		19.8			19.3			22.0			20.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



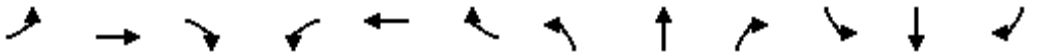
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	0	16	24	0	680	54	1660	25	237	1220	1027
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97		1.00	1.00		1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583	1770		1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583	1770		1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	262	0	17	25	0	716	57	1747	26	249	1284	1081
RTOR Reduction (vph)	0	0	16	0	0	33	0	0	8	0	0	238
Lane Group Flow (vph)	262	0	1	25	0	683	57	1747	18	249	1284	843
Turn Type	Prot		custom	Prot		Over	Prot		Perm	Prot		Perm
Protected Phases	7		4	3		1	5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	17.1		9.7	2.4		58.1	5.5	50.1	50.1	58.1	102.7	102.7
Effective Green, g (s)	17.1		9.7	2.4		58.1	5.5	50.1	50.1	58.1	102.7	102.7
Actuated g/C Ratio	0.12		0.07	0.02		0.41	0.04	0.36	0.36	0.41	0.73	0.73
Clearance Time (s)	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	418		109	30		656	69	1816	565	733	3722	1159
v/s Ratio Prot	c0.08		0.00	0.01		c0.43	0.03	c0.34		0.14	0.25	
v/s Ratio Perm									0.01			0.53
v/c Ratio	0.63		0.01	0.83		1.04	0.83	0.96	0.03	0.34	0.34	0.73
Uniform Delay, d1	58.6		60.8	68.8		41.1	66.9	44.2	29.3	28.0	6.7	10.8
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9		0.0	95.9		46.4	52.7	13.2	0.0	0.3	0.1	2.3
Delay (s)	61.5		60.9	164.6		87.5	119.6	57.4	29.3	28.3	6.8	13.1
Level of Service	E		E	F		F	F	E	C	C	A	B
Approach Delay (s)		61.5			90.1			58.9			11.4	
Approach LOS		E			F			E			B	

Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	140.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



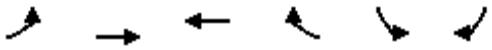
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	1458	27	71	1287	43	0	26	16	143	11	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	4.0	4.0	2.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1535	28	75	1355	45	0	27	17	151	12	7
RTOR Reduction (vph)	0	0	15	0	0	24	0	0	14	0	0	5
Lane Group Flow (vph)	16	1535	13	75	1355	21	0	27	3	151	12	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.6	29.4	29.4	3.1	31.9	31.9		10.3	10.3	8.2	23.5	23.5
Effective Green, g (s)	1.6	32.4	30.4	4.1	34.9	32.9		11.3	11.3	9.2	24.5	24.5
Actuated g/C Ratio	0.02	0.46	0.43	0.06	0.49	0.46		0.16	0.16	0.13	0.35	0.35
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	40	2320	678	102	2500	734		297	252	229	643	546
v/s Ratio Prot	0.01	c0.30		c0.04	0.27			c0.01		c0.09	0.01	
v/s Ratio Perm			0.01			0.01			0.00			0.00
v/c Ratio	0.40	0.66	0.02	0.74	0.54	0.03		0.09	0.01	0.66	0.02	0.00
Uniform Delay, d1	34.2	15.0	11.7	32.9	12.5	10.4		25.5	25.1	29.4	15.3	15.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.4	0.7	0.0	23.8	0.2	0.0		0.1	0.0	6.7	0.0	0.0
Delay (s)	40.7	15.7	11.7	56.7	12.8	10.4		25.6	25.2	36.1	15.3	15.3
Level of Service	D	B	B	E	B	B		C	C	D	B	B
Approach Delay (s)		15.9			14.9			25.4			33.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



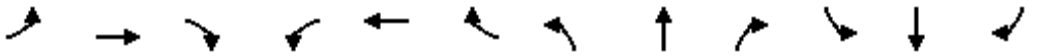
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	563	1136	6	492	1033	69	10	1006	524	57	671	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	4.0	4.0	2.0	4.0	4.0	2.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	593	1196	6	518	1087	73	11	1059	552	60	706	367
RTOR Reduction (vph)	0	0	4	0	0	51	0	0	242	0	0	233
Lane Group Flow (vph)	593	1196	2	518	1087	22	11	1059	310	60	706	134
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.4	33.5	33.5	18.3	32.4	32.4	0.7	36.3	36.3	3.0	38.6	38.6
Effective Green, g (s)	20.4	36.5	34.5	19.3	35.4	33.4	1.7	39.3	38.3	4.0	40.6	40.6
Actuated g/C Ratio	0.18	0.33	0.31	0.17	0.32	0.30	0.02	0.35	0.34	0.04	0.37	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	630	1671	492	596	1620	476	53	1799	546	124	1858	578
v/s Ratio Prot	c0.17	c0.24		0.15	0.21		0.00	c0.21		c0.02	0.14	
v/s Ratio Perm			0.00			0.01			0.20			0.08
v/c Ratio	0.94	0.72	0.00	0.87	0.67	0.05	0.21	0.59	0.57	0.48	0.38	0.23
Uniform Delay, d1	44.8	32.7	26.4	44.7	32.8	27.6	54.0	29.3	29.7	52.5	26.0	24.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.4	1.5	0.0	12.8	1.1	0.0	1.9	0.5	1.4	3.0	0.1	0.2
Delay (s)	67.2	34.2	26.4	57.5	33.9	27.6	56.0	29.8	31.0	55.5	26.1	24.6
Level of Service	E	C	C	E	C	C	E	C	C	E	C	C
Approach Delay (s)		45.1			40.9			30.4			27.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	36.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	111.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



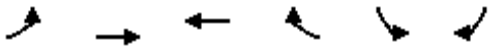
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	216	1298	1290	86	128	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	227	1366	1358	91	135	384
RTOR Reduction (vph)	0	0	0	55	0	312
Lane Group Flow (vph)	227	1366	1358	36	135	72
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	13.5	45.2	26.7	26.7	12.7	12.7
Effective Green, g (s)	13.5	45.2	26.7	26.7	12.7	12.7
Actuated g/C Ratio	0.20	0.67	0.39	0.39	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	352	3385	2000	622	331	296
v/s Ratio Prot	c0.13	0.27	c0.27		c0.08	
v/s Ratio Perm				0.02		0.05
v/c Ratio	0.64	0.40	0.68	0.06	0.41	0.24
Uniform Delay, d1	25.0	5.2	17.1	12.8	24.3	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.1	0.9	0.0	0.8	0.4
Delay (s)	29.0	5.3	18.0	12.8	25.1	23.9
Level of Service	C	A	B	B	C	C
Approach Delay (s)		8.7	17.7		24.2	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



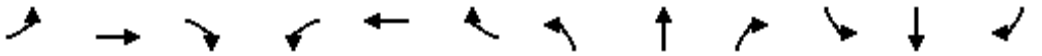
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	507	890	30	372	974	272	14	861	241	194	799	387
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	4.0	3.0	5.0	4.0	2.0	4.0	4.0	2.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	534	937	32	392	1025	286	15	906	254	204	841	407
RTOR Reduction (vph)	0	0	22	0	0	129	0	0	180	0	0	263
Lane Group Flow (vph)	534	937	10	392	1025	157	15	906	74	204	841	144
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	22.4	36.7	36.7	18.3	32.6	32.6	2.4	33.9	33.9	9.8	41.3	41.3
Effective Green, g (s)	23.4	39.7	37.7	19.3	35.6	33.6	3.4	36.9	34.9	10.8	44.3	42.3
Actuated g/C Ratio	0.20	0.33	0.31	0.16	0.30	0.28	0.03	0.31	0.29	0.09	0.37	0.35
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	671	1687	499	554	1512	444	98	1568	462	310	1882	559
v/s Ratio Prot	c0.16	0.18		0.11	c0.20		0.00	c0.18		c0.06	0.17	
v/s Ratio Perm			0.01			0.10			0.05			0.09
v/c Ratio	0.80	0.56	0.02	0.71	0.68	0.35	0.15	0.58	0.16	0.66	0.45	0.26
Uniform Delay, d1	45.9	32.8	28.3	47.5	37.0	34.4	56.7	34.8	31.5	52.7	28.5	27.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	0.4	0.0	4.1	1.2	0.5	0.7	0.5	0.2	5.0	0.2	0.2
Delay (s)	52.4	33.2	28.3	51.6	38.2	34.9	57.5	35.4	31.7	57.6	28.6	27.8
Level of Service	D	C	C	D	D	C	E	D	C	E	C	C
Approach Delay (s)		39.9			40.7			34.8			32.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	37.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	119.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



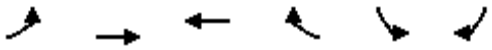
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1325	1461	89	0	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0		5.0
Lane Util. Factor		0.91	0.91	1.00		1.00
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		5085	5085	1583		1583
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		5085	5085	1583		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1395	1538	94	0	165
RTOR Reduction (vph)	0	0	0	40	0	131
Lane Group Flow (vph)	0	1395	1538	54	0	34
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)		25.3	25.3	25.3		9.1
Effective Green, g (s)		25.3	25.3	25.3		9.1
Actuated g/C Ratio		0.57	0.57	0.57		0.20
Clearance Time (s)		5.0	5.0	5.0		5.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		2898	2898	902		324
v/s Ratio Prot		0.27	c0.30			
v/s Ratio Perm				0.03		c0.02
v/c Ratio		0.48	0.53	0.06		0.10
Uniform Delay, d1		5.7	5.9	4.3		14.3
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.2	0.0		0.1
Delay (s)		5.8	6.1	4.3		14.5
Level of Service		A	A	A		B
Approach Delay (s)		5.8	6.0		14.5	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



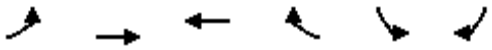
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	1148	153	22	1397	207	126	116	11	104	73	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	1208	161	23	1471	218	133	122	12	109	77	27
RTOR Reduction (vph)	0	0	93	0	0	122	0	0	10	0	0	22
Lane Group Flow (vph)	25	1208	68	23	1471	96	133	122	2	109	77	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.3	27.1	27.1	1.3	27.1	27.1	6.2	12.1	12.1	6.2	12.1	12.1
Effective Green, g (s)	2.3	29.1	28.1	2.3	29.1	28.1	7.2	14.1	13.1	7.2	14.1	13.1
Actuated g/C Ratio	0.03	0.44	0.42	0.03	0.44	0.42	0.11	0.21	0.20	0.11	0.21	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	61	2218	667	61	2218	667	191	394	311	191	394	311
v/s Ratio Prot	c0.01	0.24		0.01	c0.29		c0.08	c0.07		0.06	0.04	
v/s Ratio Perm			0.04			0.06			0.00			0.00
v/c Ratio	0.41	0.54	0.10	0.38	0.66	0.14	0.70	0.31	0.01	0.57	0.20	0.02
Uniform Delay, d1	31.5	13.9	11.7	31.5	14.9	11.9	28.7	22.2	21.6	28.3	21.6	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	0.3	0.1	3.9	0.8	0.1	10.5	0.5	0.0	4.1	0.2	0.0
Delay (s)	36.0	14.2	11.7	35.4	15.7	12.0	39.2	22.6	21.6	32.4	21.9	21.6
Level of Service	D	B	B	D	B	B	D	C	C	C	C	C
Approach Delay (s)		14.3			15.5			30.8			27.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



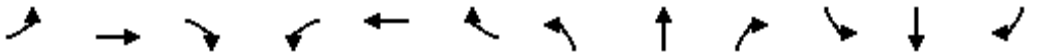
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	154	1109	1362	126	209	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	162	1167	1434	133	220	278
RTOR Reduction (vph)	0	0	0	85	0	210
Lane Group Flow (vph)	162	1167	1434	48	220	68
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.7	33.7	21.0	21.0	14.1	14.1
Effective Green, g (s)	7.7	33.7	21.0	21.0	14.1	14.1
Actuated g/C Ratio	0.13	0.58	0.36	0.36	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	2965	1847	575	432	386
v/s Ratio Prot	c0.09	0.23	c0.28		c0.12	
v/s Ratio Perm				0.03		0.04
v/c Ratio	0.69	0.39	0.78	0.08	0.51	0.18
Uniform Delay, d1	23.9	6.5	16.3	12.1	18.9	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0	0.1	2.1	0.1	0.9	0.2
Delay (s)	31.9	6.6	18.4	12.1	19.8	17.5
Level of Service	C	A	B	B	B	B
Approach Delay (s)		9.7	17.9		18.5	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	83	1235	1479	84	44	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	87	1300	1557	88	46	9
RTOR Reduction (vph)	0	0	0	47	0	7
Lane Group Flow (vph)	87	1300	1557	41	46	2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.8	33.6	24.8	24.8	9.9	9.9
Effective Green, g (s)	3.8	33.6	24.8	24.8	9.9	9.9
Actuated g/C Ratio	0.07	0.63	0.46	0.46	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	126	3194	2357	734	328	293
v/s Ratio Prot	c0.05	0.26	c0.31		c0.03	
v/s Ratio Perm				0.03		0.00
v/c Ratio	0.69	0.41	0.66	0.06	0.14	0.01
Uniform Delay, d1	24.3	5.0	11.1	7.9	18.2	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.1	0.1	0.7	0.0	0.2	0.0
Delay (s)	39.3	5.1	11.8	7.9	18.4	17.8
Level of Service	D	A	B	A	B	B
Approach Delay (s)		7.2	11.6		18.3	
Approach LOS		A	B		B	

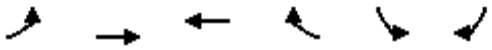
Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	195	1047	116	729	1398	340	168	863	442	397	794	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	3.0	3.7	3.7	3.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	205	1102	122	767	1472	358	177	908	465	418	836	45
RTOR Reduction (vph)	0	0	90	0	0	137	0	0	280	0	0	27
Lane Group Flow (vph)	205	1102	32	767	1472	221	177	908	185	418	836	18
Heavy Vehicles (%)	2%	4%	2%	2%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.3	32.9	32.9	28.0	49.6	49.6	8.9	30.0	30.0	15.0	36.1	36.1
Effective Green, g (s)	12.3	35.9	33.9	30.0	51.9	51.9	10.9	32.0	32.0	16.0	38.1	38.1
Actuated g/C Ratio	0.10	0.28	0.27	0.23	0.41	0.41	0.09	0.25	0.25	0.13	0.30	0.30
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	4.7	4.7	3.0	4.8	4.8	3.0	4.8	4.8	3.0	4.7	4.7
Lane Grp Cap (vph)	330	1400	420	805	2024	630	293	1272	396	429	1515	472
v/s Ratio Prot	0.06	c0.22		c0.22	0.30		0.05	c0.18		c0.12	0.16	
v/s Ratio Perm			0.02			0.14			0.12			0.01
v/c Ratio	0.62	0.79	0.08	0.95	0.73	0.35	0.60	0.71	0.47	0.97	0.55	0.04
Uniform Delay, d1	55.6	42.5	35.3	48.3	32.0	26.3	56.4	43.8	40.7	55.7	37.7	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	3.4	0.1	20.9	1.6	0.7	3.5	2.3	1.7	36.5	0.7	0.1
Delay (s)	59.2	45.9	35.4	69.2	33.6	27.0	59.9	46.1	42.4	92.2	38.4	32.0
Level of Service	E	D	D	E	C	C	E	D	D	F	D	C
Approach Delay (s)		46.9			43.2			46.6			55.5	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	47.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	127.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

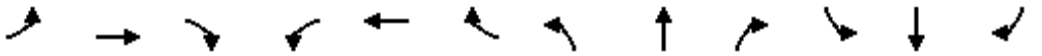
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	387	1422	1474	117	54	675
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1478	1770	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	407	1497	1552	123	57	711
RTOR Reduction (vph)	0	0	0	62	0	157
Lane Group Flow (vph)	407	1497	1552	61	57	554
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	8.6	40.4	27.8	27.8	4.8	13.4
Effective Green, g (s)	9.6	43.4	30.8	30.8	5.8	15.4
Actuated g/C Ratio	0.15	0.70	0.49	0.49	0.09	0.25
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	528	2461	1747	730	165	822
v/s Ratio Prot	0.12	0.42	c0.44		0.03	c0.10
v/s Ratio Perm				0.04		0.10
v/c Ratio	0.77	0.61	0.89	0.08	0.35	0.67
Uniform Delay, d1	25.3	5.0	14.2	8.3	26.5	21.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3	0.5	6.1	0.1	0.5	1.7
Delay (s)	31.6	5.5	20.4	8.4	27.0	23.0
Level of Service	C	A	C	A	C	C
Approach Delay (s)		11.1	19.5		23.3	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	62.4	Sum of lost time (s)	13.2
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

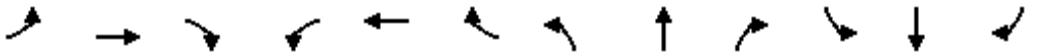
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	497	886	83	556	959	241	58	0	199	162	0	695
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0	5.0	2.0	4.0	3.0	2.0		3.0	3.7		2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.99	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1527	1770	3539	1562	1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1527	1770	3539	1562	1770		1583	1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	523	933	87	585	1009	254	61	0	209	171	0	732
RTOR Reduction (vph)	0	0	56	0	0	0	0	0	185	0	0	0
Lane Group Flow (vph)	523	933	31	585	1009	254	61	0	24	171	0	732
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot		Perm	Prot		Free	Prot		custom	Prot		Free
Protected Phases	7	4		3	8		5			6		
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	33.1	32.1	32.1	35.1	34.1	108.8	11.6		11.6	10.3		108.8
Effective Green, g (s)	35.1	34.1	33.1	37.1	36.1	108.8	13.6		12.6	12.3		108.8
Actuated g/C Ratio	0.32	0.31	0.30	0.34	0.33	1.00	0.12		0.12	0.11		1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0		4.0	5.7		
Vehicle Extension (s)	2.0	4.8	4.8	2.0	4.8		2.0		2.0	2.0		
Lane Grp Cap (vph)	571	1109	465	604	1174	1562	221		183	200		1583
v/s Ratio Prot	c0.30	0.26		c0.33	0.29		0.03			c0.10		
v/s Ratio Perm			0.02			0.16			0.02			c0.46
v/c Ratio	0.92	0.84	0.07	0.97	0.86	0.16	0.28		0.13	0.85		0.46
Uniform Delay, d1	35.4	34.8	26.9	35.3	34.0	0.0	43.1		43.2	47.4		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	19.1	6.5	0.1	28.4	7.0	0.2	0.2		0.1	27.3		1.0
Delay (s)	54.6	41.3	27.0	63.6	41.0	0.2	43.4		43.3	74.7		1.0
Level of Service	D	D	C	E	D	A	D		D	E		A
Approach Delay (s)		45.0			42.6			43.3			14.9	
Approach LOS		D			D			D			B	

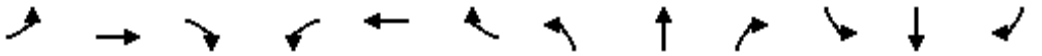
Intersection Summary			
HCM Average Control Delay	38.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	108.8	Sum of lost time (s)	7.7
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	331	498	90	616	152	832	1502	89	149	1709	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	260	348	524	95	648	160	876	1581	94	157	1799	294
RTOR Reduction (vph)	0	0	365	0	0	101	0	0	46	0	0	0
Lane Group Flow (vph)	260	348	159	95	648	59	876	1581	48	157	1799	294
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	10.8	20.2	20.2	7.8	18.2	18.2	33.0	57.9	57.9	14.1	39.0	120.0
Effective Green, g (s)	11.8	23.2	23.2	8.8	20.7	20.7	34.0	60.9	60.9	15.1	42.0	120.0
Actuated g/C Ratio	0.10	0.19	0.19	0.07	0.17	0.17	0.28	0.51	0.51	0.13	0.35	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	338	684	306	130	877	273	973	2581	803	223	2243	1583
v/s Ratio Prot	c0.08	0.10		0.05	c0.13		c0.26	0.31		0.09	c0.28	
v/s Ratio Perm			0.10			0.04			0.03			c0.19
v/c Ratio	0.77	0.51	0.52	0.73	0.74	0.22	0.90	0.61	0.06	0.70	0.80	0.19
Uniform Delay, d1	52.8	43.3	43.4	54.4	47.1	42.7	41.4	21.1	15.0	50.3	35.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.1	1.0	2.5	16.5	4.0	0.8	11.2	1.1	0.1	8.0	2.3	0.3
Delay (s)	61.9	44.3	45.8	71.0	51.1	43.5	52.6	22.2	15.1	58.3	37.6	0.3
Level of Service	E	D	D	E	D	D	D	C	B	E	D	A
Approach Delay (s)		49.1			51.8			32.4			34.1	
Approach LOS		D			D			C			C	

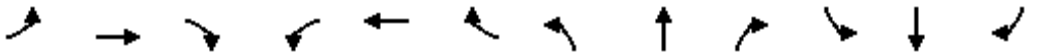
Intersection Summary			
HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	378	186	633	123	647	65	777	392	468	1214	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0	5.0	3.0	2.6	5.0	5.0	2.6	3.0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1562	3433	1863	1558	1770	3539	1570	3433	3539	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1562	3433	1863	1558	1770	3539	1570	3433	3539	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	398	196	666	129	681	68	818	413	493	1278	6
RTOR Reduction (vph)	0	0	0	0	0	97	0	0	34	0	0	0
Lane Group Flow (vph)	56	398	196	666	129	584	68	818	379	493	1278	6
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		Free
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			Free			8			2			Free
Actuated Green, G (s)	7.6	24.8	111.2	23.6	40.8	56.8	4.8	26.8	50.4	16.0	39.0	111.2
Effective Green, g (s)	8.6	24.8	111.2	23.6	40.8	56.8	5.8	30.2	50.4	16.0	42.4	111.2
Actuated g/C Ratio	0.08	0.22	1.00	0.21	0.37	0.51	0.05	0.27	0.45	0.14	0.38	1.00
Clearance Time (s)	4.0	4.0		5.0	5.0	5.0	4.0	6.0	5.0	5.0	6.0	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	3.9	3.0	3.0	3.9	
Lane Grp Cap (vph)	137	415	1562	729	684	866	92	961	712	494	1349	1548
v/s Ratio Prot	0.03	c0.21		c0.19	0.07	0.10	0.04	0.23	0.11	c0.14	c0.36	
v/s Ratio Perm			0.13			0.28			0.13			0.00
v/c Ratio	0.41	0.96	0.13	0.91	0.19	0.67	0.74	0.85	0.53	1.00	0.95	0.00
Uniform Delay, d1	48.9	42.7	0.0	42.8	23.9	20.3	52.0	38.4	21.9	47.6	33.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	33.1	0.2	15.9	0.1	2.1	23.2	7.6	0.8	39.7	13.9	0.0
Delay (s)	49.6	75.8	0.2	58.7	24.1	22.4	75.1	46.0	22.7	87.3	47.2	0.0
Level of Service	D	E	A	E	C	C	E	D	C	F	D	A
Approach Delay (s)		50.7			38.9			40.1			58.1	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	47.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	111.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

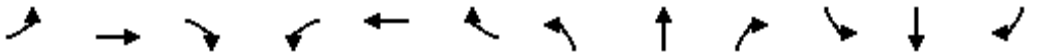
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	766	15	47	773	573	1	631	41	410	1221	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	4.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1556	3433	3539	1562	3433	3539	1562	3433	3539	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1556	3433	3539	1562	3433	3539	1562	3433	3539	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	806	16	49	814	603	1	664	43	432	1285	125
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	50
Lane Group Flow (vph)	59	806	5	49	814	603	1	664	43	432	1285	75
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	3		4	8		5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)	7.5	26.1	26.1	10.4	28.0	98.2	1.4	30.3	98.2	13.4	42.3	42.3
Effective Green, g (s)	8.5	27.1	27.1	11.4	29.0	98.2	2.4	31.3	98.2	14.4	43.3	43.3
Actuated g/C Ratio	0.09	0.28	0.28	0.12	0.30	1.00	0.02	0.32	1.00	0.15	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	5.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	3.0		2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)	297	977	429	399	1045	1562	84	1128	1562	503	1560	685
v/s Ratio Prot	0.02	c0.23		0.01	c0.23		0.00	0.19		c0.13	c0.36	
v/s Ratio Perm			0.00			0.39			0.03			0.05
v/c Ratio	0.20	0.82	0.01	0.12	0.78	0.39	0.01	0.59	0.03	0.86	0.82	0.11
Uniform Delay, d1	41.7	33.3	25.8	38.9	31.7	0.0	46.7	28.1	0.0	40.9	24.1	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	5.5	0.0	0.1	3.7	0.7	0.0	1.2	0.0	13.2	4.1	0.1
Delay (s)	41.8	38.8	25.8	39.0	35.4	0.7	46.8	29.2	0.0	54.1	28.2	16.3
Level of Service	D	D	C	D	D	A	D	C	A	D	C	B
Approach Delay (s)		38.8			21.3			27.5			33.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	98.2	Sum of lost time (s)	6.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



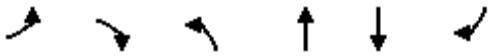
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	4	78	33	7	2	132	1338	22	0	1200	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00		0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85		1.00	
Flt Protected		0.97	1.00		0.96		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1800	1478		1780		1770	3539	1583		3539	
Flt Permitted		0.97	1.00		0.96		0.95	1.00	1.00		1.00	
Satd. Flow (perm)		1800	1478		1780		1770	3539	1583		3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	4	82	35	7	2	139	1408	23	0	1263	0
RTOR Reduction (vph)	0	0	72	0	2	0	0	0	4	0	0	0
Lane Group Flow (vph)	0	13	10	0	42	0	139	1408	19	0	1263	0
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		4.3	4.3		1.3		3.1	32.7	32.7		25.6	
Effective Green, g (s)		6.2	6.2		3.2		4.1	35.7	35.7		28.6	
Actuated g/C Ratio		0.12	0.12		0.06		0.08	0.68	0.68		0.54	
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0		6.0	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1		4.1	
Lane Grp Cap (vph)		213	175		108		138	2407	1076		1928	
v/s Ratio Prot		c0.01			c0.02		c0.08	0.40			c0.36	
v/s Ratio Perm			0.01						0.01			
v/c Ratio		0.06	0.06		0.39		1.01	0.58	0.02		0.66	
Uniform Delay, d1		20.6	20.6		23.7		24.2	4.5	2.7		8.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.0	0.0		0.8		78.5	0.4	0.0		0.9	
Delay (s)		20.6	20.6		24.6		102.7	4.9	2.7		9.4	
Level of Service		C	C		C		F	A	A		A	
Approach Delay (s)		20.6			24.6			13.5			9.4	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	10.4
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

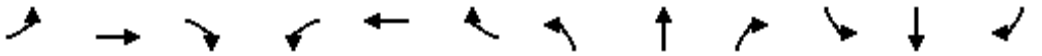
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	65	78	2116	163	80	2008
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	82	2227	172	84	2114
RTOR Reduction (vph)	0	74	0	44	0	0
Lane Group Flow (vph)	68	8	2227	128	84	2114
Turn Type		Perm		Perm	Prot	
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	11.7	11.7	83.8	83.8	8.4	96.2
Effective Green, g (s)	11.7	11.7	83.8	83.8	8.4	96.2
Actuated g/C Ratio	0.10	0.10	0.70	0.70	0.07	0.80
Clearance Time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Vehicle Extension (s)	2.5	2.5	3.5	3.5	2.0	3.7
Lane Grp Cap (vph)	173	154	3551	1105	124	4076
v/s Ratio Prot	c0.04		c0.44		c0.05	0.42
v/s Ratio Perm		0.01		0.08		
v/c Ratio	0.39	0.05	0.63	0.12	0.68	0.52
Uniform Delay, d1	50.8	49.1	9.7	5.9	54.5	4.0
Progression Factor	1.00	1.00	0.69	0.85	1.18	1.08
Incremental Delay, d2	1.1	0.1	0.3	0.0	9.5	0.4
Delay (s)	51.9	49.2	7.0	5.1	73.5	4.8
Level of Service	D	D	A	A	E	A
Approach Delay (s)	50.4		6.9			7.4
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



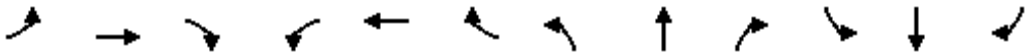
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	311	222	107	1968	1837	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	5085	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	327	234	113	2072	1934	248
RTOR Reduction (vph)	0	200	0	0	0	45
Lane Group Flow (vph)	327	34	113	2072	1934	203
Turn Type		Perm	Prot			Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Actuated Green, G (s)	17.6	17.6	11.8	91.0	74.9	74.9
Effective Green, g (s)	17.6	17.6	11.8	91.0	74.9	74.9
Actuated g/C Ratio	0.15	0.15	0.10	0.76	0.62	0.62
Clearance Time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.1	4.1	4.1
Lane Grp Cap (vph)	504	232	338	3856	3174	988
v/s Ratio Prot	c0.10		0.03	c0.41	c0.38	
v/s Ratio Perm		0.02				0.13
v/c Ratio	0.65	0.15	0.33	0.54	0.61	0.21
Uniform Delay, d1	48.3	44.7	50.4	5.9	13.7	9.7
Progression Factor	1.00	1.00	1.23	0.46	0.25	0.08
Incremental Delay, d2	2.2	0.1	0.2	0.4	0.8	0.4
Delay (s)	50.4	44.8	62.0	3.2	4.2	1.1
Level of Service	D	D	E	A	A	A
Approach Delay (s)	48.1			6.2	3.8	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



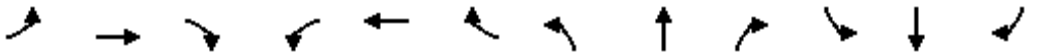
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	253	31	224	7	20	14	187	1808	8	15	1975	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1703	1583	1770	1746		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1703	1583	1770	1746		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	266	33	236	7	21	15	197	1903	8	16	2079	73
RTOR Reduction (vph)	0	0	211	0	14	0	0	0	3	0	0	19
Lane Group Flow (vph)	149	150	25	7	22	0	197	1903	5	16	2079	54
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	12.8	12.8	12.8	6.0	6.0		15.3	79.5	79.5	2.0	66.2	66.2
Effective Green, g (s)	12.8	12.8	12.8	6.0	6.0		15.3	79.5	79.5	2.0	66.2	66.2
Actuated g/C Ratio	0.11	0.11	0.11	0.05	0.05		0.13	0.66	0.66	0.02	0.55	0.55
Clearance Time (s)	6.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	3.8	3.8	3.8	2.5	2.5		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	179	182	169	89	87		226	3369	1049	30	2805	873
v/s Ratio Prot	c0.09	0.09		0.00	c0.01		c0.11	0.37		0.01	c0.41	
v/s Ratio Perm			0.02						0.00			0.03
v/c Ratio	0.83	0.82	0.15	0.08	0.25		0.87	0.56	0.01	0.53	0.74	0.06
Uniform Delay, d1	52.5	52.5	48.7	54.4	54.8		51.4	10.9	6.9	58.5	20.4	12.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.85	1.29	0.62	1.19	0.30	0.24
Incremental Delay, d2	27.6	25.9	0.5	0.3	1.1		23.2	0.5	0.0	7.2	1.0	0.0
Delay (s)	80.2	78.4	49.2	54.6	55.9		66.9	14.6	4.3	76.8	7.1	3.0
Level of Service	F	E	D	D	E		E	B	A	E	A	A
Approach Delay (s)		66.0			55.7			19.5			7.5	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



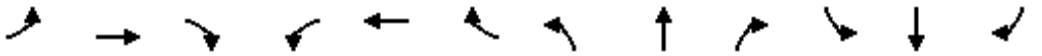
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	185	93	37	97	200	19	1731	132	335	1823	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5070	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5070	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	195	98	39	102	211	20	1822	139	353	1919	38
RTOR Reduction (vph)	0	0	82	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	76	195	16	39	102	211	20	1822	139	353	1956	0
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	7.5	20.0	20.0	3.6	15.3	120.0	2.0	61.6	120.0	16.2	75.8	
Effective Green, g (s)	7.5	20.0	20.0	3.6	15.3	120.0	2.0	61.6	120.0	16.2	75.8	
Actuated g/C Ratio	0.06	0.17	0.17	0.03	0.13	1.00	0.02	0.51	1.00	0.13	0.63	
Clearance Time (s)	4.0	4.9	4.9	4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	4.3		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	111	311	264	53	451	1583	30	2610	1583	463	3203	
v/s Ratio Prot	c0.04	c0.10		0.02	0.03		0.01	c0.36		c0.10	0.39	
v/s Ratio Perm			0.01			0.13			0.09			
v/c Ratio	0.68	0.63	0.06	0.74	0.23	0.13	0.67	0.70	0.09	0.76	0.61	
Uniform Delay, d1	55.1	46.5	42.1	57.7	47.0	0.0	58.7	22.1	0.0	50.0	13.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.14	0.35	
Incremental Delay, d2	13.0	6.2	0.2	36.2	0.4	0.2	35.7	0.9	0.1	4.6	0.6	
Delay (s)	68.1	52.7	42.4	94.0	47.4	0.2	94.3	23.1	0.1	61.4	5.3	
Level of Service	E	D	D	F	D	A	F	C	A	E	A	
Approach Delay (s)		53.1			24.3			22.2			13.9	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	3	8	21	3	171	97	915	11	92	1166	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1783	1583		1784	1583	1770	3533		1770	3536	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1783	1583		1784	1583	1770	3533		1770	3536	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	3	8	22	3	180	102	963	12	97	1227	7
RTOR Reduction (vph)	0	0	7	0	0	143	0	1	0	0	1	0
Lane Group Flow (vph)	0	27	1	0	25	37	102	974	0	97	1233	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		5.5	5.5		15.8	15.8	7.2	37.6		6.1	36.5	
Effective Green, g (s)		6.5	6.5		16.8	16.8	8.2	40.6		7.1	39.5	
Actuated g/C Ratio		0.08	0.08		0.20	0.20	0.10	0.49		0.09	0.48	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		140	124		362	322	176	1734		152	1689	
v/s Ratio Prot		c0.02			0.01		0.06	0.28		c0.05	c0.35	
v/s Ratio Perm			0.00			c0.02						
v/c Ratio		0.19	0.01		0.07	0.11	0.58	0.56		0.64	0.73	
Uniform Delay, d1		35.6	35.1		26.6	26.9	35.6	14.8		36.6	17.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.0	0.1	2.9	0.6		6.3	1.9	
Delay (s)		35.9	35.1		26.7	26.9	38.5	15.4		42.9	19.2	
Level of Service		D	D		C	C	D	B		D	B	
Approach Delay (s)		35.7			26.9			17.6			20.9	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	11.7
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

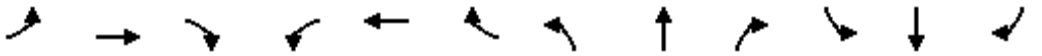


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	594	528	184	499	110	308	580	98	584	802	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1484	1856	3592	1471	3601	3592	1476	3565	5110	1462
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1484	1856	3592	1471	3601	3592	1476	3565	5110	1462
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	625	556	194	525	116	324	611	103	615	844	31
RTOR Reduction (vph)	0	0	43	0	0	79	0	0	73	0	0	21
Lane Group Flow (vph)	34	625	513	194	525	37	324	611	30	615	844	10
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.6	21.0	36.8	12.5	27.9	27.9	15.8	25.6	25.6	19.3	29.1	29.1
Effective Green, g (s)	6.6	24.0	38.8	13.5	30.9	30.9	16.8	28.6	28.6	20.3	32.1	32.1
Actuated g/C Ratio	0.07	0.25	0.40	0.14	0.32	0.32	0.17	0.29	0.29	0.21	0.33	0.33
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	125	881	589	256	1135	465	619	1050	432	740	1677	480
v/s Ratio Prot	0.02	0.17	c0.15	c0.10	0.15		0.09	c0.17		c0.17	0.17	
v/s Ratio Perm			0.20			0.03			0.02			0.01
v/c Ratio	0.27	0.71	0.87	0.76	0.46	0.08	0.52	0.58	0.07	0.83	0.50	0.02
Uniform Delay, d1	43.3	33.7	27.2	40.6	26.8	23.5	36.9	29.5	25.0	37.1	26.4	22.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	3.0	12.9	10.8	0.5	0.1	0.4	1.1	0.1	7.6	0.4	0.0
Delay (s)	43.7	36.7	40.1	51.4	27.3	23.6	37.2	30.6	25.1	44.7	26.8	22.3
Level of Service	D	D	D	D	C	C	D	C	C	D	C	C
Approach Delay (s)		38.5			32.4			32.1			34.1	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	34.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	97.8	Sum of lost time (s)	11.7
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1235	90	112	873	64	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	3.0	1.3	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1300	95	118	919	67	37
RTOR Reduction (vph)	0	45	0	0	0	31
Lane Group Flow (vph)	1300	50	118	919	67	6
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	30.8	30.8	5.9	42.4	9.5	9.5
Effective Green, g (s)	33.5	31.8	6.9	45.1	10.5	10.5
Actuated g/C Ratio	0.56	0.53	0.12	0.75	0.18	0.18
Clearance Time (s)	5.7	5.7	4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1979	840	204	2665	310	277
v/s Ratio Prot	c0.37		c0.07	0.26	c0.04	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.66	0.06	0.58	0.34	0.22	0.02
Uniform Delay, d1	9.2	6.8	25.1	2.5	21.2	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	2.5	0.1	0.1	0.0
Delay (s)	10.2	6.9	27.6	2.6	21.3	20.5
Level of Service	B	A	C	A	C	C
Approach Delay (s)	9.9			5.4	21.0	
Approach LOS	A			A	C	

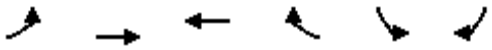
Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	127	435	694	59	207	85	644	1093	59	229	1767	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	134	458	731	62	218	89	678	1151	62	241	1860	94
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	134	458	731	62	218	89	678	1151	62	241	1860	94
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.0	23.6	120.0	8.0	23.0	120.0	29.5	53.7	120.0	15.0	39.2	120.0
Effective Green, g (s)	10.0	26.3	120.0	9.0	25.7	120.0	30.5	56.7	120.0	16.0	42.2	120.0
Actuated g/C Ratio	0.08	0.22	1.00	0.08	0.21	1.00	0.25	0.47	1.00	0.13	0.35	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	286	776	1562	257	758	1562	873	2403	1562	458	1788	1562
v/s Ratio Prot	0.04	c0.13		0.02	0.06		c0.20	0.23		0.07	c0.37	
v/s Ratio Perm			c0.47			0.06			0.04			0.06
v/c Ratio	0.47	0.59	0.47	0.24	0.29	0.06	0.78	0.48	0.04	0.53	1.04	0.06
Uniform Delay, d1	52.5	42.0	0.0	52.3	39.5	0.0	41.6	21.6	0.0	48.5	38.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.6	1.0	0.2	0.4	0.1	4.0	0.7	0.0	0.5	32.6	0.1
Delay (s)	52.9	43.6	1.0	52.5	39.8	0.1	45.6	22.3	0.0	49.0	71.5	0.1
Level of Service	D	D	A	D	D	A	D	C	A	D	E	A
Approach Delay (s)		21.0			32.4			29.9			66.0	
Approach LOS		C			C			C			E	

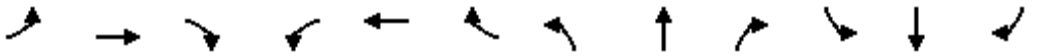
Intersection Summary			
HCM Average Control Delay	41.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	77	701	1052	479	310	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1510	1736	1534
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1510	1736	1534
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	81	738	1107	504	326	158
RTOR Reduction (vph)	0	0	0	239	0	12
Lane Group Flow (vph)	81	738	1107	265	326	146
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	3.3	30.1	34.8	34.8	17.5	20.8
Effective Green, g (s)	4.3	32.1	36.8	36.8	20.5	26.8
Actuated g/C Ratio	0.06	0.46	0.53	0.53	0.29	0.38
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	107	1594	1827	795	509	588
v/s Ratio Prot	c0.05	0.21	c0.32		c0.19	0.02
v/s Ratio Perm				0.18		0.07
v/c Ratio	0.76	0.46	0.61	0.33	0.64	0.25
Uniform Delay, d1	32.3	13.0	11.5	9.5	21.5	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.3	0.2	0.6	0.2	2.1	0.1
Delay (s)	55.6	13.2	12.1	9.8	23.6	14.8
Level of Service	E	B	B	A	C	B
Approach Delay (s)		17.4	11.4		20.7	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	8.3
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	636	15	9	1229	352	25	1	10	86	4	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3427		1787	3438	1478	1787	1623			1695	1470
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3427		1787	3438	1478	1787	1623			1695	1470
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	128	669	16	9	1294	371	26	1	11	91	4	326
RTOR Reduction (vph)	0	1	0	0	0	205	0	10	0	0	0	0
Lane Group Flow (vph)	128	684	0	9	1294	166	26	2	0	0	95	326
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	6.1	41.3		0.5	35.7	35.7	6.4	6.4			18.3	18.3
Effective Green, g (s)	7.1	43.3		1.5	37.7	37.7	7.4	7.4			19.3	19.3
Actuated g/C Ratio	0.08	0.51		0.02	0.45	0.45	0.09	0.09			0.23	0.23
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	145	1762		32	1539	662	157	143			389	337
v/s Ratio Prot	c0.07	0.20		0.01	c0.38		c0.01	0.00			0.06	
v/s Ratio Perm						0.11						c0.22
v/c Ratio	0.88	0.39		0.28	0.84	0.25	0.17	0.01			0.24	0.97
Uniform Delay, d1	38.1	12.4		40.8	20.6	14.5	35.5	35.1			26.5	32.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	41.2	0.1		1.8	4.3	0.2	0.2	0.0			0.3	39.9
Delay (s)	79.3	12.6		42.6	24.9	14.7	35.7	35.1			26.8	72.0
Level of Service	E	B		D	C	B	D	D			C	E
Approach Delay (s)		23.1			22.7			35.5			61.8	
Approach LOS		C			C			D			E	

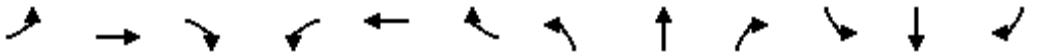
Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	84.2	Sum of lost time (s)	12.7
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	736	267	254	1644	115	667
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1565	1770	3539	1770	1573
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1565	1770	3539	1770	1573
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	775	281	267	1731	121	702
RTOR Reduction (vph)	0	133	0	0	0	11
Lane Group Flow (vph)	775	148	267	1731	121	691
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	20.3	29.6	16.4	40.7	9.3	25.7
Effective Green, g (s)	22.3	31.6	17.4	42.7	10.3	27.7
Actuated g/C Ratio	0.37	0.53	0.29	0.71	0.17	0.46
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1315	902	513	2519	304	805
v/s Ratio Prot	0.22	0.03	0.15	c0.49	0.07	c0.25
v/s Ratio Perm		0.07				0.19
v/c Ratio	0.59	0.16	0.52	0.69	0.40	0.86
Uniform Delay, d1	15.2	7.4	17.8	4.9	22.1	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	0.4	1.6	0.3	8.7
Delay (s)	15.8	7.4	18.3	6.4	22.4	23.1
Level of Service	B	A	B	A	C	C
Approach Delay (s)	13.6			8.0	23.0	
Approach LOS	B			A	C	

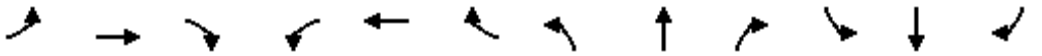
Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



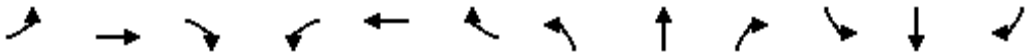
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	461	306	18	123	312	95	1	1517	11	102	1403	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.5	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	485	322	19	129	328	100	1	1597	12	107	1477	329
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	485	322	19	129	328	100	1	1597	12	107	1477	329
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	20.6	23.8	120.0	12.3	15.2	120.0	0.6	53.8	120.0	10.7	63.9	120.0
Effective Green, g (s)	21.6	26.3	120.0	13.3	17.7	120.0	1.6	56.3	120.0	11.7	66.4	120.0
Actuated g/C Ratio	0.18	0.22	1.00	0.11	0.15	1.00	0.01	0.47	1.00	0.10	0.55	1.00
Clearance Time (s)	4.0	5.7		4.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.3		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	618	776	1583	196	522	1583	24	2386	1583	173	2814	1583
v/s Ratio Prot	c0.14	0.09		0.07	c0.09		0.00	c0.31		c0.06	0.29	
v/s Ratio Perm			0.01			0.06			0.01			0.21
v/c Ratio	0.78	0.41	0.01	0.66	0.63	0.06	0.04	0.67	0.01	0.62	0.52	0.21
Uniform Delay, d1	47.0	40.2	0.0	51.2	48.1	0.0	58.4	24.6	0.0	52.0	16.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	0.6	0.0	6.0	2.6	0.1	0.3	1.5	0.0	4.6	0.7	0.3
Delay (s)	53.0	40.8	0.0	57.1	50.7	0.1	58.7	26.2	0.0	56.6	17.6	0.3
Level of Service	D	D	A	E	D	A	E	C	A	E	B	A
Approach Delay (s)		47.0			43.1			26.0			16.8	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.7
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



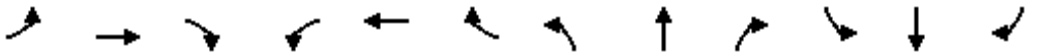
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	263	257	49	191	126	232	1422	89	104	1491	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	62	277	271	52	201	133	244	1497	94	109	1569	75
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	62	277	271	52	201	133	244	1497	94	109	1569	75
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.3	14.8	120.0	6.0	14.5	120.0	20.2	67.7	120.0	11.4	58.9	120.0
Effective Green, g (s)	7.3	17.3	120.0	7.0	17.0	120.0	21.2	70.2	120.0	12.4	61.4	120.0
Actuated g/C Ratio	0.06	0.14	1.00	0.06	0.14	1.00	0.18	0.59	1.00	0.10	0.51	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	108	510	1583	103	501	1583	313	2975	1583	183	2602	1583
v/s Ratio Prot	c0.04	c0.08		0.03	0.06		c0.14	0.29		0.06	c0.31	
v/s Ratio Perm			c0.17			0.08			0.06			0.05
v/c Ratio	0.57	0.54	0.17	0.50	0.40	0.08	0.78	0.50	0.06	0.60	0.60	0.05
Uniform Delay, d1	54.8	47.7	0.0	54.8	46.9	0.0	47.2	14.6	0.0	51.4	20.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	1.3	0.2	1.4	0.7	0.1	10.7	0.6	0.1	3.4	0.5	0.1
Delay (s)	59.4	49.0	0.2	56.2	47.6	0.1	57.8	15.3	0.1	54.8	21.2	0.1
Level of Service	E	D	A	E	D	A	E	B	A	D	C	A
Approach Delay (s)		28.4			32.4			20.1			22.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



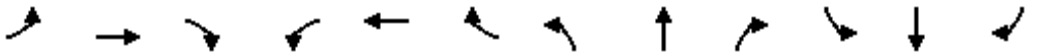
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	0	0	14	2	45	7	824	11	51	1173	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0				3.0	3.0	2.0	4.7		3.0	4.7	
Lane Util. Factor	1.00				1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00				1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770				1784	1583	1770	3532		1770	3534	
Flt Permitted	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770				1784	1583	1770	3532		1770	3534	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	0	0	15	2	47	7	867	12	54	1235	12
RTOR Reduction (vph)	0	0	0	0	0	41	0	1	0	0	0	0
Lane Group Flow (vph)	18	0	0	0	17	6	7	878	0	54	1247	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						4						
Actuated Green, G (s)	1.2				6.5	6.5	0.9	34.4		3.7	38.2	
Effective Green, g (s)	2.2				7.5	7.5	1.9	35.4		4.7	39.2	
Actuated g/C Ratio	0.03				0.12	0.12	0.03	0.56		0.07	0.62	
Clearance Time (s)	4.0				4.0	4.0	3.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0				2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	61				211	187	53	1969		131	2182	
v/s Ratio Prot	c0.01				c0.01		0.00	0.25		c0.03	c0.35	
v/s Ratio Perm						0.00						
v/c Ratio	0.30				0.08	0.03	0.13	0.45		0.41	0.57	
Uniform Delay, d1	29.9				24.9	24.8	30.0	8.3		28.1	7.2	
Progression Factor	1.00				1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0				0.1	0.0	0.4	0.3		0.8	0.5	
Delay (s)	30.9				25.0	24.8	30.4	8.6		28.8	7.7	
Level of Service	C				C	C	C	A		C	A	
Approach Delay (s)		30.9			24.9			8.7			8.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



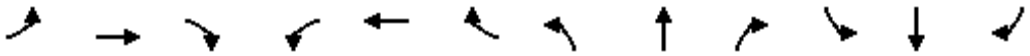
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	1179	52	50	740	8	40	2	27	13	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.97	1.00
Satd. Flow (prot)	1770	3517		1770	3539	1583		1778	1583		1805	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.97	1.00
Satd. Flow (perm)	1770	3517		1770	3539	1583		1778	1583		1805	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	1241	55	53	779	8	42	2	28	14	8	3
RTOR Reduction (vph)	0	3	0	0	0	3	0	0	25	0	0	3
Lane Group Flow (vph)	45	1293	0	53	779	5	0	44	3	0	22	0
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	1.9	36.0		2.7	36.8	36.8		5.9	5.9		4.7	4.7
Effective Green, g (s)	2.9	39.0		3.7	39.8	37.8		6.9	6.9		5.7	5.7
Actuated g/C Ratio	0.04	0.58		0.06	0.59	0.56		0.10	0.10		0.09	0.09
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	77	2047		98	2102	893		183	163		154	135
v/s Ratio Prot	0.03	c0.37		c0.03	0.22			c0.02			c0.01	
v/s Ratio Perm						0.00			0.00			0.00
v/c Ratio	0.58	0.63		0.54	0.37	0.01		0.24	0.02		0.14	0.00
Uniform Delay, d1	31.5	9.3		30.8	7.1	6.4		27.6	27.0		28.4	28.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	7.1	1.1		3.2	0.3	0.0		0.2	0.0		0.2	0.0
Delay (s)	38.6	10.4		34.1	7.4	6.4		27.9	27.0		28.5	28.0
Level of Service	D	B		C	A	A		C	C		C	C
Approach Delay (s)		11.3			9.1			27.6			28.5	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



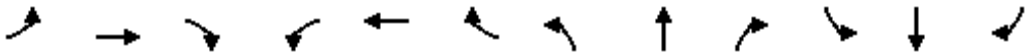
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	645	499	79	467	238	137	1165	37	290	1441	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	141	679	525	83	492	251	144	1226	39	305	1517	205
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	141	679	525	83	492	251	144	1226	39	305	1517	205
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.3	29.3	120.0	8.0	23.0	120.0	9.0	47.4	120.0	15.9	54.3	120.0
Effective Green, g (s)	15.3	31.8	120.0	9.0	25.5	120.0	10.0	50.4	120.0	16.9	57.3	120.0
Actuated g/C Ratio	0.13	0.27	1.00	0.08	0.21	1.00	0.08	0.42	1.00	0.14	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	226	938	1583	257	752	1583	286	2136	1583	483	2428	1583
v/s Ratio Prot	c0.08	c0.19		0.02	0.14		0.04	c0.24		0.09	c0.30	
v/s Ratio Perm			0.33			0.16			0.02			0.13
v/c Ratio	0.62	0.72	0.33	0.32	0.65	0.16	0.50	0.57	0.02	0.63	0.62	0.13
Uniform Delay, d1	49.6	40.1	0.0	52.6	43.2	0.0	52.6	26.6	0.0	48.6	23.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	2.8	0.6	0.7	2.1	0.2	1.4	0.4	0.0	2.7	1.2	0.2
Delay (s)	54.9	42.9	0.6	53.3	45.3	0.2	54.0	27.0	0.0	51.3	24.6	0.2
Level of Service	D	D	A	D	D	A	D	C	A	D	C	A
Approach Delay (s)		27.6			32.4			29.0			26.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	486	0	0	619	400	2	2	0	507	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0		3.0	3.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		0.95	0.95	
Frt		1.00			1.00	0.85		1.00		1.00	0.99	
Flt Protected		1.00			1.00	1.00		0.98		0.95	0.96	
Satd. Flow (prot)		3539			1863	1583		1817		1681	1670	
Flt Permitted		0.95			1.00	1.00		1.00		0.95	0.96	
Satd. Flow (perm)		3378			1863	1583		1863		1681	1670	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	512	0	0	652	421	2	2	0	534	0	24
RTOR Reduction (vph)	0	0	0	0	0	44	0	0	0	0	3	0
Lane Group Flow (vph)	0	513	0	0	652	377	0	4	0	283	272	0
Turn Type	Perm					pt+ov	Perm			Split		
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases	2						3					
Actuated Green, G (s)		81.5			76.9	106.6		0.8		24.8	24.8	
Effective Green, g (s)		82.5			77.9	107.6		1.8		25.8	25.8	
Actuated g/C Ratio		0.69			0.65	0.90		0.02		0.22	0.22	
Clearance Time (s)		4.9			4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1			3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		2322			1209	1419		28		361	359	
v/s Ratio Prot					c0.35	0.24				c0.17	0.16	
v/s Ratio Perm		c0.15						c0.00				
v/c Ratio		0.22			0.54	0.27		0.14		0.78	0.76	
Uniform Delay, d1		6.9			11.4	0.8		58.3		44.5	44.2	
Progression Factor		1.00			1.43	1.09		1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.5	0.1		0.9		9.9	7.9	
Delay (s)		7.1			16.7	1.0		59.2		54.3	52.0	
Level of Service		A			B	A		E		D	D	
Approach Delay (s)		7.1			10.5			59.2			53.2	
Approach LOS		A			B			E			D	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

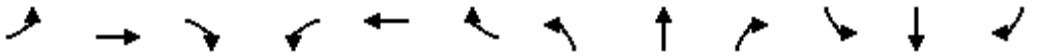


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	990	24	18	978	0	45	0	45	76	11	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9		2.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		1.00	1.00	
Frt		1.00		1.00	1.00			0.93		1.00	0.89	
Flt Protected		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3527		1770	3539			1695		1770	1660	
Flt Permitted		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3527		1770	3539			1695		1770	1660	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1042	25	19	1029	0	47	0	47	80	12	32
RTOR Reduction (vph)	0	1	0	0	0	0	0	31	0	0	29	0
Lane Group Flow (vph)	0	1066	0	19	1029	0	0	63	0	80	15	0
Turn Type				Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)		83.7		3.2	89.9			8.5		8.7	8.7	
Effective Green, g (s)		84.7		4.2	90.9			9.5		9.7	9.7	
Actuated g/C Ratio		0.71		0.04	0.76			0.08		0.08	0.08	
Clearance Time (s)		4.9		3.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1		2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		2489		62	2681			134		143	134	
v/s Ratio Prot		c0.30		0.01	c0.29			c0.04		c0.05	0.01	
v/s Ratio Perm												
v/c Ratio		0.43		0.31	0.38			0.47		0.56	0.11	
Uniform Delay, d1		7.4		56.5	5.0			52.8		53.1	51.1	
Progression Factor		0.58		1.15	0.49			1.00		1.00	1.00	
Incremental Delay, d2		0.1		1.0	0.4			0.9		2.7	0.1	
Delay (s)		4.4		66.1	2.9			53.8		55.8	51.3	
Level of Service		A		E	A			D		E	D	
Approach Delay (s)		4.4			4.0			53.8			54.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

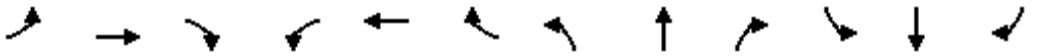
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1075	46	173	561	33	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		2.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3518		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3518		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1132	48	182	591	35	178
RTOR Reduction (vph)	4	0	0	0	0	157
Lane Group Flow (vph)	1176	0	182	591	35	21
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	32.5		9.6	45.1	6.0	6.0
Effective Green, g (s)	33.5		10.6	46.1	7.0	7.0
Actuated g/C Ratio	0.56		0.18	0.77	0.12	0.12
Clearance Time (s)	4.9		3.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	1964		313	2719	207	185
v/s Ratio Prot	c0.33		c0.10	0.17	c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.60		0.58	0.22	0.17	0.11
Uniform Delay, d1	8.8		22.7	1.9	23.9	23.7
Progression Factor	0.94		1.14	1.39	1.00	1.00
Incremental Delay, d2	0.5		1.3	0.1	0.1	0.1
Delay (s)	8.7		27.2	2.8	24.0	23.8
Level of Service	A		C	A	C	C
Approach Delay (s)	8.7			8.6	23.9	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



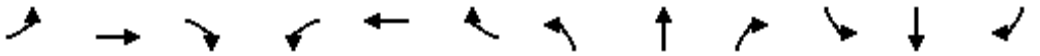
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	1153	4	13	1342	110	5	2	12	504	4	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3537		1770	3499			1678		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3537		1770	3499			1678		1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	1214	4	14	1413	116	5	2	13	531	4	96
RTOR Reduction (vph)	0	0	0	0	5	0	0	13	0	0	0	40
Lane Group Flow (vph)	104	1218	0	14	1524	0	0	7	0	265	270	56
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	9.6	76.7		1.2	68.3			1.6		23.0	23.0	23.0
Effective Green, g (s)	10.6	77.7		2.2	69.3			2.6		24.0	24.0	24.0
Actuated g/C Ratio	0.09	0.65		0.02	0.58			0.02		0.20	0.20	0.20
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	156	2290		32	2021			36		336	337	317
v/s Ratio Prot	c0.06	0.34		0.01	c0.44			c0.00		0.16	c0.16	
v/s Ratio Perm												0.04
v/c Ratio	0.67	0.53		0.44	0.75			0.20		0.79	0.80	0.18
Uniform Delay, d1	53.0	11.4		58.3	19.0			57.7		45.6	45.7	39.8
Progression Factor	0.80	1.16		0.64	0.54			1.00		1.00	1.00	1.00
Incremental Delay, d2	6.7	0.7		1.4	0.7			1.0		11.2	12.5	0.2
Delay (s)	49.4	14.0		38.6	11.0			58.7		56.8	58.2	40.0
Level of Service	D	B		D	B			E		E	E	D
Approach Delay (s)		16.8			11.2			58.7			54.9	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



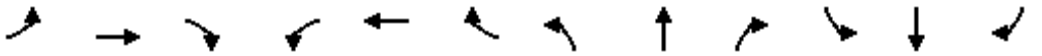
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	375	1306	18	109	1106	586	48	60	114	1000	12	331
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	395	1375	19	115	1164	617	51	63	120	1053	13	348
RTOR Reduction (vph)	0	1	0	0	0	212	0	0	102	0	0	217
Lane Group Flow (vph)	395	1393	0	115	1164	405	51	63	19	537	529	131
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	25.0	55.1		8.0	38.1	38.1	4.0	4.0	4.0	35.1	35.1	35.1
Effective Green, g (s)	25.0	55.1		8.0	38.1	38.1	4.0	4.0	4.0	35.1	35.1	35.1
Actuated g/C Ratio	0.21	0.46		0.07	0.32	0.32	0.03	0.03	0.03	0.29	0.29	0.29
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.3		2.0	3.5	3.5	2.0	2.0	2.0	2.3	2.3	2.3
Lane Grp Cap (vph)	369	1622		118	1124	503	59	62	53	492	493	463
v/s Ratio Prot	c0.22	0.39		0.06	c0.33		0.03	c0.03		c0.32	0.31	
v/s Ratio Perm						0.26			0.01			0.08
v/c Ratio	1.07	0.86		0.97	1.04	0.81	0.86	1.02	0.35	1.09	1.07	0.28
Uniform Delay, d1	47.5	29.0		55.9	41.0	37.6	57.7	58.0	56.7	42.5	42.5	32.7
Progression Factor	0.88	0.71		1.35	0.56	0.45	1.00	1.00	1.00	0.89	0.89	2.20
Incremental Delay, d2	63.2	5.3		18.8	19.5	0.9	68.5	118.9	1.4	62.4	56.0	0.1
Delay (s)	105.2	25.8		94.1	42.5	17.8	126.3	176.9	58.2	100.2	93.8	72.2
Level of Service	F	C		F	D	B	F	F	E	F	F	E
Approach Delay (s)		43.4			37.6			105.0			90.9	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM Average Control Delay	56.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



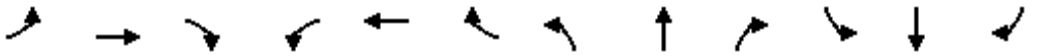
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1093	758	0	1618	1400	0	0	0	274	747	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.9		2.9	3.0				3.7	4.3	3.7
Lane Util. Factor		0.95	1.00		0.91	0.91				0.95	*0.90	1.00
Frt		1.00	0.85		0.97	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3539	1583		3275	1441				1681	1673	1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3539	1583		3275	1441				1681	1673	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1151	798	0	1703	1474	0	0	0	288	786	184
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	1151	798	0	2183	973	0	0	0	259	815	174
Turn Type			Prot			Free				Split		Prot
Protected Phases		2	2		6					4	4	4
Permitted Phases						Free						
Actuated Green, G (s)		64.1	64.1		64.1	120.0				45.7	45.7	45.7
Effective Green, g (s)		65.7	65.1		66.1	120.0				47.3	46.7	47.3
Actuated g/C Ratio		0.55	0.54		0.55	1.00				0.39	0.39	0.39
Clearance Time (s)		4.9	4.9		4.9					5.3	5.3	5.3
Vehicle Extension (s)		3.8	3.8		3.8					2.0	2.0	2.0
Lane Grp Cap (vph)		1938	859		1804	1441				663	651	624
v/s Ratio Prot		0.33	0.50		c0.67					0.15	c0.49	0.11
v/s Ratio Perm						0.68						
v/c Ratio		0.59	0.93		1.21	0.68				0.39	1.25	0.28
Uniform Delay, d1		18.2	25.3		27.0	0.0				26.0	36.6	24.7
Progression Factor		1.04	0.97		0.83	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.4	7.3		97.6	1.4				0.1	125.8	0.1
Delay (s)		19.4	31.8		119.9	1.4				26.2	162.4	24.8
Level of Service		B	C		F	A				C	F	C
Approach Delay (s)		24.5			83.6			0.0			114.2	
Approach LOS		C			F			A			F	

Intersection Summary			
HCM Average Control Delay	71.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



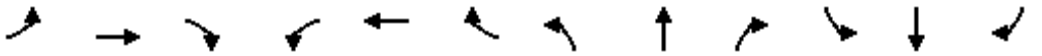
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	286	1081	0	0	2548	529	0	0	1180	0	0	469
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.9			3.0			2.0
Lane Util. Factor	1.00	0.86			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			4791	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			4791	1362			1611			2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	301	1138	0	0	2682	557	0	0	1242	0	0	494
RTOR Reduction (vph)	0	0	0	0	3	62	0	0	0	0	0	6
Lane Group Flow (vph)	301	1138	0	0	2735	439	0	0	1242	0	0	488
Turn Type	Prot					Perm			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						6			Free			
Actuated Green, G (s)	11.5	60.0			39.6	39.6			60.0			11.5
Effective Green, g (s)	13.5	60.0			41.6	41.6			60.0			13.5
Actuated g/C Ratio	0.22	1.00			0.69	0.69			1.00			0.22
Clearance Time (s)	4.0	4.9			4.9	4.9						4.0
Vehicle Extension (s)	2.0	3.9			3.8	3.8						2.0
Lane Grp Cap (vph)	398	6408			3322	944			1611			627
v/s Ratio Prot	0.17	0.18			0.57							0.18
v/s Ratio Perm						0.32			c0.77			
v/c Ratio	0.76	0.18			0.82	0.47			0.77			0.78
Uniform Delay, d1	21.7	0.0			6.6	4.2			0.0			21.8
Progression Factor	1.56	1.00			1.27	1.48			1.00			1.00
Incremental Delay, d2	5.9	0.0			0.8	0.5			3.6			5.5
Delay (s)	39.9	0.0			9.1	6.7			3.6			27.4
Level of Service	D	A			A	A			A			C
Approach Delay (s)		8.4			8.7			3.6			27.4	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	343	1758	422	412	1762	209	320	945	259	211	928	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	3.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	4.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1538
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	361	1851	444	434	1855	220	337	995	273	222	977	67
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	54
Lane Group Flow (vph)	361	1851	444	434	1855	220	337	995	273	222	977	13
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			4
Actuated Green, G (s)	14.6	46.0	120.0	17.0	50.4	120.0	13.0	25.3	120.0	10.0	22.3	22.3
Effective Green, g (s)	15.6	49.0	120.0	18.0	53.4	120.0	14.0	28.3	120.0	11.0	25.3	23.3
Actuated g/C Ratio	0.13	0.41	1.00	0.15	0.44	1.00	0.12	0.24	1.00	0.09	0.21	0.19
Clearance Time (s)	4.0	6.0		6.0	6.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.1		2.0	3.3		2.0	4.2		2.0	4.5	4.5
Lane Grp Cap (vph)	431	2076	1560	498	2263	1560	387	1199	1560	304	1072	299
v/s Ratio Prot	0.11	c0.36		0.13	c0.36		c0.10	c0.20		0.07	0.19	
v/s Ratio Perm			c0.28			0.14			0.18			0.01
v/c Ratio	0.84	0.89	0.28	0.87	0.82	0.14	0.87	0.83	0.17	0.73	0.91	0.04
Uniform Delay, d1	51.0	33.0	0.0	49.9	29.1	0.0	52.1	43.6	0.0	53.1	46.3	39.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.7	6.3	0.5	14.9	2.5	0.2	18.3	5.2	0.2	7.5	11.9	0.1
Delay (s)	63.7	39.3	0.5	64.8	31.6	0.2	70.4	48.8	0.2	60.6	58.1	39.4
Level of Service	E	D	A	E	C	A	E	D	A	E	E	D
Approach Delay (s)		36.2			34.6			45.1			57.6	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM Average Control Delay	40.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

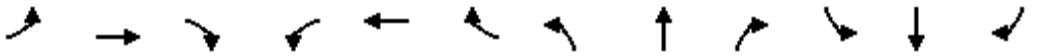


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1609	131	272	1526	4	22	2	442	7	5	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (prot)	1762	3604		1711	3538			1781	1583		1810	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (perm)	1762	3604		1711	3538			1781	1583		1810	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	1694	138	286	1606	4	23	2	465	7	5	7
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	49	0	0	7
Lane Group Flow (vph)	53	1827	0	286	1610	0	0	25	416	0	12	0
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	6.4	66.5		26.9	88.7			5.6	32.5		1.6	1.6
Effective Green, g (s)	7.4	69.0		27.9	91.2			7.1	35.5		3.1	3.1
Actuated g/C Ratio	0.06	0.58		0.23	0.76			0.06	0.30		0.03	0.03
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	109	2072		398	2689			105	501		47	38
v/s Ratio Prot	0.03	c0.51		0.17	0.46			0.01	c0.20		c0.01	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.49	0.88		0.72	0.60			0.24	0.83		0.26	0.00
Uniform Delay, d1	54.5	22.0		42.4	6.3			53.9	39.4		57.3	56.9
Progression Factor	1.00	1.00		1.16	0.71			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	4.9		4.1	0.8			0.4	10.4		1.0	0.0
Delay (s)	55.7	26.9		53.2	5.3			54.3	49.9		58.4	57.0
Level of Service	E	C		D	A			D	D		E	E
Approach Delay (s)		27.7			12.5			50.1			57.8	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

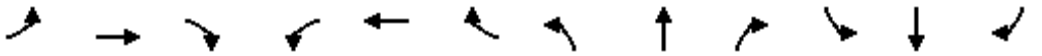
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1584	418	85	1648	145	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3428		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3428		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1667	440	89	1735	153	21
RTOR Reduction (vph)	20	0	0	0	0	18
Lane Group Flow (vph)	2087	0	89	1735	153	3
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	80.3		7.6	91.9	13.8	13.8
Effective Green, g (s)	82.3		9.6	93.9	15.8	15.8
Actuated g/C Ratio	0.69		0.08	0.78	0.13	0.13
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2351		142	2769	233	208
v/s Ratio Prot	c0.61		c0.05	0.49	c0.09	
v/s Ratio Perm						0.00
v/c Ratio	0.89		0.63	0.63	0.66	0.01
Uniform Delay, d1	15.1		53.5	5.6	49.5	45.3
Progression Factor	0.46		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6		6.1	1.1	5.8	0.0
Delay (s)	9.5		59.5	6.7	55.4	45.3
Level of Service	A		E	A	E	D
Approach Delay (s)	9.5			9.2	54.1	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	381	725	540	543	766	61	714	1202	167	209	1505	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3494		3433	3539	1549	3433	5085	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3494		3433	3539	1549	3433	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	401	763	568	572	806	64	752	1265	176	220	1584	222
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	57	0	0	83
Lane Group Flow (vph)	401	763	568	572	866	0	752	1265	119	220	1584	139
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	17.0	30.4	150.0	23.0	36.8		31.0	66.2	66.2	11.0	46.6	46.6
Effective Green, g (s)	18.0	31.9	150.0	24.0	38.3		32.0	67.7	67.2	12.0	48.1	47.6
Actuated g/C Ratio	0.12	0.21	1.00	0.16	0.26		0.21	0.45	0.45	0.08	0.32	0.32
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	412	753	1561	549	892		732	1597	694	275	1631	491
v/s Ratio Prot	0.12	c0.22		c0.17	0.25		c0.22	0.36		0.06	c0.31	
v/s Ratio Perm			0.36						0.08			0.09
v/c Ratio	0.97	1.01	0.36	1.04	0.97		1.03	0.79	0.17	0.80	0.97	0.28
Uniform Delay, d1	65.8	59.0	0.0	63.0	55.3		59.0	35.1	24.8	67.8	50.3	38.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.64	0.54	1.00	1.00	1.00
Incremental Delay, d2	37.0	36.1	0.7	49.8	23.3		35.7	3.1	0.4	14.4	16.0	0.4
Delay (s)	102.7	95.2	0.7	112.8	78.6		92.9	25.4	13.7	82.3	66.2	38.8
Level of Service	F	F	A	F	E		F	C	B	F	E	D
Approach Delay (s)		65.9			92.1			47.6			65.0	
Approach LOS		E			F			D			E	

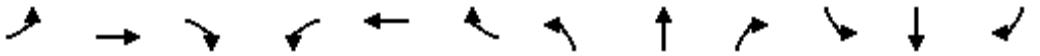
Intersection Summary			
HCM Average Control Delay	65.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	1094	11	141	1193	10	10	11	39	14	243	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		1.00	1.00
Satd. Flow (prot)	1770	3533		1770	3534			1819	1551		1858	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00		1.00	1.00
Satd. Flow (perm)	1770	3533		1770	3534			1819	1551		1858	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	62	1152	12	148	1256	11	11	12	41	15	256	240
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	38	0	0	197
Lane Group Flow (vph)	62	1163	0	148	1267	0	0	23	3	0	271	43
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	5.6	41.2		11.0	46.6			5.5	5.5		15.0	15.0
Effective Green, g (s)	6.6	43.2		12.0	48.6			6.5	6.5		16.0	16.0
Actuated g/C Ratio	0.07	0.48		0.13	0.54			0.07	0.07		0.18	0.18
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	130	1696		236	1908			131	112		330	281
v/s Ratio Prot	0.04	0.33		c0.08	c0.36			c0.01			c0.15	
v/s Ratio Perm									0.00			0.03
v/c Ratio	0.48	0.69		0.63	0.66			0.18	0.03		0.82	0.15
Uniform Delay, d1	40.0	18.1		36.9	14.8			39.2	38.8		35.6	31.3
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	2.3		3.7	1.1			0.2	0.0		14.4	0.1
Delay (s)	41.0	20.4		40.6	16.0			39.5	38.8		50.0	31.4
Level of Service	D	C		D	B			D	D		D	C
Approach Delay (s)		21.5			18.6			39.1			41.2	
Approach LOS		C			B			D			D	

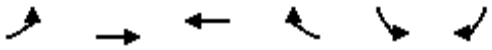
Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



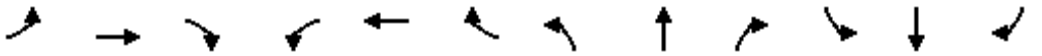
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	1092	0	15	1378	13	12	0	5	31	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.8		2.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3534			1730			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.75	1.00
Satd. Flow (perm)	1770	3539		1770	3534			1460			1389	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	1149	0	16	1451	14	13	0	5	33	0	26
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	0	24
Lane Group Flow (vph)	29	1149	0	16	1465	0	0	13	0	0	33	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	2.1	69.7		0.8	68.4			7.2			7.2	7.2
Effective Green, g (s)	3.1	72.2		1.8	70.9			8.2			8.2	8.2
Actuated g/C Ratio	0.03	0.80		0.02	0.79			0.09			0.09	0.09
Clearance Time (s)	3.0	5.3		3.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	61	2839		35	2784			133			127	144
v/s Ratio Prot	c0.02	0.32		0.01	c0.41							
v/s Ratio Perm								0.01			c0.02	0.00
v/c Ratio	0.48	0.40		0.46	0.53			0.10			0.26	0.02
Uniform Delay, d1	42.7	2.6		43.6	3.5			37.5			38.1	37.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	2.1	0.4		3.4	0.7			0.2			0.8	0.0
Delay (s)	44.8	3.0		47.0	4.2			37.8			38.9	37.3
Level of Service	D	A		D	A			D			D	D
Approach Delay (s)		4.1			4.6			37.8			38.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.8
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	596	404	729	214	786	628
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	0.98	1.00		0.95	1.00
Satd. Flow (prot)	1610	3324	3419		3433	1583
Flt Permitted	0.95	0.98	1.00		0.95	1.00
Satd. Flow (perm)	1610	3324	3419		3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	627	425	767	225	827	661
RTOR Reduction (vph)	0	0	30	0	0	16
Lane Group Flow (vph)	345	707	962	0	827	645
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	27.1	27.1	25.8		23.8	50.9
Effective Green, g (s)	29.6	29.6	28.3		24.8	55.9
Actuated g/C Ratio	0.33	0.33	0.31		0.28	0.62
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	530	1093	1075		946	1032
v/s Ratio Prot	c0.21	0.21	c0.28		c0.24	0.21
v/s Ratio Perm						0.20
v/c Ratio	0.65	0.65	0.89		0.87	0.63
Uniform Delay, d1	25.8	25.7	29.4		31.1	10.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.1	3.0	9.5		8.8	0.9
Delay (s)	31.9	28.7	38.9		39.9	11.4
Level of Service	C	C	D		D	B
Approach Delay (s)		29.7	38.9		27.2	
Approach LOS		C	D		C	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.3
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



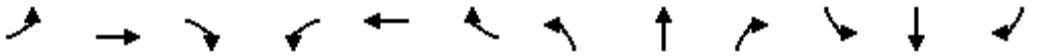
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	790	180	40	630	8	53	3	2	11	7	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.97		1.00	1.00			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.97	1.00
Satd. Flow (prot)	1770	3441		1770	3533			1560			1806	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78			0.87	1.00
Satd. Flow (perm)	1770	3441		1770	3533			1273			1621	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	832	189	42	663	8	56	3	2	12	7	343
RTOR Reduction (vph)	0	27	0	0	1	0	0	2	0	0	0	248
Lane Group Flow (vph)	29	994	0	42	670	0	0	59	0	0	19	95
Parking (#/hr)								4				
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	0.8	20.0		1.9	21.1			10.1			10.1	10.1
Effective Green, g (s)	1.8	22.0		2.9	23.1			11.1			11.1	11.1
Actuated g/C Ratio	0.04	0.49		0.06	0.51			0.25			0.25	0.25
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3		2.0	4.3			2.0			2.0	2.0
Lane Grp Cap (vph)	70	1671		113	1802			312			397	388
v/s Ratio Prot	0.02	c0.29		c0.02	0.19							
v/s Ratio Perm								0.05			0.01	c0.06
v/c Ratio	0.41	0.60		0.37	0.37			0.19			0.05	0.25
Uniform Delay, d1	21.2	8.4		20.3	6.7			13.5			13.1	13.7
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.4	0.7		0.8	0.2			0.1			0.0	0.1
Delay (s)	22.7	9.2		21.1	6.9			13.7			13.1	13.9
Level of Service	C	A		C	A			B			B	B
Approach Delay (s)		9.5			7.8			13.7			13.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	9.3
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

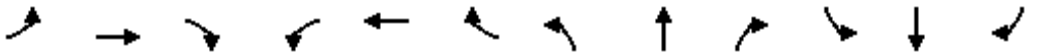
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	474	370	276	310	261	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5		2.8	2.5	3.0	2.8
Lane Util. Factor	0.97		1.00	1.00	1.00	1.00
Frt	0.93		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3284		1863	1583	1770	1863
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	3284		1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	499	389	291	326	275	579
RTOR Reduction (vph)	214	0	0	22	0	0
Lane Group Flow (vph)	674	0	291	304	275	579
Turn Type				pm+ov	Prot	
Protected Phases	8		6	8	5	2
Permitted Phases				6		
Actuated Green, G (s)	15.7		15.4	31.1	8.3	27.7
Effective Green, g (s)	17.2		17.9	34.1	9.3	30.2
Actuated g/C Ratio	0.33		0.34	0.65	0.18	0.57
Clearance Time (s)	4.0		5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0		4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	1072		633	1024	312	1068
v/s Ratio Prot	c0.21		0.16	0.10	c0.16	c0.31
v/s Ratio Perm				0.10		
v/c Ratio	0.63		0.46	0.30	0.88	0.54
Uniform Delay, d1	15.0		13.6	4.1	21.2	7.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		0.8	0.1	23.4	0.8
Delay (s)	15.9		14.5	4.1	44.5	7.8
Level of Service	B		B	A	D	A
Approach Delay (s)	15.9		9.0			19.6
Approach LOS	B		A			B

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	5.5
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



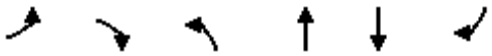
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	7	47	102	10	65	129	1413	149	79	1141	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	7	49	107	11	68	136	1487	157	83	1201	42
RTOR Reduction (vph)	0	0	44	0	0	54	0	0	82	0	0	26
Lane Group Flow (vph)	20	7	5	107	11	14	136	1487	75	83	1201	16
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.6	7.0	7.0	7.2	13.6	13.6	8.1	28.3	28.3	5.6	25.8	25.8
Effective Green, g (s)	0.6	7.0	7.0	7.2	13.6	13.6	8.1	28.3	28.3	5.6	25.8	25.8
Actuated g/C Ratio	0.01	0.10	0.10	0.11	0.20	0.20	0.12	0.42	0.42	0.08	0.38	0.38
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	16	191	163	187	372	316	211	2113	658	146	1926	600
v/s Ratio Prot	0.01	0.00		c0.06	0.01		c0.08	c0.29		0.05	0.24	
v/s Ratio Perm			0.00			c0.01			0.05			0.01
v/c Ratio	1.25	0.04	0.03	0.57	0.03	0.04	0.64	0.70	0.11	0.57	0.62	0.03
Uniform Delay, d1	33.8	27.5	27.5	29.0	21.9	22.0	28.6	16.4	12.2	30.1	17.2	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	314.0	0.1	0.1	4.2	0.0	0.1	6.6	1.1	0.1	5.0	0.6	0.0
Delay (s)	347.8	27.6	27.6	33.2	22.0	22.1	35.2	17.5	12.3	35.1	17.8	13.3
Level of Service	F	C	C	C	C	C	D	B	B	D	B	B
Approach Delay (s)		111.8			28.4			18.4			18.8	
Approach LOS		F			C			B			B	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	2	24	11	1	25	74	1853	30	46	1213	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	2	25	12	1	26	78	1951	32	48	1277	22
RTOR Reduction (vph)	0	0	23	0	0	24	0	0	10	0	0	10
Lane Group Flow (vph)	12	2	2	12	1	2	78	1951	22	48	1277	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	5.2	5.2	0.6	5.3	5.3	5.1	39.0	39.0	1.7	35.6	35.6
Effective Green, g (s)	1.5	7.2	6.2	1.6	7.3	6.3	6.1	41.0	40.0	2.7	37.6	36.6
Actuated g/C Ratio	0.02	0.11	0.09	0.02	0.11	0.09	0.09	0.62	0.60	0.04	0.57	0.55
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	40	202	148	43	205	150	162	3135	952	72	2875	871
v/s Ratio Prot	c0.01	0.00		0.01	0.00		c0.04	c0.38		0.03	0.25	
v/s Ratio Perm			0.00			c0.00			0.01			0.01
v/c Ratio	0.30	0.01	0.02	0.28	0.00	0.02	0.48	0.62	0.02	0.67	0.44	0.01
Uniform Delay, d1	32.0	26.5	27.4	31.9	26.4	27.3	28.7	7.9	5.4	31.5	8.4	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.0	0.0	3.5	0.0	0.0	2.2	0.4	0.0	20.9	0.1	0.0
Delay (s)	36.2	26.5	27.4	35.4	26.4	27.3	30.9	8.3	5.4	52.3	8.5	6.8
Level of Service	D	C	C	D	C	C	C	A	A	D	A	A
Approach Delay (s)		30.1			29.8			9.1			10.0	
Approach LOS		C			C			A			B	

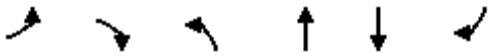
Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	11.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	73	51	118	1362	1110	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1562	1770	5085	5085	1548
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1562	1770	5085	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	54	124	1434	1168	172
RTOR Reduction (vph)	0	46	0	0	0	96
Lane Group Flow (vph)	77	8	124	1434	1168	76
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	6.9	6.9	5.5	29.0	19.5	19.5
Effective Green, g (s)	6.9	6.9	5.5	29.0	19.5	19.5
Actuated g/C Ratio	0.16	0.16	0.13	0.66	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	278	246	222	3359	2259	688
v/s Ratio Prot	c0.04		c0.07	0.28	c0.23	
v/s Ratio Perm		0.01				0.05
v/c Ratio	0.28	0.03	0.56	0.43	0.52	0.11
Uniform Delay, d1	16.3	15.7	18.1	3.5	8.8	7.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	3.0	0.1	0.2	0.1
Delay (s)	16.8	15.7	21.1	3.6	9.0	7.2
Level of Service	B	B	C	A	A	A
Approach Delay (s)	16.4			5.0	8.8	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

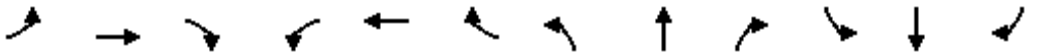
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	18	22	55	1463	1118	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1563	1770	5085	5085	1549
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1563	1770	5085	5085	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	23	58	1540	1177	45
RTOR Reduction (vph)	0	21	0	0	0	20
Lane Group Flow (vph)	19	2	58	1540	1177	25
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	3.0	3.0	1.5	25.7	20.2	20.2
Effective Green, g (s)	3.0	3.0	1.5	25.7	20.2	20.2
Actuated g/C Ratio	0.08	0.08	0.04	0.70	0.55	0.55
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	145	128	72	3561	2799	853
v/s Ratio Prot	c0.01		0.03	c0.30	0.23	
v/s Ratio Perm		0.00				0.02
v/c Ratio	0.13	0.01	0.81	0.43	0.42	0.03
Uniform Delay, d1	15.6	15.5	17.5	2.4	4.8	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	46.1	0.1	0.1	0.0
Delay (s)	16.1	15.5	63.6	2.4	4.9	3.8
Level of Service	B	B	E	A	A	A
Approach Delay (s)	15.8			4.7	4.9	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	36.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



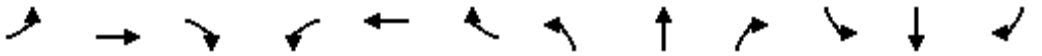
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	0	43	13	0	5	103	1446	31	9	1311	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.92			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1662			1727		1770	5085	1545	1770	5085	1545
Flt Permitted		0.98			0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1662			1727		1770	5085	1545	1770	5085	1545
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	28	0	45	14	0	5	108	1522	33	9	1380	83
RTOR Reduction (vph)	0	40	0	0	5	0	0	0	6	0	0	20
Lane Group Flow (vph)	0	33	0	0	14	0	108	1522	27	9	1380	63
Confl. Peds. (#/hr)			2			2	2		2			2
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)		8.3			5.2		9.2	48.7	48.7	0.4	39.9	39.9
Effective Green, g (s)		8.3			5.2		9.2	48.7	48.7	0.4	39.9	39.9
Actuated g/C Ratio		0.11			0.07		0.12	0.62	0.62	0.01	0.51	0.51
Clearance Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		176			114		207	3151	957	9	2581	784
v/s Ratio Prot		c0.02			c0.01		c0.06	0.30		0.01	c0.27	
v/s Ratio Perm									0.02			0.04
v/c Ratio		0.19			0.13		0.52	0.48	0.03	1.00	0.53	0.08
Uniform Delay, d1		32.1			34.6		32.6	8.1	5.8	39.1	13.1	9.9
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5			0.5		2.4	0.1	0.0	300.0	0.2	0.0
Delay (s)		32.6			35.1		35.0	8.2	5.8	339.1	13.3	10.0
Level of Service		C			D		C	A	A	F	B	A
Approach Delay (s)		32.6			35.1			9.9			15.1	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

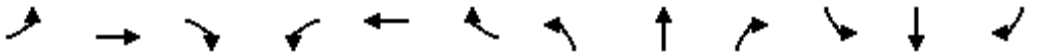
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	828	131	133	649	141	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	872	138	140	683	148	76
RTOR Reduction (vph)	0	70	0	0	0	61
Lane Group Flow (vph)	872	68	140	683	148	15
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	20.7	20.7	4.5	30.9	8.5	8.5
Effective Green, g (s)	24.1	24.1	5.5	34.3	9.5	9.5
Actuated g/C Ratio	0.49	0.49	0.11	0.70	0.19	0.19
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1737	777	198	2472	342	306
v/s Ratio Prot	c0.25		c0.08	0.19	c0.08	
v/s Ratio Perm		0.04				0.01
v/c Ratio	0.50	0.09	0.71	0.28	0.43	0.05
Uniform Delay, d1	8.4	6.6	21.0	2.8	17.4	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	9.0	0.1	0.3	0.0
Delay (s)	8.8	6.7	30.1	2.9	17.7	16.1
Level of Service	A	A	C	A	B	B
Approach Delay (s)	8.6			7.5	17.2	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	49.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	19	26	21	13	33	56	955	49	60	842	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	20	27	22	14	35	59	1005	52	63	886	144
RTOR Reduction (vph)	0	0	22	0	0	30	0	0	27	0	0	75
Lane Group Flow (vph)	53	20	5	22	14	5	59	1005	25	63	886	69
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.4	9.5	9.5	0.5	7.6	7.6	2.9	28.5	28.5	2.4	28.0	28.0
Effective Green, g (s)	3.4	11.5	10.5	1.5	9.6	8.6	3.9	30.5	29.5	3.4	30.0	29.0
Actuated g/C Ratio	0.06	0.19	0.17	0.02	0.16	0.14	0.06	0.50	0.48	0.06	0.49	0.48
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	99	352	273	44	294	224	113	2547	767	99	2505	754
v/s Ratio Prot	c0.03	c0.01		0.01	0.01		0.03	c0.20		c0.04	0.17	
v/s Ratio Perm			0.00			0.00			0.02			0.04
v/c Ratio	0.54	0.06	0.02	0.50	0.05	0.02	0.52	0.39	0.03	0.64	0.35	0.09
Uniform Delay, d1	28.0	20.3	20.9	29.3	21.8	22.5	27.6	9.5	8.2	28.1	9.5	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	0.1	0.0	8.7	0.1	0.0	4.3	0.1	0.0	12.6	0.1	0.1
Delay (s)	33.5	20.3	20.9	38.0	21.8	22.6	31.9	9.6	8.2	40.8	9.6	8.8
Level of Service	C	C	C	D	C	C	C	A	A	D	A	A
Approach Delay (s)		27.4			27.2			10.7			11.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	60.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

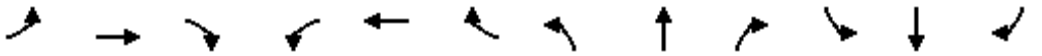


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	50	42	125	175	0	95	1028	264	2	760	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	53	44	132	184	0	100	1082	278	2	800	135
RTOR Reduction (vph)	0	0	35	0	0	0	0	0	164	0	0	88
Lane Group Flow (vph)	34	53	9	132	184	0	100	1082	114	2	800	47
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.3	13.4	13.4	7.8	18.9		5.2	27.5	27.5	0.6	22.9	22.9
Effective Green, g (s)	3.3	14.4	14.4	8.8	19.9		6.2	29.5	28.5	1.6	24.9	23.9
Actuated g/C Ratio	0.05	0.21	0.21	0.13	0.29		0.09	0.43	0.41	0.02	0.36	0.34
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	84	387	329	225	535		158	2165	651	41	1827	546
v/s Ratio Prot	0.02	0.03		c0.07	c0.10		c0.06	c0.21		0.00	0.16	
v/s Ratio Perm			0.01						0.07			0.03
v/c Ratio	0.40	0.14	0.03	0.59	0.34		0.63	0.50	0.18	0.05	0.44	0.09
Uniform Delay, d1	32.0	22.4	21.9	28.5	19.5		30.5	14.5	12.9	33.1	16.9	15.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.2	0.0	3.9	0.4		8.0	0.2	0.1	0.5	0.2	0.1
Delay (s)	35.2	22.5	21.9	32.4	19.9		38.5	14.7	13.1	33.6	17.0	15.4
Level of Service	D	C	C	C	B		D	B	B	C	B	B
Approach Delay (s)		25.6			25.1			16.0			16.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

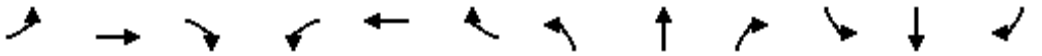
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	39	14	1367	84	0	928
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0		5.0
Lane Util. Factor	1.00	1.00	0.91	1.00		0.91
Frt	1.00	0.85	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	5085	1583		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	5085	1583		5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	15	1439	88	0	977
RTOR Reduction (vph)	0	13	0	27	0	0
Lane Group Flow (vph)	41	2	1439	61	0	977
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.7	6.7	37.7	37.7		37.7
Effective Green, g (s)	6.7	6.7	37.7	37.7		37.7
Actuated g/C Ratio	0.12	0.12	0.69	0.69		0.69
Clearance Time (s)	5.0	5.0	5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	218	195	3524	1097		3524
v/s Ratio Prot	c0.02		c0.28			0.19
v/s Ratio Perm		0.00		0.04		
v/c Ratio	0.19	0.01	0.41	0.06		0.28
Uniform Delay, d1	21.4	20.9	3.6	2.7		3.2
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	0.0	0.1	0.0		0.0
Delay (s)	21.8	21.0	3.7	2.7		3.2
Level of Service	C	C	A	A		A
Approach Delay (s)	21.6		3.6			3.2
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	3.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	219	30	17	53	14	10	72	1477	197	9	1311	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		5073	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.77	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		3890	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	231	32	18	56	15	11	76	1555	207	9	1380	122
RTOR Reduction (vph)	0	0	15	0	0	10	0	0	71	0	0	47
Lane Group Flow (vph)	231	32	3	56	15	1	0	1631	136	9	1380	75
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Prot		Perm
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases			4			8	2		2			6
Actuated Green, G (s)	14.4	17.3	17.3	4.6	7.5	7.5		53.4	53.4	0.6	59.0	59.0
Effective Green, g (s)	14.4	17.3	17.3	4.6	7.5	7.5		53.4	53.4	0.6	59.0	59.0
Actuated g/C Ratio	0.15	0.18	0.18	0.05	0.08	0.08		0.56	0.56	0.01	0.62	0.62
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	266	336	286	85	146	124		2166	881	11	3128	974
v/s Ratio Prot	c0.13	c0.02		0.03	0.01					0.01	c0.27	
v/s Ratio Perm			0.00			0.00		c0.42	0.09			0.05
v/c Ratio	0.87	0.10	0.01	0.66	0.10	0.01		0.75	0.15	0.82	0.44	0.08
Uniform Delay, d1	39.8	32.8	32.3	44.9	41.1	40.8		16.2	10.3	47.6	9.7	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.5	0.1	0.0	16.9	0.3	0.0		1.5	0.1	167.9	0.1	0.0
Delay (s)	64.3	32.9	32.3	61.8	41.4	40.8		17.7	10.4	215.5	9.8	7.5
Level of Service	E	C	C	E	D	D		B	B	F	A	A
Approach Delay (s)		58.7			55.3			16.9			10.9	
Approach LOS		E			E			B			B	

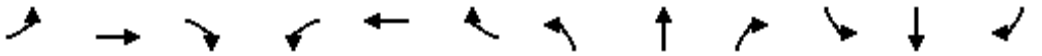
Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	58	64	250	107	402	44	685	38	184	769	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1562	1770	1863	1562	1770	3539	1546	1770	3539	1546
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1562	1770	1863	1562	1770	3539	1546	1770	3539	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	61	67	263	113	423	46	721	40	194	809	43
RTOR Reduction (vph)	0	0	56	0	0	262	0	0	27	0	0	26
Lane Group Flow (vph)	24	61	11	263	113	161	46	721	13	194	809	17
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.6	10.5	10.5	8.5	17.4	17.4	4.8	21.3	21.3	9.6	26.1	26.1
Effective Green, g (s)	1.6	10.5	10.5	8.5	17.4	17.4	4.8	21.3	21.3	9.6	26.1	26.1
Actuated g/C Ratio	0.02	0.16	0.16	0.13	0.26	0.26	0.07	0.32	0.32	0.15	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	43	297	249	228	492	412	129	1144	500	258	1402	612
v/s Ratio Prot	0.01	0.03		c0.15	0.06		0.03	0.20		c0.11	c0.23	
v/s Ratio Perm			0.01			c0.10			0.01			0.01
v/c Ratio	0.56	0.21	0.04	1.15	0.23	0.39	0.36	0.63	0.03	0.75	0.58	0.03
Uniform Delay, d1	31.8	24.1	23.4	28.7	19.0	19.9	29.1	19.0	15.2	27.0	15.6	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.8	0.3	0.1	107.3	0.2	0.6	1.7	1.1	0.0	11.7	0.6	0.0
Delay (s)	46.6	24.4	23.5	136.0	19.2	20.5	30.8	20.1	15.2	38.7	16.2	12.2
Level of Service	D	C	C	F	B	C	C	C	B	D	B	B
Approach Delay (s)		27.5			58.3			20.5			20.2	
Approach LOS		C			E			C			C	

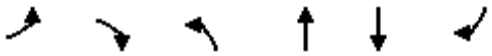
Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



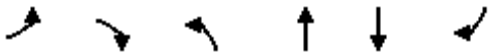
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	18	60	121	8	0	153	745	108	0	906	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	4.0	4.0		3.0	5.0	6.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00		0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1593	1676	1425	1593	1676		1593	3185	1425		3185	1425
Flt Permitted	0.95	1.00	1.00	0.75	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1593	1676	1425	1249	1676		1593	3185	1425		3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	19	63	127	8	0	161	784	114	0	954	95
RTOR Reduction (vph)	0	0	44	0	0	0	0	0	46	0	0	53
Lane Group Flow (vph)	45	19	19	127	8	0	161	784	68	0	954	42
Turn Type	Prot		Perm	Perm		Perm	Prot		Perm	Perm		Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Actuated Green, G (s)	4.6	25.5	25.5	16.9	16.9		10.9	53.1	53.1		38.2	38.2
Effective Green, g (s)	5.6	25.5	26.5	16.9	16.9		11.9	54.1	53.1		39.2	39.2
Actuated g/C Ratio	0.06	0.29	0.30	0.19	0.19		0.13	0.61	0.60		0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.7	4.7		4.7	4.7
Lane Grp Cap (vph)	101	482	426	238	320		214	1945	854		1409	630
v/s Ratio Prot	c0.03	0.01			0.00		c0.10	0.25			c0.30	
v/s Ratio Perm			0.01	c0.10					0.05			0.03
v/c Ratio	0.45	0.04	0.04	0.53	0.03		0.75	0.40	0.08		0.68	0.07
Uniform Delay, d1	40.0	22.7	22.1	32.3	29.2		36.9	8.9	7.5		19.7	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	0.0	0.0	1.2	0.0		12.4	0.3	0.1		1.6	0.1
Delay (s)	41.1	22.7	22.1	33.5	29.2		49.3	9.2	7.5		21.3	14.3
Level of Service	D	C	C	C	C		D	A	A		C	B
Approach Delay (s)		28.9			33.2			15.1			20.6	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



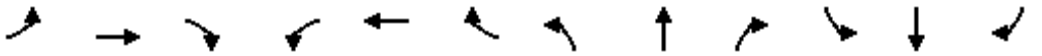
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	29	121	373	893	929	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	127	393	940	978	55
RTOR Reduction (vph)	0	114	0	0	0	33
Lane Group Flow (vph)	31	13	393	940	978	22
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	6.9	6.9	19.8	52.2	27.4	27.4
Effective Green, g (s)	6.9	6.9	19.8	52.2	27.4	27.4
Actuated g/C Ratio	0.10	0.10	0.29	0.76	0.40	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	158	507	2673	1403	628
v/s Ratio Prot	c0.02		c0.22	0.27	c0.28	
v/s Ratio Perm		0.01				0.01
v/c Ratio	0.18	0.08	0.78	0.35	0.70	0.03
Uniform Delay, d1	28.5	28.2	22.6	2.8	17.4	12.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	7.3	0.1	1.5	0.0
Delay (s)	29.0	28.4	29.9	2.9	18.9	12.8
Level of Service	C	C	C	A	B	B
Approach Delay (s)	28.5			10.9	18.6	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	116	81	218	1297	1216	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	122	85	229	1365	1280	186
RTOR Reduction (vph)	0	72	0	0	0	89
Lane Group Flow (vph)	122	13	229	1365	1280	97
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.9	8.9	11.0	45.0	30.0	30.0
Effective Green, g (s)	9.9	9.9	12.0	48.4	33.4	33.4
Actuated g/C Ratio	0.15	0.15	0.19	0.76	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	274	245	332	2681	1850	827
v/s Ratio Prot	c0.07		c0.13	0.39	c0.36	
v/s Ratio Perm		0.01				0.06
v/c Ratio	0.45	0.05	0.69	0.51	0.69	0.12
Uniform Delay, d1	24.5	23.0	24.2	3.1	11.4	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	4.7	0.3	1.4	0.1
Delay (s)	24.9	23.0	28.9	3.4	12.8	7.9
Level of Service	C	C	C	A	B	A
Approach Delay (s)	24.2			7.0	12.2	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	8.6
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

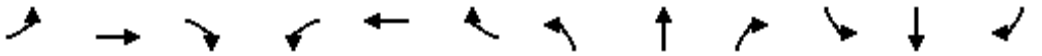


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	117	36	12	67	154	165	27	1243	36	39	959	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9	3.7	3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	123	38	13	71	162	174	28	1308	38	41	1009	288
RTOR Reduction (vph)	0	0	11	0	0	151	0	0	19	0	0	142
Lane Group Flow (vph)	123	38	2	71	162	23	28	1308	19	41	1009	146
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	9.4	9.4	9.4	8.6	8.6	8.6	2.7	33.7	33.7	4.1	35.1	35.1
Effective Green, g (s)	11.0	11.0	10.4	10.2	10.2	10.2	3.7	37.1	37.1	5.1	38.5	38.5
Actuated g/C Ratio	0.14	0.14	0.14	0.13	0.13	0.13	0.05	0.49	0.49	0.07	0.51	0.51
Clearance Time (s)	4.9	4.9	4.9	5.3	5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1	2.0	2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	256	270	217	238	250	212	86	1728	773	119	1793	802
v/s Ratio Prot	c0.07	0.02		0.04	c0.09		0.02	c0.37		c0.02	0.29	
v/s Ratio Perm			0.00			0.01			0.01			0.09
v/c Ratio	0.48	0.14	0.01	0.30	0.65	0.11	0.33	0.76	0.02	0.34	0.56	0.18
Uniform Delay, d1	29.9	28.4	28.3	29.7	31.2	28.9	34.9	15.8	10.1	33.9	12.9	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.2	0.0	0.3	4.3	0.1	0.8	2.3	0.0	0.6	0.6	0.2
Delay (s)	31.3	28.6	28.4	29.9	35.5	29.0	35.8	18.1	10.1	34.5	13.6	10.4
Level of Service	C	C	C	C	D	C	D	B	B	C	B	B
Approach Delay (s)		30.5			31.7			18.2			13.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	31	26	1714	62	37	1223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1703		5085	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1703		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	27	1804	65	39	1287
RTOR Reduction (vph)	25	0	0	24	0	0
Lane Group Flow (vph)	35	0	1804	41	39	1287
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Actuated Green, G (s)	5.1		40.0	40.0	2.8	47.8
Effective Green, g (s)	5.1		40.0	40.0	2.8	47.8
Actuated g/C Ratio	0.08		0.64	0.64	0.04	0.76
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	138		3234	1007	79	3864
v/s Ratio Prot	c0.02		c0.35		0.02	c0.25
v/s Ratio Perm				0.03		
v/c Ratio	0.25		0.56	0.04	0.49	0.33
Uniform Delay, d1	27.1		6.5	4.3	29.4	2.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0		0.2	0.0	4.8	0.1
Delay (s)	28.1		6.7	4.3	34.1	2.5
Level of Service	C		A	A	C	A
Approach Delay (s)	28.1		6.6			3.4
Approach LOS	C		A			A

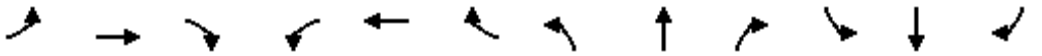
Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	4	242	18	2	15	28	1619	44	37	1115	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1567		1770	1595		1770	5085	1547	1770	5085	1547
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1567		1770	1595		1770	5085	1547	1770	5085	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	143	4	255	19	2	16	29	1704	46	39	1174	104
RTOR Reduction (vph)	0	151	0	0	15	0	0	0	19	0	0	50
Lane Group Flow (vph)	143	108	0	19	3	0	29	1704	27	39	1174	54
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	9.1	12.6		0.5	4.0		1.6	33.4	33.4	1.3	33.1	33.1
Effective Green, g (s)	9.1	12.6		0.5	4.0		1.6	33.4	33.4	1.3	33.1	33.1
Actuated g/C Ratio	0.14	0.20		0.01	0.06		0.03	0.52	0.52	0.02	0.52	0.52
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	309		14	100		44	2662	810	36	2638	803
v/s Ratio Prot	c0.08	c0.07		0.01	0.00		0.02	c0.34		c0.02	0.23	
v/s Ratio Perm									0.02			0.03
v/c Ratio	0.57	0.35		1.36	0.03		0.66	0.64	0.03	1.08	0.45	0.07
Uniform Delay, d1	25.5	22.1		31.6	28.1		30.8	10.9	7.4	31.2	9.6	7.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.7		371.9	0.1		30.4	1.2	0.1	176.0	0.5	0.2
Delay (s)	28.4	22.8		403.5	28.2		61.2	12.1	7.4	207.2	10.1	7.8
Level of Service	C	C		F	C		E	B	A	F	B	A
Approach Delay (s)		24.8			220.9			12.8			15.8	
Approach LOS		C			F			B			B	

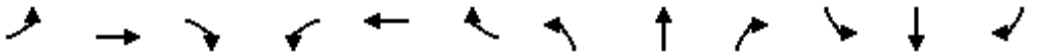
Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



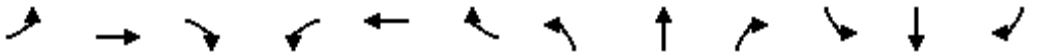
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	11	80	67	10	0	465	0	168	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0		5.0			
Lane Util. Factor		1.00	1.00		1.00		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (prot)		1863	1583		1785		1770		1583			
Flt Permitted		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (perm)		1863	1583		1785		1770		1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	12	84	71	11	0	489	0	177	0	0	0
RTOR Reduction (vph)	0	0	76	0	0	0	0	0	74	0	0	0
Lane Group Flow (vph)	0	12	8	0	82	0	489	0	103	0	0	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		7.0	7.0		8.6		29.8		42.7			
Effective Green, g (s)		7.0	7.0		8.6		29.8		42.7			
Actuated g/C Ratio		0.10	0.10		0.12		0.41		0.58			
Clearance Time (s)		5.0	5.0		5.0		5.0		5.0			
Vehicle Extension (s)		3.0	3.0		3.0		3.0		3.0			
Lane Grp Cap (vph)		178	151		209		720		922			
v/s Ratio Prot		c0.01			c0.05		c0.28					
v/s Ratio Perm			0.01						c0.07			
v/c Ratio		0.07	0.05		0.39		0.68		0.11			
Uniform Delay, d1		30.2	30.1		29.9		17.8		6.8			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.2	0.1		1.2		2.6		0.1			
Delay (s)		30.3	30.3		31.2		20.4		6.9			
Level of Service		C	C		C		C		A			
Approach Delay (s)		30.3			31.2			16.8			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



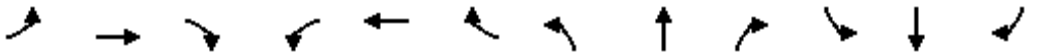
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	16	168	16	310	341	159	285	55	2	133	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1836	1583		1858	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.90	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1671	1583		1841	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	17	177	17	326	359	167	300	58	2	140	13
RTOR Reduction (vph)	0	0	117	0	0	237	0	0	37	0	0	10
Lane Group Flow (vph)	0	24	60	0	343	122	167	300	21	2	140	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		17.6	17.6		17.6	17.6	7.6	18.4	18.4	1.0	11.8	11.8
Effective Green, g (s)		17.6	17.6		17.6	17.6	7.6	18.4	18.4	1.0	11.8	11.8
Actuated g/C Ratio		0.34	0.34		0.34	0.34	0.15	0.35	0.35	0.02	0.23	0.23
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		566	536		623	536	259	1252	560	34	803	359
v/s Ratio Prot							c0.09	c0.08		0.00	0.04	
v/s Ratio Perm		0.01	0.04		c0.19	0.08			0.01			0.00
v/c Ratio		0.04	0.11		0.55	0.23	0.64	0.24	0.04	0.06	0.17	0.01
Uniform Delay, d1		11.5	11.8		14.0	12.3	20.9	11.9	11.0	25.0	16.2	15.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.0	0.1		1.1	0.2	5.4	0.1	0.0	0.7	0.1	0.0
Delay (s)		11.6	11.9		15.0	12.5	26.3	12.0	11.0	25.8	16.3	15.6
Level of Service		B	B		B	B	C	B	B	C	B	B
Approach Delay (s)		11.9			13.8			16.4			16.3	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	2	186	0	103	20	398	715	0	31	808	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1586			1863	1583	1770	3539		1770	3539	1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1586			1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	92	2	196	0	108	21	419	753	0	33	851	129
RTOR Reduction (vph)	0	149	0	0	0	18	0	0	0	0	0	74
Lane Group Flow (vph)	92	49	0	0	108	3	419	753	0	33	851	55
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	5.3	18.8			9.5	9.5	21.8	45.4		1.8	25.4	25.4
Effective Green, g (s)	5.3	18.8			9.5	9.5	21.8	45.4		1.8	25.4	25.4
Actuated g/C Ratio	0.07	0.24			0.12	0.12	0.28	0.58		0.02	0.33	0.33
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	120	382			227	193	495	2060		41	1152	515
v/s Ratio Prot	c0.05	0.03			c0.06		c0.24	0.21		0.02	c0.24	
v/s Ratio Perm						0.00						0.03
v/c Ratio	0.77	0.13			0.48	0.01	0.85	0.37		0.80	0.74	0.11
Uniform Delay, d1	35.7	23.2			31.9	30.1	26.5	8.7		37.9	23.4	18.4
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	24.9	0.2			1.6	0.0	12.6	0.1		69.0	2.5	0.1
Delay (s)	60.6	23.3			33.5	30.2	39.1	8.8		106.9	25.9	18.5
Level of Service	E	C			C	C	D	A		F	C	B
Approach Delay (s)		35.2			33.0			19.6			27.6	
Approach LOS		D			C			B			C	

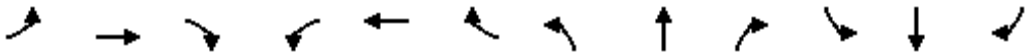
Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	78.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	1	11	259	5	257	23	455	64	34	733	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1778	1562	1770	1863	1562	1770	3539	1547	1770	3539	1547
Flt Permitted		0.78	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1459	1562	1770	1863	1562	1770	3539	1547	1770	3539	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	1	12	273	5	271	24	479	67	36	772	63
RTOR Reduction (vph)	0	0	11	0	0	198	0	0	42	0	0	39
Lane Group Flow (vph)	0	24	1	273	5	73	24	479	25	36	772	24
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Perm		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Actuated Green, G (s)		5.0	5.0	17.0	17.0	17.0	1.1	23.6	23.6	1.7	24.2	24.2
Effective Green, g (s)		5.0	5.0	17.0	17.0	17.0	1.1	23.6	23.6	1.7	24.2	24.2
Actuated g/C Ratio		0.08	0.08	0.27	0.27	0.27	0.02	0.37	0.37	0.03	0.38	0.38
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		115	123	475	500	419	31	1319	577	48	1353	591
v/s Ratio Prot				c0.15	0.00		0.01	0.14		c0.02	c0.22	
v/s Ratio Perm		c0.02	0.00			0.05			0.02			0.02
v/c Ratio		0.21	0.01	0.57	0.01	0.17	0.77	0.36	0.04	0.75	0.57	0.04
Uniform Delay, d1		27.3	26.9	20.0	17.0	17.8	31.0	14.4	12.7	30.6	15.4	12.3
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.9	0.0	1.7	0.0	0.2	73.6	0.2	0.0	48.1	0.6	0.0
Delay (s)		28.2	26.9	21.7	17.0	18.0	104.6	14.6	12.7	78.7	16.0	12.3
Level of Service		C	C	C	B	B	F	B	B	E	B	B
Approach Delay (s)		27.8			19.8			18.1			18.3	
Approach LOS		C			B			B			B	

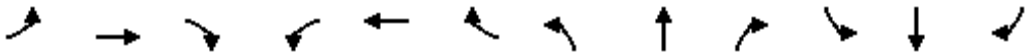
Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



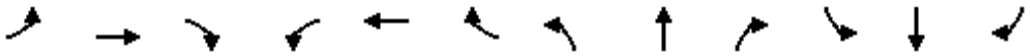
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	0	35	9	3	22	29	626	15	36	1120	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4		3.0	3.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1795	1583	1770	3527		1770	3498	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1795	1583	1770	3527		1770	3498	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	0	37	9	3	23	31	659	16	38	1179	100
RTOR Reduction (vph)	0	0	31	0	0	22	0	1	0	0	4	0
Lane Group Flow (vph)	0	68	6	0	12	1	31	674	0	38	1275	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		10.7	10.7		2.9	2.9	2.4	41.2		4.1	42.9	
Effective Green, g (s)		11.7	11.7		3.9	3.9	3.4	43.5		5.1	45.2	
Actuated g/C Ratio		0.15	0.15		0.05	0.05	0.04	0.57		0.07	0.59	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		270	242		91	81	79	2003		118	2064	
v/s Ratio Prot		c0.04			c0.01		c0.02	0.19		0.02	c0.36	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.25	0.02		0.13	0.01	0.39	0.34		0.32	0.62	
Uniform Delay, d1		28.6	27.6		34.7	34.5	35.6	8.8		34.1	10.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.2	0.0	1.2	0.1		0.6	0.6	
Delay (s)		28.8	27.6		35.0	34.6	36.8	9.0		34.7	10.7	
Level of Service		C	C		C	C	D	A		C	B	
Approach Delay (s)		28.4			34.7			10.2			11.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



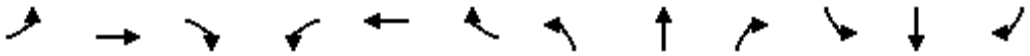
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	16	33	23	4	18	29	659	25	15	1078	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.95		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1792	1583		1717		1770	3520		1770	3507	
Flt Permitted		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1792	1583		1717		1770	3520		1770	3507	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	66	17	35	24	4	19	31	694	26	16	1135	74
RTOR Reduction (vph)	0	0	31	0	18	0	0	2	0	0	4	0
Lane Group Flow (vph)	0	83	4	0	29	0	31	718	0	16	1205	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		8.6	8.6		4.6		1.6	37.6		0.8	36.8	
Effective Green, g (s)		8.6	8.6		4.6		1.6	37.6		0.8	36.8	
Actuated g/C Ratio		0.12	0.12		0.07		0.02	0.54		0.01	0.53	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		222	196		114		41	1910		20	1862	
v/s Ratio Prot		c0.05			c0.02		c0.02	0.20		0.01	c0.34	
v/s Ratio Perm			0.00									
v/c Ratio		0.37	0.02		0.26		0.76	0.38		0.80	0.65	
Uniform Delay, d1		27.9	26.7		30.7		33.7	9.1		34.2	11.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		0.4		50.4	0.1		105.9	0.8	
Delay (s)		28.3	26.7		31.2		84.0	9.3		140.0	12.4	
Level of Service		C	C		C		F	A		F	B	
Approach Delay (s)		27.8			31.2			12.3			14.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	17.7
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	5	111	13	11	7	312	744	22	13	1084	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1788	1583		1814	1583	1770	3524		1770	3520	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1788	1583		1814	1583	1770	3524		1770	3520	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	5	117	14	12	7	328	783	23	14	1141	43
RTOR Reduction (vph)	0	0	105	0	0	6	0	2	0	0	3	0
Lane Group Flow (vph)	0	31	12	0	26	1	328	804	0	14	1181	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		6.6	6.6		5.0	5.0	15.2	44.2		0.9	29.9	
Effective Green, g (s)		7.6	7.6		6.0	6.0	16.2	46.9		1.9	32.6	
Actuated g/C Ratio		0.10	0.10		0.08	0.08	0.22	0.63		0.03	0.44	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		183	162		146	128	385	2221		45	1542	
v/s Ratio Prot		c0.02			c0.01		c0.19	0.23		0.01	c0.34	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.17	0.07		0.18	0.00	0.85	0.36		0.31	0.77	
Uniform Delay, d1		30.5	30.2		31.9	31.5	27.9	6.6		35.6	17.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.2		0.6	0.0	15.9	0.1		1.4	2.4	
Delay (s)		31.0	30.4		32.5	31.5	43.8	6.7		37.0	20.1	
Level of Service		C	C		C	C	D	A		D	C	
Approach Delay (s)		30.5			32.3			17.4			20.3	
Approach LOS		C			C			B			C	

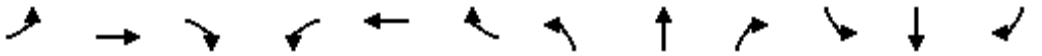
Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	13	28	91	16	469	47	1112	17	135	1476	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1800	1527	1681	1710	1583	1770	3528		1770	3495	
Flt Permitted		0.97	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1800	1527	1681	1710	1583	1770	3528		1770	3495	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	14	29	96	17	494	49	1171	18	142	1554	97
RTOR Reduction (vph)	0	0	26	0	0	326	0	0	0	0	3	0
Lane Group Flow (vph)	0	47	3	56	57	168	49	1189	0	142	1648	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		9.5	9.5	14.3	14.3	14.3	4.5	50.4		10.4	56.3	
Effective Green, g (s)		10.5	10.5	15.3	15.3	15.3	6.5	52.4		12.4	58.3	
Actuated g/C Ratio		0.10	0.10	0.15	0.15	0.15	0.06	0.51		0.12	0.56	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		182	155	248	253	234	111	1784		212	1967	
v/s Ratio Prot		c0.03		0.03	0.03		0.03	0.34		c0.08	c0.47	
v/s Ratio Perm			0.00			c0.11						
v/c Ratio		0.26	0.02	0.23	0.23	0.72	0.44	0.67		0.67	0.84	
Uniform Delay, d1		43.0	41.9	38.9	38.9	42.1	46.8	19.1		43.6	18.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.0	0.3	0.3	9.3	1.0	1.0		6.1	3.4	
Delay (s)		43.5	41.9	39.3	39.3	51.4	47.8	20.1		49.7	22.2	
Level of Service		D	D	D	D	D	D	C		D	C	
Approach Delay (s)		42.9			49.1			21.2			24.3	
Approach LOS		D			D			C			C	

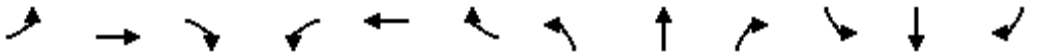
Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	103.6	Sum of lost time (s)	9.3
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



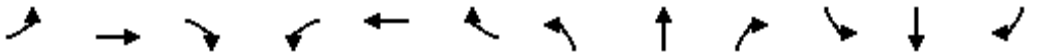
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	0	42	13	0	22	50	1084	33	37	1489	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	0	44	14	0	23	53	1141	35	39	1567	5
RTOR Reduction (vph)	0	0	39	0	0	22	0	2	0	0	0	1
Lane Group Flow (vph)	36	0	5	14	0	1	53	1174	0	39	1567	4
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	10.9		10.9	4.7		4.7	4.6	54.7		4.1	54.2	54.2
Effective Green, g (s)	10.9		10.9	5.7		5.7	4.6	55.7		5.1	55.2	54.2
Actuated g/C Ratio	0.12		0.12	0.06		0.06	0.05	0.60		0.06	0.60	0.59
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	209		187	110		98	88	2131		98	2121	932
v/s Ratio Prot	c0.02			c0.01			c0.03	0.33		0.02	c0.44	
v/s Ratio Perm			0.00			0.00						0.00
v/c Ratio	0.17		0.03	0.13		0.01	0.60	0.55		0.40	0.74	0.00
Uniform Delay, d1	36.5		35.9	40.8		40.6	42.9	10.8		42.0	13.3	7.8
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1		0.0	0.2		0.0	7.7	0.5		1.0	1.6	0.0
Delay (s)	36.7		35.9	41.0		40.6	50.6	11.2		43.0	14.8	7.8
Level of Service	D		D	D		D	D	B		D	B	A
Approach Delay (s)		36.3			40.8			12.9			15.5	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	92.1	Sum of lost time (s)	15.7
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



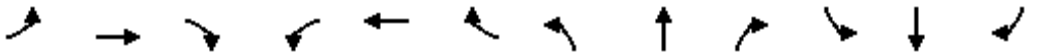
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	530	6	316	184	6	97	103	1157	59	36	1146	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	558	6	333	194	6	102	108	1218	62	38	1206	178
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	106
Lane Group Flow (vph)	285	279	333	194	6	102	108	1218	62	38	1206	72
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	16.3	16.3	76.7	9.8	9.8	76.7	5.0	28.6	76.7	4.0	27.6	27.6
Effective Green, g (s)	17.3	17.3	76.7	10.8	10.8	76.7	6.0	32.0	76.7	5.0	31.0	31.0
Actuated g/C Ratio	0.23	0.23	1.00	0.14	0.14	1.00	0.08	0.42	1.00	0.07	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	379	381	1583	249	262	1583	138	2122	1583	115	2055	640
v/s Ratio Prot	c0.17	0.17		c0.11	0.00		c0.06	c0.24		0.02	0.24	
v/s Ratio Perm			c0.21			0.06			0.04			0.05
v/c Ratio	0.75	0.73	0.21	0.78	0.02	0.06	0.78	0.57	0.04	0.33	0.59	0.11
Uniform Delay, d1	27.7	27.6	0.0	31.8	28.4	0.0	34.7	17.1	0.0	34.3	17.8	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	6.7	0.3	14.2	0.0	0.1	22.8	0.5	0.0	1.7	0.6	0.1
Delay (s)	35.5	34.3	0.3	46.0	28.4	0.1	57.6	17.7	0.0	35.9	18.5	14.4
Level of Service	D	C	A	D	C	A	E	B	A	D	B	B
Approach Delay (s)		22.0			30.2			20.0			18.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



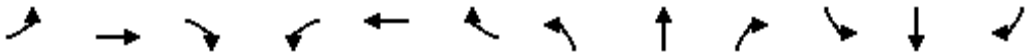
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	3	1	136	3	192	5	910	38	66	1987	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0		3.0	-0.4	3.0	4.0	0.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1688	1583	1770	1587		1770	3539	1583	1770	5085	
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.24	1.00	
Satd. Flow (perm)	1681	1688	1583	1770	1587		1770	3539	1583	451	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	3	1	143	3	202	5	958	40	69	2092	1
RTOR Reduction (vph)	0	0	1	0	72	0	0	0	18	0	0	0
Lane Group Flow (vph)	88	88	0	143	133	0	5	958	22	69	2093	0
Turn Type	Split		Perm	Split			Prot		Perm	Perm		
Protected Phases	4	4		8	8		5	2			6	
Permitted Phases			4						2	6		
Actuated Green, G (s)	7.8	7.8	7.8	10.6	10.6		1.0	37.0	37.0	31.0	31.0	
Effective Green, g (s)	8.8	7.8	8.8	10.6	10.6		2.0	40.4	37.0	31.0	34.4	
Actuated g/C Ratio	0.13	0.12	0.13	0.16	0.16		0.03	0.60	0.55	0.46	0.51	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0		4.0	3.0	3.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	219	195	207	278	250		53	2121	869	207	2595	
v/s Ratio Prot	c0.05	0.05		0.08	c0.08		0.00	c0.27			c0.41	
v/s Ratio Perm			0.00						0.01	0.15		
v/c Ratio	0.40	0.45	0.00	0.51	0.53		0.09	0.45	0.03	0.33	0.81	
Uniform Delay, d1	26.9	27.8	25.5	26.0	26.1		31.8	7.4	7.0	11.6	13.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	1.7	0.0	1.6	2.2		0.8	0.2	0.0	1.0	1.9	
Delay (s)	28.1	29.5	25.5	27.6	28.3		32.6	7.6	7.0	12.6	15.7	
Level of Service	C	C	C	C	C		C	A	A	B	B	
Approach Delay (s)		28.8			28.0			7.7			15.6	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	8.2
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



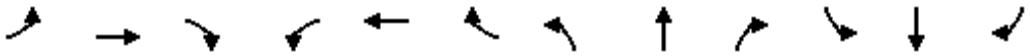
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	9	461	0	4	103	42	779	0	271	1801	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	0.95		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.86	0.85		0.87		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1514	1504		1620		1770	3539		1770	3539	1583
Flt Permitted	0.68	1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1276	1514	1504		1620		1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	9	485	0	4	108	44	820	0	285	1896	71
RTOR Reduction (vph)	0	74	74	0	88	0	0	0	0	0	0	20
Lane Group Flow (vph)	54	173	173	0	24	0	44	820	0	285	1896	51
Turn Type	Perm		Perm				Prot			Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4									6
Actuated Green, G (s)	15.7	15.7	15.7		15.7		3.0	37.2		19.0	53.2	53.2
Effective Green, g (s)	15.7	15.7	15.7		15.7		3.0	37.2		19.0	53.2	53.2
Actuated g/C Ratio	0.18	0.18	0.18		0.18		0.03	0.43		0.22	0.61	0.61
Clearance Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	231	274	272		293		61	1515		387	2167	969
v/s Ratio Prot		0.11			0.01		0.02	0.23		c0.16	c0.54	
v/s Ratio Perm	0.04		c0.12									0.03
v/c Ratio	0.23	0.63	0.64		0.08		0.72	0.54		0.74	0.87	0.05
Uniform Delay, d1	30.5	32.9	33.0		29.6		41.5	18.5		31.6	14.1	6.8
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	4.7	4.8		0.1		34.1	0.4		7.1	4.3	0.0
Delay (s)	31.0	37.6	37.8		29.7		75.6	18.9		38.8	18.3	6.8
Level of Service	C	D	D		C		E	B		D	B	A
Approach Delay (s)		37.0			29.7			21.8			20.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	8	60	127	3	18	18	789	359	14	2008	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	2.6		2.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791	1583	1681	1689	1583	1770	4847		1770	5073	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1791	1583	1681	1689	1583	1770	4847		1770	5073	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	8	63	134	3	19	19	831	378	15	2114	36
RTOR Reduction (vph)	0	0	56	0	0	17	0	69	0	0	1	0
Lane Group Flow (vph)	0	40	7	68	69	2	19	1140	0	15	2149	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4						
Actuated Green, G (s)		7.5	7.5	8.5	8.5	8.5	0.9	40.5		0.8	39.4	
Effective Green, g (s)		8.5	8.5	9.5	9.5	9.5	1.9	43.9		1.8	42.8	
Actuated g/C Ratio		0.11	0.11	0.13	0.13	0.13	0.03	0.59		0.02	0.58	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	6.0		3.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2	0.2	2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)		205	181	215	216	202	45	2864		43	2922	
v/s Ratio Prot		c0.02		0.04	c0.04		c0.01	0.24		0.01	c0.42	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.20	0.04	0.32	0.32	0.01	0.42	0.40		0.35	0.74	
Uniform Delay, d1		29.8	29.3	29.4	29.5	28.3	35.7	8.1		35.7	11.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0	0.3	0.3	0.0	2.3	0.1		1.8	1.0	
Delay (s)		30.0	29.3	29.8	29.8	28.3	38.0	8.3		37.5	12.6	
Level of Service		C	C	C	C	C	D	A		D	B	
Approach Delay (s)		29.6			29.6			8.7			12.8	
Approach LOS		C			C			A			B	

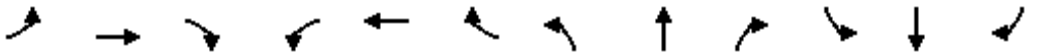
Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	11.6
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	23	187	70	12	35	319	1367	12	8	2188	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.96		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	1526		1787	1583	1770	5076		1770	5036	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1785	1526		1787	1583	1770	5076		1770	5036	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	157	24	197	74	13	37	336	1439	13	8	2303	114
RTOR Reduction (vph)	0	0	171	0	0	35	0	1	0	0	4	0
Lane Group Flow (vph)	0	181	26	0	87	2	336	1451	0	8	2413	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		13.7	13.7		5.0	5.0	24.1	81.4		0.6	58.9	
Effective Green, g (s)		16.0	16.0		7.3	7.3	25.1	84.4		1.6	61.9	
Actuated g/C Ratio		0.13	0.13		0.06	0.06	0.21	0.70		0.01	0.52	
Clearance Time (s)		5.3	5.3		4.0	4.0	3.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		238	203		109	96	370	3570		24	2598	
v/s Ratio Prot		c0.10			c0.05		c0.19	0.29		0.00	c0.48	
v/s Ratio Perm			0.02			0.00						
v/c Ratio		0.76	0.13		0.80	0.02	0.91	0.41		0.33	0.93	
Uniform Delay, d1		50.2	45.9		55.6	53.0	46.3	7.4		58.7	27.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		12.1	0.1		30.3	0.0	24.7	0.2		3.0	7.3	
Delay (s)		62.2	46.0		86.0	53.0	71.0	7.6		61.6	34.3	
Level of Service		E	D		F	D	E	A		E	C	
Approach Delay (s)		53.8			76.1			19.5			34.4	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

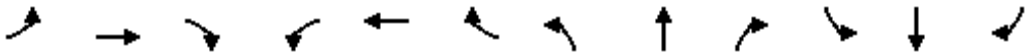
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	387	128	395	1115	177	194	1528	183	255	1635	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1532	1770	5085	1534	3433	5085	1560	3433	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1532	1770	5085	1534	3433	5085	1560	3433	5085	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	157	407	135	416	1174	186	204	1608	193	268	1721	462
RTOR Reduction (vph)	0	0	113	0	0	102	0	0	0	0	0	0
Lane Group Flow (vph)	157	407	22	416	1174	84	204	1608	193	268	1721	462
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	8.7	16.8	16.8	30.5	38.6	38.6	8.6	42.2	120.0	11.1	44.4	120.0
Effective Green, g (s)	9.7	19.8	19.8	31.5	41.6	41.6	9.6	45.2	120.0	12.1	47.4	120.0
Actuated g/C Ratio	0.08	0.17	0.17	0.26	0.35	0.35	0.08	0.38	1.00	0.10	0.39	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	278	584	253	465	1763	532	275	1915	1560	346	2009	1560
v/s Ratio Prot	0.05	0.11		c0.24	c0.23		0.06	0.32		c0.08	c0.34	
v/s Ratio Perm			0.01			0.05			0.12			c0.30
v/c Ratio	0.56	0.70	0.09	0.89	0.67	0.16	0.74	0.84	0.12	0.77	0.86	0.30
Uniform Delay, d1	53.1	47.3	42.5	42.7	33.3	27.1	54.0	34.1	0.0	52.6	33.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	3.8	0.2	18.9	1.0	0.2	9.1	4.6	0.2	9.5	5.0	0.5
Delay (s)	54.7	51.1	42.6	61.5	34.3	27.3	63.1	38.7	0.2	62.1	38.2	0.5
Level of Service	D	D	D	E	C	C	E	D	A	E	D	A
Approach Delay (s)		50.2			39.9			37.5			33.7	
Approach LOS		D			D			D			C	

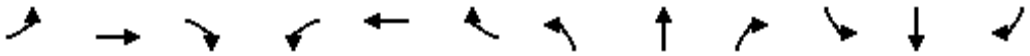
Intersection Summary			
HCM Average Control Delay	38.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1	25	28	1	19	30	1910	41	34	2113	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0	4.7	2.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.91	
Frt		0.93			0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1698			1712		1770	3539	1583	1770	5080	
Flt Permitted		0.88			0.88		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1533			1544		1770	3539	1583	1770	5080	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	1	26	29	1	20	32	2011	43	36	2224	16
RTOR Reduction (vph)	0	23	0	0	18	0	0	0	8	0	1	0
Lane Group Flow (vph)	0	30	0	0	32	0	32	2011	35	36	2239	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		6.5			6.5		1.5	48.5	48.5	1.5	47.5	
Effective Green, g (s)		7.5			7.5		2.5	51.2	49.5	2.5	50.2	
Actuated g/C Ratio		0.11			0.11		0.04	0.74	0.72	0.04	0.73	
Clearance Time (s)		4.0			4.0		4.0	5.7	5.7	3.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8	3.8	2.0	3.8	
Lane Grp Cap (vph)		166			167		64	2618	1132	64	3685	
v/s Ratio Prot							0.02	c0.57		c0.02	0.44	
v/s Ratio Perm		0.02			c0.02				0.02			
v/c Ratio		0.18			0.19		0.50	0.77	0.03	0.56	0.61	
Uniform Delay, d1		28.1			28.1		32.7	5.4	2.9	32.8	4.7	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5			0.6		2.2	1.5	0.0	6.6	0.3	
Delay (s)		28.6			28.7		35.0	6.9	2.9	39.4	5.0	
Level of Service		C			C		C	A	A	D	A	
Approach Delay (s)		28.6			28.7			7.2			5.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	5.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



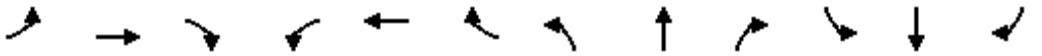
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	71	154	137	349	105	422	2211	85	95	2057	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5071	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5071	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	91	75	162	144	367	111	444	2327	89	100	2165	38
RTOR Reduction (vph)	0	0	138	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	91	75	24	144	367	111	444	2327	89	100	2202	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	8.4	15.0	15.0	7.7	14.3	120.0	17.4	71.7	120.0	5.9	60.2	
Effective Green, g (s)	9.4	18.0	18.0	8.7	17.3	120.0	18.4	74.7	120.0	6.9	63.2	
Actuated g/C Ratio	0.08	0.15	0.15	0.07	0.14	1.00	0.15	0.62	1.00	0.06	0.53	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	139	531	232	249	510	1562	526	3165	1562	197	2671	
v/s Ratio Prot	c0.05	0.02		0.04	c0.10		c0.13	0.46		0.03	c0.43	
v/s Ratio Perm			0.02			c0.07			0.06			
v/c Ratio	0.65	0.14	0.10	0.58	0.72	0.07	0.84	0.74	0.06	0.51	0.82	
Uniform Delay, d1	53.7	44.3	44.0	53.9	49.0	0.0	49.4	15.8	0.0	54.9	23.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.2	0.2	0.3	2.0	5.1	0.1	11.4	1.6	0.1	0.8	2.2	
Delay (s)	61.9	44.4	44.3	55.9	54.1	0.1	60.8	17.3	0.1	55.7	26.0	
Level of Service	E	D	D	E	D	A	E	B	A	E	C	
Approach Delay (s)		49.2			44.9			23.5			27.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	39	265	2486	200	280	2009
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	2.0	2.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	279	2617	211	295	2115
RTOR Reduction (vph)	0	0	0	29	0	0
Lane Group Flow (vph)	41	279	2617	182	295	2115
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	7.5	93.9	54.2	54.2	17.2	76.4
Effective Green, g (s)	8.5	93.9	56.2	56.2	18.2	78.4
Actuated g/C Ratio	0.09	1.00	0.60	0.60	0.19	0.83
Clearance Time (s)	6.0		6.0	6.0	3.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	160	1583	3043	947	343	4246
v/s Ratio Prot	0.02		c0.51		c0.17	0.42
v/s Ratio Perm		c0.18		0.12		
v/c Ratio	0.26	0.18	0.86	0.19	0.86	0.50
Uniform Delay, d1	39.8	0.0	15.6	8.6	36.6	2.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.2	2.8	0.1	18.6	0.1
Delay (s)	40.6	0.2	18.4	8.7	55.2	2.3
Level of Service	D	A	B	A	E	A
Approach Delay (s)	5.4		17.6			8.8
Approach LOS	A		B			A

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

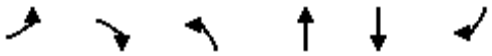


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	24	48	442	96	741	135	1287	256	361	1341	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.88	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1563	1504	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1563	1504	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	25	51	465	101	780	142	1355	269	380	1412	11
RTOR Reduction (vph)	0	0	46	0	115	305	0	0	140	0	0	4
Lane Group Flow (vph)	7	25	5	465	337	124	142	1355	129	380	1412	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.2	8.1	8.1	15.7	22.6	22.6	9.0	39.1	39.1	12.0	42.1	42.1
Effective Green, g (s)	1.2	8.1	8.1	15.7	22.6	22.6	9.0	39.1	39.1	12.0	42.1	42.1
Actuated g/C Ratio	0.01	0.09	0.09	0.17	0.25	0.25	0.10	0.43	0.43	0.13	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	45	166	141	593	389	374	175	1522	681	453	1639	733
v/s Ratio Prot	0.00	0.01		c0.14	c0.22		0.08	0.38		c0.11	c0.40	
v/s Ratio Perm			0.00			0.08			0.08			0.00
v/c Ratio	0.16	0.15	0.03	0.78	0.87	0.33	0.81	0.89	0.19	0.84	0.86	0.01
Uniform Delay, d1	44.3	38.2	37.8	36.0	32.7	28.0	40.1	23.9	16.1	38.5	21.8	13.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.4	0.1	6.7	17.9	0.5	24.0	8.2	0.6	12.8	6.2	0.0
Delay (s)	46.0	38.6	37.9	42.7	50.6	28.5	64.1	32.1	16.7	51.3	28.0	13.2
Level of Service	D	D	D	D	D	C	E	C	B	D	C	B
Approach Delay (s)		38.8			40.8			32.4			32.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	34.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

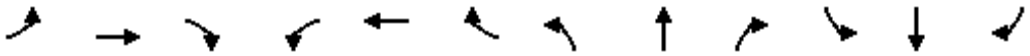
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	112	37	572	139	63	1240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	118	39	602	146	66	1305
RTOR Reduction (vph)	0	31	0	63	0	0
Lane Group Flow (vph)	118	8	602	83	66	1305
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.3	9.3	27.3	27.3	3.8	34.1
Effective Green, g (s)	10.8	10.8	30.3	30.3	4.8	37.1
Actuated g/C Ratio	0.20	0.20	0.57	0.57	0.09	0.69
Clearance Time (s)	4.0	4.0	6.0	6.0	3.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	358	320	2008	898	159	2459
v/s Ratio Prot	c0.07		0.17		0.04	c0.37
v/s Ratio Perm		0.00		0.05		
v/c Ratio	0.33	0.02	0.30	0.09	0.42	0.53
Uniform Delay, d1	18.2	17.1	6.0	5.3	23.0	3.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.2	0.1	0.6	0.4
Delay (s)	18.7	17.1	6.2	5.4	23.6	4.3
Level of Service	B	B	A	A	C	A
Approach Delay (s)	18.3		6.0			5.2
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	5.5
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	26	438	192	746	1529	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	3.0	3.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	461	202	785	1609	37
RTOR Reduction (vph)	0	195	0	0	0	16
Lane Group Flow (vph)	27	266	202	785	1609	21
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	16.2	16.2	11.8	61.1	44.3	44.3
Effective Green, g (s)	16.2	16.2	11.8	63.1	46.3	44.3
Actuated g/C Ratio	0.19	0.19	0.14	0.72	0.53	0.51
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	328	294	239	2558	1877	803
v/s Ratio Prot	0.02		c0.11	0.22	c0.45	
v/s Ratio Perm		c0.17				0.01
v/c Ratio	0.08	0.90	0.85	0.31	0.86	0.03
Uniform Delay, d1	29.4	34.8	36.9	4.3	17.7	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	28.9	23.0	0.1	4.1	0.0
Delay (s)	29.5	63.6	59.9	4.4	21.8	10.7
Level of Service	C	E	E	A	C	B
Approach Delay (s)	61.8			15.7	21.5	
Approach LOS	E			B	C	

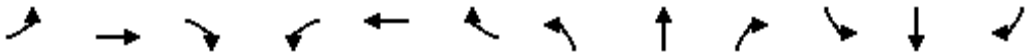
Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	13.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1	8	262	7	293	8	907	70	223	1639	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.92			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1689			1776	1556	1770	3494		1770	3527	
Flt Permitted		0.91			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1561			1344	1556	1770	3494		1770	3527	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1	8	276	7	308	8	955	74	235	1725	35
RTOR Reduction (vph)	0	6	0	0	0	212	0	7	0	0	2	0
Lane Group Flow (vph)	0	8	0	0	283	96	8	1022	0	235	1758	0
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						
Actuated Green, G (s)		16.9			16.9	16.9	1.2	29.3		11.8	39.9	
Effective Green, g (s)		17.9			17.9	17.9	2.2	32.3		12.8	42.9	
Actuated g/C Ratio		0.25			0.25	0.25	0.03	0.45		0.18	0.60	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		390			336	388	54	1574		316	2110	
v/s Ratio Prot							0.00	0.29		c0.13	c0.50	
v/s Ratio Perm		0.01			c0.21	0.06						
v/c Ratio		0.02			0.84	0.25	0.15	0.65		0.74	0.83	
Uniform Delay, d1		20.3			25.6	21.5	33.8	15.3		27.9	11.5	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			16.5	0.1	0.5	1.2		8.0	3.3	
Delay (s)		20.3			42.1	21.6	34.3	16.5		35.9	14.8	
Level of Service		C			D	C	C	B		D	B	
Approach Delay (s)		20.3			31.4			16.6			17.3	
Approach LOS		C			C			B			B	

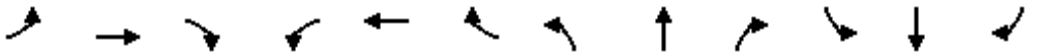
Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	0	31	65	4	18	42	939	7	20	1767	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	1531		1779	1474	1770	3539	1544	1770	3527	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1770	1531		1779	1474	1770	3539	1544	1770	3527	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	0	33	68	4	19	44	988	7	21	1860	38
RTOR Reduction (vph)	0	0	30	0	0	18	0	0	2	0	1	0
Lane Group Flow (vph)	0	57	3	0	72	1	44	988	5	21	1897	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		7.6	7.6		3.2	3.2	3.6	59.5	59.5	2.0	57.9	
Effective Green, g (s)		8.6	8.6		4.2	4.2	4.6	62.5	60.5	3.0	60.9	
Actuated g/C Ratio		0.10	0.10		0.05	0.05	0.05	0.69	0.67	0.03	0.68	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		169	146		83	69	90	2458	1038	59	2387	
v/s Ratio Prot		c0.03			c0.04		c0.02	0.28		0.01	c0.54	
v/s Ratio Perm			0.00			0.00			0.00			
v/c Ratio		0.34	0.02		0.87	0.01	0.49	0.40	0.00	0.36	0.79	
Uniform Delay, d1		38.0	36.9		42.6	40.9	41.6	5.8	4.9	42.6	10.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4	0.0		55.2	0.0	1.5	0.2	0.0	1.3	2.8	
Delay (s)		38.5	36.9		97.8	40.9	43.1	6.1	4.9	43.9	13.0	
Level of Service		D	D		F	D	D	A	A	D	B	
Approach Delay (s)		37.9			85.9			7.6			13.3	
Approach LOS		D			F			A			B	

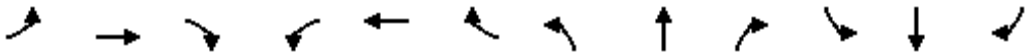
Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	259	0	450	12	4	2	903	695	0	4	1026	813
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1770		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1770		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	273	0	474	13	4	2	951	732	0	4	1080	856
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	369
Lane Group Flow (vph)	136	137	474	13	4	0	951	732	0	4	1080	487
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	11.2	11.2	90.0	4.2	4.2		28.2	55.5		1.4	30.7	30.7
Effective Green, g (s)	13.2	13.2	90.0	6.2	6.2		30.2	57.5		3.4	32.7	32.7
Actuated g/C Ratio	0.15	0.15	1.00	0.07	0.07		0.34	0.64		0.04	0.36	0.36
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	247	247	1478	122	122		1152	2261		67	1286	537
v/s Ratio Prot	0.08	c0.08		0.01	0.00		c0.28	0.21		0.00	0.31	
v/s Ratio Perm			c0.32									c0.33
v/c Ratio	0.55	0.55	0.32	0.11	0.03		0.83	0.32		0.06	0.84	0.91
Uniform Delay, d1	35.6	35.7	0.0	39.3	39.1		27.5	7.4		41.8	26.3	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	2.7	0.6	0.4	0.1		5.0	0.4		0.4	5.0	18.8
Delay (s)	38.3	38.4	0.6	39.7	39.2		32.4	7.8		42.1	31.2	46.0
Level of Service	D	D	A	D	D		C	A		D	C	D
Approach Delay (s)		14.4			39.5			21.7			37.8	
Approach LOS		B			D			C			D	

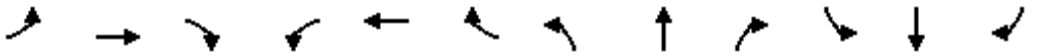
Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1	30	0	3	30	38	1217	0	34	948	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1592			1863	1583	1770	3539		1770	3490	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1592			1863	1583	1770	3539		1770	3490	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	1	32	0	3	32	40	1281	0	36	998	103
RTOR Reduction (vph)	0	28	0	0	0	30	0	0	0	0	5	0
Lane Group Flow (vph)	63	5	0	0	3	2	40	1281	0	36	1096	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	7.9	7.9			4.1	4.1	2.3	38.1		1.3	37.1	
Effective Green, g (s)	7.9	7.9			4.1	4.1	2.3	38.1		1.3	37.1	
Actuated g/C Ratio	0.11	0.11			0.06	0.06	0.03	0.53		0.02	0.52	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	196	176			107	91	57	1888		32	1813	
v/s Ratio Prot	c0.04	0.00			c0.00		c0.02	c0.36		0.02	0.31	
v/s Ratio Perm						0.00						
v/c Ratio	0.32	0.03			0.03	0.02	0.70	0.68		1.12	0.60	
Uniform Delay, d1	29.3	28.3			31.8	31.8	34.2	12.2		35.1	12.0	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.1			0.1	0.1	32.3	1.0		199.2	0.6	
Delay (s)	30.2	28.4			31.9	31.8	66.5	13.2		234.3	12.6	
Level of Service	C	C			C	C	E	B		F	B	
Approach Delay (s)		29.6			31.8			14.8			19.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

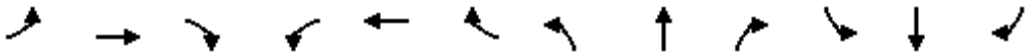


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	2	106	22	1	26	83	844	25	72	1015	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1770	1593		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1770	1593		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	187	2	112	23	1	27	87	888	26	76	1068	116
RTOR Reduction (vph)	0	0	95	0	25	0	0	0	14	0	0	64
Lane Group Flow (vph)	95	94	17	23	3	0	87	888	12	76	1068	52
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.4	11.4	11.4	4.6	4.6		6.9	33.6	33.6	6.4	33.1	33.1
Effective Green, g (s)	11.4	11.4	11.4	4.6	4.6		6.9	33.6	33.6	6.4	33.1	33.1
Actuated g/C Ratio	0.16	0.16	0.16	0.06	0.06		0.09	0.46	0.46	0.09	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	261	262	246	111	100		167	1622	726	155	1598	715
v/s Ratio Prot	c0.06	0.06		c0.01	0.00		c0.05	0.25		0.04	c0.30	
v/s Ratio Perm			0.01						0.01			0.03
v/c Ratio	0.36	0.36	0.07	0.21	0.03		0.52	0.55	0.02	0.49	0.67	0.07
Uniform Delay, d1	27.7	27.7	26.4	32.6	32.2		31.6	14.4	10.8	31.9	15.8	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.0	0.3	0.0		1.4	0.5	0.0	0.9	1.2	0.1
Delay (s)	28.0	28.0	26.5	33.0	32.3		33.0	14.8	10.8	32.8	17.0	11.5
Level of Service	C	C	C	C	C		C	B	B	C	B	B
Approach Delay (s)		27.4			32.6			16.3			17.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	17.3
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

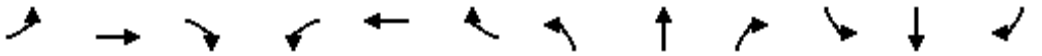
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	8	9	1	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	8	9	1	5	11
RTOR Reduction (vph)	0	7	0	1	0	0
Lane Group Flow (vph)	1	1	9	0	5	11
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	1.8	1.8	1.8	1.8	0.5	7.3
Effective Green, g (s)	1.8	1.8	1.8	1.8	0.5	7.3
Actuated g/C Ratio	0.09	0.09	0.09	0.09	0.03	0.38
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	167	149	176	149	46	712
v/s Ratio Prot	c0.00		c0.00		c0.00	0.01
v/s Ratio Perm		0.00		0.00		
v/c Ratio	0.01	0.01	0.05	0.00	0.11	0.02
Uniform Delay, d1	7.8	7.8	7.9	7.8	9.1	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.1	0.0	1.0	0.0
Delay (s)	7.9	7.9	8.0	7.8	10.1	3.7
Level of Service	A	A	A	A	B	A
Approach Delay (s)	7.9		8.0			5.7
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.04		
Actuated Cycle Length (s)	19.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	1093	64	95	890	29	134	32	19	3	34	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1717	1583		1791	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1717	1583		1791	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1151	67	100	937	31	141	34	20	3	36	14
RTOR Reduction (vph)	0	0	33	0	0	10	0	0	17	0	13	0
Lane Group Flow (vph)	57	1151	34	100	937	21	86	89	3	0	40	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	2.0	28.4	28.4	4.4	30.8	30.8	6.6	6.6	6.6		2.0	
Effective Green, g (s)	4.0	30.4	30.4	5.4	32.8	32.8	7.6	7.6	7.6		4.0	
Actuated g/C Ratio	0.07	0.51	0.51	0.09	0.55	0.55	0.13	0.13	0.13		0.07	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	120	1820	814	162	1964	879	216	221	204		121	
v/s Ratio Prot	0.03	c0.33		c0.06	0.26		0.05	c0.05			c0.02	
v/s Ratio Perm			0.02			0.01			0.00			
v/c Ratio	0.47	0.63	0.04	0.62	0.48	0.02	0.40	0.40	0.01		0.33	
Uniform Delay, d1	26.5	10.3	7.1	25.9	8.0	5.9	23.6	23.7	22.5		26.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.1	0.8	0.0	4.8	0.3	0.0	0.4	0.4	0.0		0.6	
Delay (s)	27.6	11.1	7.2	30.7	8.2	5.9	24.1	24.1	22.5		26.9	
Level of Service	C	B	A	C	A	A	C	C	C		C	
Approach Delay (s)		11.7			10.3			23.9			26.9	
Approach LOS		B			B			C			C	

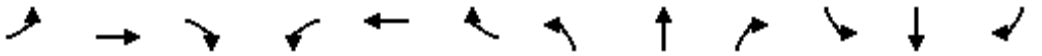
Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	11.7
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	852	222	176	909	38	225	44	115	20	37	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1712	1478	1770	1863	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1712	1478	1770	1863	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	85	897	234	185	957	40	237	46	121	21	39	69
RTOR Reduction (vph)	0	0	136	0	0	22	0	0	109	0	0	60
Lane Group Flow (vph)	85	897	98	185	957	18	140	143	12	21	39	9
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	4.3	19.4	19.4	6.1	21.2	21.2	4.1	4.1	4.1	5.0	5.0	5.0
Effective Green, g (s)	5.3	22.1	22.1	7.1	23.9	23.9	5.1	5.1	5.1	6.0	6.9	6.9
Actuated g/C Ratio	0.10	0.42	0.42	0.13	0.45	0.45	0.10	0.10	0.10	0.11	0.13	0.13
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	177	1478	617	238	1599	668	162	165	142	201	243	193
v/s Ratio Prot	0.05	c0.25		c0.10	c0.27		0.08	c0.08		0.01	c0.02	
v/s Ratio Perm			0.07			0.01			0.01			0.01
v/c Ratio	0.48	0.61	0.16	0.78	0.60	0.03	0.86	0.87	0.08	0.10	0.16	0.05
Uniform Delay, d1	22.5	12.0	9.6	22.1	10.9	8.0	23.6	23.6	21.8	21.0	20.4	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.8	0.2	13.5	0.7	0.0	34.0	33.9	0.1	0.3	0.4	0.1
Delay (s)	23.2	12.8	9.8	35.6	11.6	8.1	57.5	57.5	21.9	21.4	20.9	20.3
Level of Service	C	B	A	D	B	A	E	E	C	C	C	C
Approach Delay (s)		13.0			15.2			46.8			20.6	
Approach LOS		B			B			D			C	

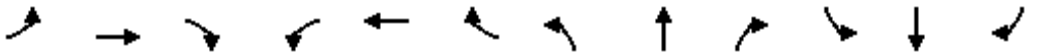
Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	52.9	Sum of lost time (s)	8.7
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



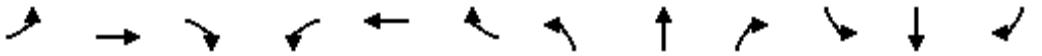
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	912	84	66	827	2	142	40	10	3	17	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		2.0	2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1793	1583		1850	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1793	1583		1850	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	87	960	88	69	871	2	149	42	11	3	18	97
RTOR Reduction (vph)	0	0	56	0	0	1	0	0	7	0	0	91
Lane Group Flow (vph)	87	960	32	69	871	1	0	191	4	0	21	6
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	7.2	31.1	31.1	6.6	30.5	30.5		31.6	31.6		4.7	4.7
Effective Green, g (s)	8.2	33.1	33.1	7.6	32.5	32.5		32.6	32.6		5.7	5.7
Actuated g/C Ratio	0.09	0.37	0.37	0.08	0.36	0.36		0.36	0.36		0.06	0.06
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.0	4.0		3.0	3.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3		3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	161	1302	582	149	1278	572		649	573		117	100
v/s Ratio Prot	0.05	c0.27		0.04	c0.25			c0.11			c0.01	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.54	0.74	0.06	0.46	0.68	0.00		0.29	0.01		0.18	0.06
Uniform Delay, d1	39.1	24.7	18.4	39.3	24.4	18.4		20.5	18.4		39.9	39.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	2.5	0.1	0.8	1.7	0.0		1.2	0.0		0.3	0.1
Delay (s)	41.1	27.1	18.4	40.1	26.1	18.4		21.6	18.4		40.2	39.7
Level of Service	D	C	B	D	C	B		C	B		D	D
Approach Delay (s)		27.5			27.1			21.5			39.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	543	379	57	460	65	421	70	50	61	44	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1708	1583		1810	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1708	1583		1810	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	572	399	60	484	68	443	74	53	64	46	19
RTOR Reduction (vph)	0	0	130	0	0	36	0	0	40	0	0	17
Lane Group Flow (vph)	42	572	269	60	484	32	257	260	13	0	110	2
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	3.0	37.7	58.6	6.2	40.9	40.9	20.9	20.9	20.9		8.2	8.2
Effective Green, g (s)	4.0	39.7	60.6	7.2	42.9	42.9	21.9	21.9	21.9		9.2	9.2
Actuated g/C Ratio	0.04	0.44	0.67	0.08	0.48	0.48	0.24	0.24	0.24		0.10	0.10
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	79	1561	1066	142	1687	755	409	416	385		185	162
v/s Ratio Prot	0.02	c0.16	0.06	c0.03	0.14		c0.15	0.15			c0.06	
v/s Ratio Perm			0.11			0.02			0.01			0.00
v/c Ratio	0.53	0.37	0.25	0.42	0.29	0.04	0.63	0.62	0.03		0.59	0.01
Uniform Delay, d1	42.1	16.8	5.8	39.4	14.3	12.6	30.4	30.4	26.0		38.6	36.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.4	0.2	0.1	0.7	0.4	0.1	3.2	3.1	0.0		3.4	0.0
Delay (s)	45.5	17.0	5.9	40.2	14.7	12.7	33.6	33.4	26.0		42.0	36.3
Level of Service	D	B	A	D	B	B	C	C	C		D	D
Approach Delay (s)		13.8			17.0			32.8			41.2	
Approach LOS		B			B			C			D	

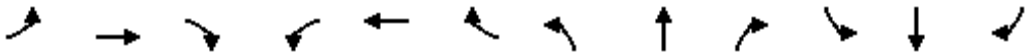
Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	14	35	24	13	4	36	1360	6	7	944	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	2.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1638		3433	1795		1676	4984	1414	1745	5187	1473
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1638		3433	1795		1676	4984	1414	1745	5187	1473
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	194	15	37	25	14	4	38	1432	6	7	994	197
RTOR Reduction (vph)	0	30	0	0	4	0	0	0	3	0	0	98
Lane Group Flow (vph)	194	22	0	25	14	0	38	1432	3	7	994	99
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	10.8	10.3		3.5	4.3		1.6	30.2	30.2	0.9	28.5	28.5
Effective Green, g (s)	11.8	11.3		4.5	5.3		2.6	33.6	33.6	1.9	31.9	31.9
Actuated g/C Ratio	0.19	0.18		0.07	0.08		0.04	0.53	0.53	0.03	0.50	0.50
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	329	293		244	151		69	2650	752	52	2618	743
v/s Ratio Prot	c0.11	0.01		0.01	c0.01		c0.02	c0.29		0.00	0.19	
v/s Ratio Perm									0.00			0.07
v/c Ratio	0.59	0.07		0.10	0.09		0.55	0.54	0.00	0.13	0.38	0.13
Uniform Delay, d1	23.5	21.6		27.5	26.7		29.7	9.7	6.9	29.8	9.6	8.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.1		0.1	0.1		5.3	0.4	0.0	0.4	0.2	0.2
Delay (s)	25.2	21.7		27.5	26.8		35.0	10.1	7.0	30.3	9.8	8.5
Level of Service	C	C		C	C		D	B	A	C	A	A
Approach Delay (s)		24.5			27.2			10.7			9.7	
Approach LOS		C			C			B			A	

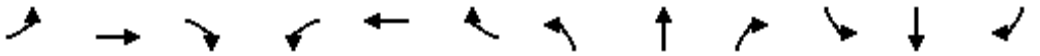
Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



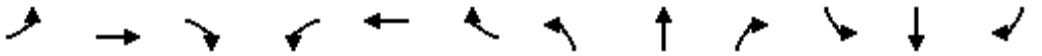
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	28	31	15	19	15	138	185	0	37	211	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.95			0.96		1.00	1.00		1.00	0.92	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1745			1758		1770	3539		1770	1722	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1775			1785		1770	3539		1770	1722	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	29	33	16	20	16	145	195	0	39	222	224
RTOR Reduction (vph)	0	31	0	0	15	0	0	0	0	0	68	0
Lane Group Flow (vph)	0	64	0	0	37	0	145	195	0	39	378	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		2.4			1.5		5.3	22.1		1.6	18.4	
Effective Green, g (s)		2.4			1.5		5.3	22.1		1.6	18.4	
Actuated g/C Ratio		0.06			0.03		0.12	0.51		0.04	0.42	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		98			61		215	1794		65	727	
v/s Ratio Prot							c0.08	c0.06		0.02	c0.22	
v/s Ratio Perm		c0.04			c0.02							
v/c Ratio		0.65			0.60		0.67	0.11		0.60	0.52	
Uniform Delay, d1		20.2			20.8		18.3	5.6		20.7	9.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.2			10.1		6.4	0.0		9.5	0.6	
Delay (s)		31.4			30.9		24.7	5.6		30.2	10.0	
Level of Service		C			C		C	A		C	A	
Approach Delay (s)		31.4			30.9			13.8			11.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	0	89	5	1	6	173	1583	5	54	2090	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1788	1583	1770	3538		1770	3539	1583
Flt Permitted		0.95	1.00		0.85	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1588	1583	1770	3538		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	108	0	94	5	1	6	182	1666	5	57	2200	280
RTOR Reduction (vph)	0	0	84	0	0	6	0	0	0	0	0	37
Lane Group Flow (vph)	0	108	10	0	6	0	182	1671	0	57	2200	243
Turn Type	Split		Perm	Perm		Perm	Prot			Prot		Perm
Protected Phases	4	4			3		5	2		1	6	
Permitted Phases			4	3		3						6
Actuated Green, G (s)		13.2	13.2		3.3	3.3	11.1	91.9		6.6	87.4	87.4
Effective Green, g (s)		14.2	14.2		4.3	4.3	14.1	93.9		7.6	90.4	90.4
Actuated g/C Ratio		0.11	0.11		0.03	0.03	0.11	0.70		0.06	0.68	0.68
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		188	168		51	51	186	2481		100	2389	1069
v/s Ratio Prot		c0.06					c0.10	0.47		0.03	c0.62	
v/s Ratio Perm			0.01		c0.00	0.00						0.15
v/c Ratio		0.57	0.06		0.12	0.00	0.98	0.67		0.57	0.92	0.23
Uniform Delay, d1		57.0	53.8		63.0	62.7	59.7	11.3		61.6	18.7	8.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.6	0.1		0.4	0.0	58.8	0.8		4.4	6.6	0.2
Delay (s)		59.6	53.9		63.3	62.7	118.6	12.1		65.9	25.3	8.5
Level of Service		E	D		E	E	F	B		E	C	A
Approach Delay (s)		56.9			63.0			22.6			24.3	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	133.9	Sum of lost time (s)	10.9
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

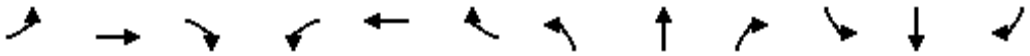


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	304	7	200	14	16	40	223	1441	5	5	1536	625
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	3.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	0.85		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1592		1770	1863	1583	3433	3537		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1592		1770	1863	1583	3433	3537		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	320	7	211	15	17	42	235	1517	5	5	1617	658
RTOR Reduction (vph)	0	109	0	0	0	41	0	0	0	0	0	148
Lane Group Flow (vph)	320	109	0	15	17	1	235	1522	0	5	1617	510
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						6
Actuated Green, G (s)	15.1	15.1		1.7	1.7	1.7	6.1	53.1		0.7	46.7	46.7
Effective Green, g (s)	16.1	16.1		2.7	2.7	2.7	7.1	55.6		1.7	49.2	49.2
Actuated g/C Ratio	0.18	0.18		0.03	0.03	0.03	0.08	0.64		0.02	0.56	0.56
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		3.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0		2.0	2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	635	294		55	58	49	280	2258		35	1999	894
v/s Ratio Prot	c0.09	0.07		0.01	c0.01		c0.07	0.43		0.00	c0.46	
v/s Ratio Perm						0.00						0.32
v/c Ratio	0.50	0.37		0.27	0.29	0.03	0.84	0.67		0.14	0.81	0.57
Uniform Delay, d1	31.9	31.1		41.2	41.3	40.9	39.4	10.0		42.0	15.2	12.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.8		1.0	1.0	0.1	18.5	1.1		0.7	2.9	1.4
Delay (s)	32.5	31.9		42.2	42.3	41.0	58.0	11.1		42.7	18.1	13.6
Level of Service	C	C		D	D	D	E	B		D	B	B
Approach Delay (s)		32.3			41.5			17.3			16.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

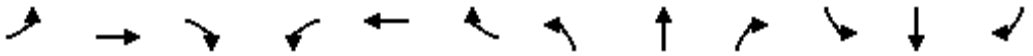
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	780	754	832	457	1012	816
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	2.0
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	821	794	876	481	1065	859
RTOR Reduction (vph)	0	11	0	326	0	0
Lane Group Flow (vph)	821	783	876	155	1065	859
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	23.2	50.0	26.7	26.7	26.8	59.8
Effective Green, g (s)	24.2	54.6	29.0	29.0	29.1	60.8
Actuated g/C Ratio	0.27	0.61	0.32	0.32	0.32	0.68
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	3.0
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	923	990	1140	510	1110	2391
v/s Ratio Prot	c0.24	0.26	c0.25		c0.31	0.24
v/s Ratio Perm		0.24		0.10		
v/c Ratio	0.89	0.79	0.77	0.30	0.96	0.36
Uniform Delay, d1	31.6	13.4	27.5	22.9	29.9	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.2	4.1	3.4	0.4	17.7	0.4
Delay (s)	41.8	17.5	30.8	23.4	47.6	6.7
Level of Service	D	B	C	C	D	A
Approach Delay (s)	29.9		28.2			29.3
Approach LOS	C		C			C

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.7
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	14	27	25	12	53	47	921	0	71	1336	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.92		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1665			1691		1770	3539		1770	3475	
Flt Permitted	0.95	0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1665			1691		1770	3539		1770	3475	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	321	15	28	26	13	56	49	969	0	75	1406	194
RTOR Reduction (vph)	0	6	0	0	43	0	0	0	0	0	8	0
Lane Group Flow (vph)	183	175	0	0	52	0	49	969	0	75	1592	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	16.5	16.5			6.9		7.1	71.8		7.9	72.2	
Effective Green, g (s)	16.5	16.5			6.9		7.1	71.8		7.9	72.2	
Actuated g/C Ratio	0.14	0.14			0.06		0.06	0.60		0.07	0.60	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Vehicle Extension (s)	2.0	2.0			2.0		2.0	4.2		2.0	3.2	
Lane Grp Cap (vph)	231	229			97		105	2118		117	2091	
v/s Ratio Prot	c0.11	0.11			c0.03		0.03	c0.27		0.04	c0.46	
v/s Ratio Perm												
v/c Ratio	0.79	0.76			0.53		0.47	0.46		0.64	0.76	
Uniform Delay, d1	50.1	49.9			55.0		54.6	13.3		54.7	17.6	
Progression Factor	1.00	1.00			1.00		0.75	0.35		1.00	1.00	
Incremental Delay, d2	15.8	12.7			2.8		1.1	0.7		8.7	1.7	
Delay (s)	65.9	62.6			57.8		42.0	5.3		63.3	19.3	
Level of Service	E	E			E		D	A		E	B	
Approach Delay (s)		64.2			57.8			7.1			21.2	
Approach LOS		E			E			A			C	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

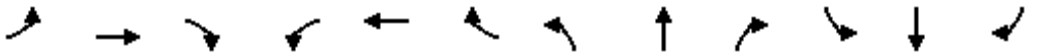


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	159	20	128	132	7	48	130	791	20	25	1161	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1778	1583	1770	3526		1770	3522	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1778	1583	1770	3526		1770	3522	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	167	21	135	139	7	51	137	833	21	26	1222	40
RTOR Reduction (vph)	0	0	117	0	0	45	0	1	0	0	1	0
Lane Group Flow (vph)	0	188	18	0	146	6	137	853	0	26	1261	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		16.4	16.4		13.0	13.0	12.6	70.1		3.6	61.1	
Effective Green, g (s)		16.4	16.4		13.0	13.0	12.6	70.1		3.6	61.1	
Actuated g/C Ratio		0.14	0.14		0.11	0.11	0.10	0.58		0.03	0.51	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)		244	216		193	171	186	2060		53	1793	
v/s Ratio Prot		c0.11			c0.08		c0.08	0.24		0.01	c0.36	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.77	0.09		0.76	0.03	0.74	0.41		0.49	0.70	
Uniform Delay, d1		50.0	45.2		52.0	47.9	52.1	13.7		57.3	22.5	
Progression Factor		1.00	1.00		1.00	1.00	1.26	0.83		0.63	0.33	
Incremental Delay, d2		12.8	0.1		13.9	0.0	4.2	0.2		1.7	0.9	
Delay (s)		62.8	45.3		65.8	47.9	69.6	11.5		37.7	8.5	
Level of Service		E	D		E	D	E	B		D	A	
Approach Delay (s)		55.5			61.2			19.5			9.0	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

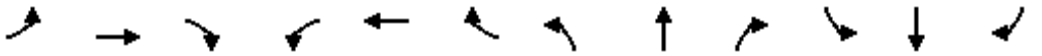
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	72	282	707	47	330	762
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	297	744	49	347	802
RTOR Reduction (vph)	0	222	0	34	0	0
Lane Group Flow (vph)	76	75	744	15	347	802
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	11.9	11.9	14.2	14.2	14.9	33.1
Effective Green, g (s)	13.9	13.9	16.9	16.9	16.9	35.8
Actuated g/C Ratio	0.25	0.25	0.31	0.31	0.31	0.65
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	872	402	1571	489	547	3328
v/s Ratio Prot	0.02		c0.15		c0.20	0.16
v/s Ratio Perm		c0.05		0.01		
v/c Ratio	0.09	0.19	0.47	0.03	0.63	0.24
Uniform Delay, d1	15.6	16.0	15.3	13.2	16.2	3.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	0.4	0.0	1.8	0.1
Delay (s)	15.6	16.1	15.7	13.2	18.0	3.9
Level of Service	B	B	B	B	B	A
Approach Delay (s)	16.0		15.5			8.2
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	54.7	Sum of lost time (s)	7.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	735	27	143	762	124	102	17	488	250	6	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5059		1770	5085	1583		1786	1583	1681	1689	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5059		1770	5085	1583		1786	1583	1681	1689	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	774	28	151	802	131	107	18	514	263	6	89
RTOR Reduction (vph)	0	4	0	0	0	85	0	0	183	0	0	74
Lane Group Flow (vph)	73	798	0	151	802	46	0	125	331	134	135	15
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	6.1	24.2		8.2	26.3	26.3		19.9	19.9	12.7	12.7	12.7
Effective Green, g (s)	7.1	26.5		9.2	28.6	28.6		20.9	20.9	13.7	13.7	13.7
Actuated g/C Ratio	0.09	0.32		0.11	0.35	0.35		0.25	0.25	0.17	0.17	0.17
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	153	1629		198	1767	550		454	402	280	281	264
v/s Ratio Prot	0.04	c0.16		c0.09	0.16			0.07		0.08	c0.08	
v/s Ratio Perm						0.03			c0.21			0.01
v/c Ratio	0.48	0.49		0.76	0.45	0.08		0.28	0.82	0.48	0.48	0.06
Uniform Delay, d1	35.8	22.5		35.5	20.8	18.0		24.6	29.0	31.1	31.1	28.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.5		14.4	0.4	0.1		0.1	12.3	0.5	0.5	0.0
Delay (s)	36.7	22.9		49.9	21.2	18.2		24.7	41.2	31.5	31.5	28.9
Level of Service	D	C		D	C	B		C	D	C	C	C
Approach Delay (s)		24.1			24.8			38.0			30.9	
Approach LOS		C			C			D			C	

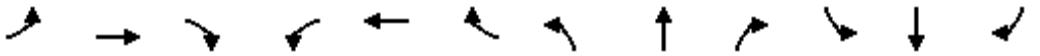
Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	82.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	643	540	82	599	183	490	685	58	162	645	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	211	677	568	86	631	193	516	721	61	171	679	331
RTOR Reduction (vph)	0	0	209	0	0	135	0	0	44	0	0	188
Lane Group Flow (vph)	211	677	359	86	631	58	516	721	17	171	679	143
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.2	22.8	22.8	6.1	20.3	20.3	10.2	20.6	20.6	8.2	18.6	18.6
Effective Green, g (s)	9.2	24.8	24.8	7.1	23.0	23.0	11.2	22.9	21.6	9.2	20.9	20.9
Actuated g/C Ratio	0.12	0.33	0.33	0.09	0.30	0.30	0.15	0.30	0.28	0.12	0.28	0.28
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	215	1156	517	166	1072	480	507	1534	450	431	1449	451
v/s Ratio Prot	c0.12	0.19		0.05	0.18		c0.15	c0.14		0.05	0.13	
v/s Ratio Perm			c0.23			0.04			0.01			0.09
v/c Ratio	0.98	0.59	0.69	0.52	0.59	0.12	1.02	0.47	0.04	0.40	0.47	0.32
Uniform Delay, d1	33.3	21.3	22.3	32.8	22.4	19.1	32.4	21.6	19.6	30.8	22.9	21.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	55.7	1.2	5.0	1.1	1.1	0.2	44.5	0.4	0.1	0.2	0.4	0.6
Delay (s)	88.9	22.4	27.3	33.9	23.5	19.3	76.9	21.9	19.7	31.0	23.3	22.5
Level of Service	F	C	C	C	C	B	E	C	B	C	C	C
Approach Delay (s)		34.0			23.6			43.7			24.2	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

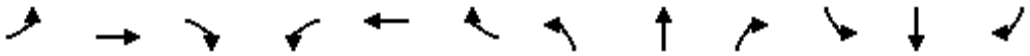


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	22	102	154	13	394	96	784	45	289	915	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.91	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1793	1583		1808	1597	1770	3732		1832	5790	1639
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1793	1583		1808	1597	1770	3732		1832	5790	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	23	107	162	14	415	101	825	47	304	963	76
RTOR Reduction (vph)	0	0	97	0	0	91	0	5	0	0	0	47
Lane Group Flow (vph)	0	101	10	0	176	324	101	867	0	304	963	29
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		6.7	6.7		12.1	24.5	6.5	20.1		12.4	26.0	26.0
Effective Green, g (s)		6.7	6.7		12.1	26.5	6.5	22.4		13.4	28.3	26.0
Actuated g/C Ratio		0.10	0.10		0.18	0.39	0.09	0.33		0.20	0.41	0.38
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		175	155		319	687	168	1219		358	2389	621
v/s Ratio Prot		c0.06			c0.10	0.09	0.06	c0.23		c0.17	0.17	
v/s Ratio Perm			0.01			0.11						0.02
v/c Ratio		0.58	0.07		0.55	0.47	0.60	0.71		0.85	0.40	0.05
Uniform Delay, d1		29.6	28.1		25.8	15.8	29.8	20.3		26.6	14.2	13.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.8	0.1		1.2	0.2	4.1	2.5		16.3	0.2	0.1
Delay (s)		32.4	28.2		26.9	16.0	33.9	22.8		42.9	14.4	13.5
Level of Service		C	C		C	B	C	C		D	B	B
Approach Delay (s)		30.3			19.2			23.9			20.8	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

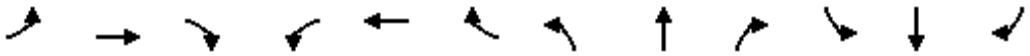
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	60	859	7	207	924
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	1.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3535		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3535		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	63	904	7	218	973
RTOR Reduction (vph)	0	53	1	0	0	0
Lane Group Flow (vph)	4	10	910	0	218	973
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	6.0	6.0	19.5		7.5	32.8
Effective Green, g (s)	7.0	7.0	21.5		8.5	34.8
Actuated g/C Ratio	0.15	0.15	0.47		0.19	0.76
Clearance Time (s)	4.0	4.0	4.8		4.0	3.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	271	242	1659		328	2689
v/s Ratio Prot	0.00		c0.26		c0.12	0.27
v/s Ratio Perm		c0.01				
v/c Ratio	0.01	0.04	0.55		0.66	0.36
Uniform Delay, d1	16.5	16.5	8.7		17.3	1.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.1	0.4		5.0	0.1
Delay (s)	16.5	16.6	9.1		22.3	1.9
Level of Service	B	B	A		C	A
Approach Delay (s)	16.6		9.1			5.6
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	8.8
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	24	0	25	0	1368	28	32	1637	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		2.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3529		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3529		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	25	0	26	0	1440	29	34	1723	0
RTOR Reduction (vph)	0	0	0	0	0	25	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	25	0	1	0	1468	0	34	1723	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				2.3		2.3		45.8		1.5	50.3	
Effective Green, g (s)				3.3		3.3		47.8		2.5	52.3	
Actuated g/C Ratio				0.05		0.05		0.69		0.04	0.76	
Clearance Time (s)				4.0		4.0		4.9		3.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				84		75		2438		64	2675	
v/s Ratio Prot				c0.01				0.42		0.02	c0.49	
v/s Ratio Perm						0.00						
v/c Ratio				0.30		0.02		0.60		0.53	0.64	
Uniform Delay, d1				31.8		31.4		5.7		32.8	4.0	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.7		0.0		0.7		4.2	0.8	
Delay (s)				32.6		31.4		6.4		37.0	4.8	
Level of Service				C		C		A		D	A	
Approach Delay (s)		0.0			32.0			6.4			5.4	
Approach LOS		A			C			A			A	

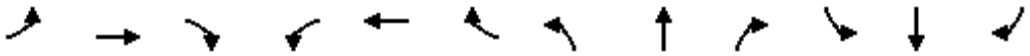
Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	13.6
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	11	54	62	16	66	36	1626	43	30	1804	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.88		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1601		1770	3521		1770	3525	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1601		1770	3521		1770	3525	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	12	57	65	17	69	38	1712	45	32	1899	38
RTOR Reduction (vph)	0	0	53	0	62	0	0	1	0	0	1	0
Lane Group Flow (vph)	64	12	4	65	24	0	38	1756	0	32	1936	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3									
Actuated Green, G (s)	6.1	6.1	6.1	7.8	7.8		3.8	55.3		3.8	55.7	
Effective Green, g (s)	7.1	7.1	7.1	8.8	8.8		4.8	57.3		4.8	57.7	
Actuated g/C Ratio	0.08	0.08	0.08	0.10	0.10		0.05	0.63		0.05	0.64	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	139	146	124	172	156		94	2234		94	2252	
v/s Ratio Prot	c0.04	0.01		c0.04	0.01		c0.02	0.50		0.02	c0.55	
v/s Ratio Perm			0.00									
v/c Ratio	0.46	0.08	0.04	0.38	0.15		0.40	0.79		0.34	0.86	
Uniform Delay, d1	39.8	38.6	38.4	38.2	37.3		41.4	12.0		41.2	13.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	0.2	0.1	1.2	0.4		1.0	2.1		0.8	3.6	
Delay (s)	41.8	38.8	38.5	39.3	37.7		42.4	14.1		42.0	16.7	
Level of Service	D	D	D	D	D		D	B		D	B	
Approach Delay (s)		40.1			38.4			14.7			17.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.3	Sum of lost time (s)	11.9
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

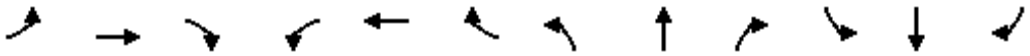
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	26	10	105	31	59	5	2146	9	38	2488	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2013			1963		1770	4984		1770	4965	
Flt Permitted		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2013			1963		1770	4984		1770	4965	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	27	11	111	33	62	5	2259	9	40	2619	77
RTOR Reduction (vph)	0	3	0	0	11	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	93	0	0	195	0	5	2268	0	40	2694	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split			Split			Prot			Prot		
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)		10.3			19.4		2.4	95.7		6.9	100.2	
Effective Green, g (s)		11.3			20.4		3.4	98.4		7.9	102.9	
Actuated g/C Ratio		0.08			0.14		0.02	0.66		0.05	0.69	
Clearance Time (s)		4.0			4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0		2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		152			267		40	3270		93	3406	
v/s Ratio Prot		c0.05			c0.10		0.00	c0.45		0.02	c0.54	
v/s Ratio Perm												
v/c Ratio		0.61			0.73		0.12	0.69		0.43	0.79	
Uniform Delay, d1		67.2			62.2		71.8	16.3		68.9	16.2	
Progression Factor		1.00			1.00		0.77	0.36		0.99	1.46	
Incremental Delay, d2		5.1			8.2		0.4	0.5		0.6	1.0	
Delay (s)		72.3			70.3		55.5	6.3		69.1	24.6	
Level of Service		E			E		E	A		E	C	
Approach Delay (s)		72.3			70.3			6.5			25.3	
Approach LOS		E			E			A			C	

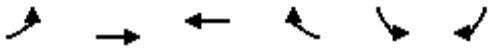
Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



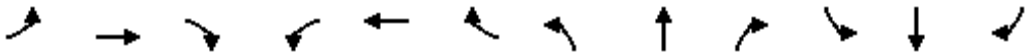
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	0	197	389	0	7	85	2162	42	3	2434	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00		0.97	1.00		0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1540	1770		1554	1770	5067		1770	5016	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1540	1770		1554	1770	5067		1770	5016	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	37	0	207	409	0	7	89	2276	44	3	2562	196
RTOR Reduction (vph)	0	0	72	0	0	4	0	1	0	0	5	0
Lane Group Flow (vph)	37	0	135	409	0	3	89	2319	0	3	2753	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	37.7		37.7	37.7		37.7	10.4	95.0		0.6	85.2	
Effective Green, g (s)	38.7		38.7	38.7		38.7	11.4	96.5		2.6	86.7	
Actuated g/C Ratio	0.26		0.26	0.26		0.26	0.08	0.64		0.02	0.58	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	457		397	457		401	135	3260		31	2899	
v/s Ratio Prot	0.02			c0.23			c0.05	0.46		0.00	c0.55	
v/s Ratio Perm			0.09			0.00						
v/c Ratio	0.08		0.34	0.89		0.01	0.66	0.71		0.10	0.95	
Uniform Delay, d1	42.2		45.3	53.7		41.4	67.4	17.6		72.5	29.6	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		0.74	0.68	
Incremental Delay, d2	0.0		0.2	19.2		0.0	8.6	1.3		0.3	5.5	
Delay (s)	42.2		45.5	72.8		41.4	76.0	18.9		54.0	25.8	
Level of Service	D		D	E		D	E	B		D	C	
Approach Delay (s)		45.0			72.3			21.0			25.8	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



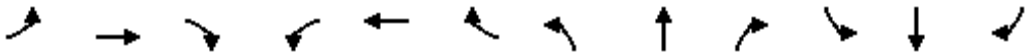
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	4	312	341	51	174	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	3.9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	328	359	54	183	32
RTOR Reduction (vph)	0	0	0	31	0	24
Lane Group Flow (vph)	4	328	359	23	183	8
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.6	21.7	17.1	17.1	9.9	9.9
Effective Green, g (s)	1.6	22.7	18.1	18.1	10.9	10.9
Actuated g/C Ratio	0.04	0.54	0.43	0.43	0.26	0.26
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	2.0
Lane Grp Cap (vph)	67	1904	1518	679	457	409
v/s Ratio Prot	0.00	c0.09	c0.10		c0.10	
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.06	0.17	0.24	0.03	0.40	0.02
Uniform Delay, d1	19.6	5.0	7.7	7.0	12.9	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.1	0.0	0.2	0.0
Delay (s)	19.7	5.0	7.8	7.0	13.2	11.7
Level of Service	B	A	A	A	B	B
Approach Delay (s)		5.2	7.7		12.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	42.2	Sum of lost time (s)	13.3
Intersection Capacity Utilization	26.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



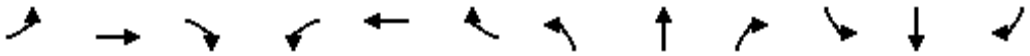
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	388	495	164	314	140	399	518	169	39	483	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4984	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4984	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	408	521	173	331	147	420	545	178	41	508	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	24	0
Lane Group Flow (vph)	46	408	521	173	331	147	420	545	178	41	562	0
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			
Actuated Green, G (s)	3.4	17.4	83.7	8.1	22.5	83.7	20.1	35.2	83.7	4.0	19.1	
Effective Green, g (s)	4.4	20.1	83.7	9.1	25.2	83.7	21.1	37.5	83.7	5.0	21.4	
Actuated g/C Ratio	0.05	0.24	1.00	0.11	0.30	1.00	0.25	0.45	1.00	0.06	0.26	
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	93	850	1583	192	1066	1583	446	1586	1583	106	1274	
v/s Ratio Prot	0.03	c0.12		c0.10	0.09		c0.24	0.15		0.02	c0.11	
v/s Ratio Perm			0.33			0.09			0.11			
v/c Ratio	0.49	0.48	0.33	0.90	0.31	0.09	0.94	0.34	0.11	0.39	0.44	
Uniform Delay, d1	38.6	27.3	0.0	36.9	22.6	0.0	30.7	15.1	0.0	37.9	26.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.5	0.7	0.6	37.8	0.3	0.1	28.1	0.3	0.1	0.9	0.5	
Delay (s)	40.1	28.0	0.6	74.7	22.9	0.1	58.8	15.3	0.1	38.7	26.6	
Level of Service	D	C	A	E	C	A	E	B	A	D	C	
Approach Delay (s)		13.9			31.5			28.9			27.4	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	26	104	162	33	128	45	832	29	63	1371	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1789	1583	1770	3521		1770	3526	
Flt Permitted		0.93	1.00		0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1734	1583		1376	1583	1770	3521		1770	3526	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	27	109	171	35	135	47	876	31	66	1443	37
RTOR Reduction (vph)	0	0	62	0	0	105	0	4	0	0	3	0
Lane Group Flow (vph)	0	34	47	0	206	30	47	903	0	66	1477	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		11.7	11.7		11.7	11.7	2.8	30.7		3.0	31.9	
Effective Green, g (s)		13.3	13.3		13.3	13.3	3.8	33.4		4.0	34.6	
Actuated g/C Ratio		0.22	0.22		0.22	0.22	0.06	0.56		0.07	0.58	
Clearance Time (s)		4.9	4.9		4.9	4.9	3.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		384	351		305	351	112	1960		118	2033	
v/s Ratio Prot							0.03	c0.26		0.04	c0.42	
v/s Ratio Perm		0.02	0.03		c0.15	0.02						
v/c Ratio		0.09	0.13		0.68	0.09	0.42	0.46		0.56	0.73	
Uniform Delay, d1		18.5	18.7		21.4	18.5	27.0	7.9		27.1	9.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.1		5.3	0.1	0.9	0.2		3.2	2.3	
Delay (s)		18.6	18.9		26.7	18.6	28.0	8.2		30.4	11.6	
Level of Service		B	B		C	B	C	A		C	B	
Approach Delay (s)		18.8			23.5			9.1			12.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.3
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

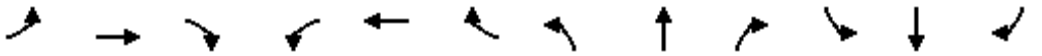


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2	1	53	5	55	1	903	27	95	1554	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1583		1781	1583	1770	3524		1770	3537	
Flt Permitted		0.86	1.00		0.76	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1596	1583		1417	1583	1770	3524		1770	3537	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	2	1	56	5	58	1	951	28	100	1636	6
RTOR Reduction (vph)	0	0	1	0	0	50	0	2	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	61	8	1	977	0	100	1642	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4		4						
Actuated Green, G (s)		12.1	12.1		12.1	12.1	0.6	56.0		8.2	63.6	
Effective Green, g (s)		13.1	13.1		13.1	13.1	1.6	59.0		9.2	66.6	
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.02	0.66		0.10	0.74	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	4.3		3.0	4.3	
Lane Grp Cap (vph)		232	230		206	230	31	2310		181	2617	
v/s Ratio Prot							0.00	c0.28		0.06	c0.46	
v/s Ratio Perm		0.01	0.00		c0.04	0.01						
v/c Ratio		0.04	0.00		0.30	0.04	0.03	0.42		0.55	0.63	
Uniform Delay, d1		33.0	32.9		34.3	33.0	43.4	7.4		38.4	5.7	
Progression Factor		1.00	1.00		1.00	1.00	0.71	0.11		1.00	1.00	
Incremental Delay, d2		0.1	0.0		0.8	0.1	0.1	0.2		3.6	1.1	
Delay (s)		33.1	32.9		35.1	33.1	31.0	1.0		42.1	6.8	
Level of Service		C	C		D	C	C	A		D	A	
Approach Delay (s)		33.1			34.1			1.0			8.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

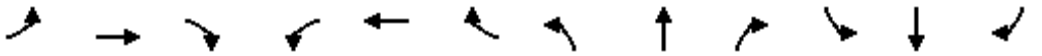
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	8	100	868	60	126	1485
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3505		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3505		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	105	914	63	133	1563
RTOR Reduction (vph)	0	92	5	0	0	0
Lane Group Flow (vph)	8	13	972	0	133	1563
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	9.8	9.8	47.8		18.7	70.5
Effective Green, g (s)	10.8	10.8	50.8		19.7	73.5
Actuated g/C Ratio	0.12	0.12	0.56		0.22	0.82
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	212	190	1978		387	2890
v/s Ratio Prot	0.00		0.28		0.08	c0.44
v/s Ratio Perm		c0.01				
v/c Ratio	0.04	0.07	0.49		0.34	0.54
Uniform Delay, d1	35.0	35.1	11.8		29.7	2.7
Progression Factor	1.00	1.00	1.00		0.78	0.09
Incremental Delay, d2	0.0	0.1	0.2		0.2	0.6
Delay (s)	35.0	35.2	12.1		23.2	0.9
Level of Service	D	D	B		C	A
Approach Delay (s)	35.2		12.1			2.6
Approach LOS	D		B			A

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



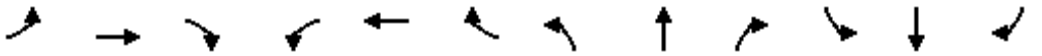
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	274	0	232	2	0	2	249	753	4	0	914	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5			3.0		3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00	0.98			1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85			0.93		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400	1542			1695		1660	3417	1544		3491	1500
Flt Permitted	0.95	1.00			0.98		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400	1542			1695		1660	3417	1544		3491	1500
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	288	0	244	2	0	2	262	793	4	0	962	148
RTOR Reduction (vph)	0	187	0	0	2	0	0	0	1	0	0	89
Lane Group Flow (vph)	288	57	0	0	2	0	262	793	3	0	962	59
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.9	12.9			1.3		8.3	35.0	35.0		22.7	22.7
Effective Green, g (s)	15.4	15.4			2.3		9.3	38.4	38.4		26.1	26.1
Actuated g/C Ratio	0.23	0.23			0.04		0.14	0.59	0.59		0.40	0.40
Clearance Time (s)	6.0	6.0			4.0		4.0	6.4	6.4		6.4	6.4
Vehicle Extension (s)	4.1	4.1			2.0		2.0	4.3	4.3		4.3	4.3
Lane Grp Cap (vph)	798	362			59		235	2000	904		1389	597
v/s Ratio Prot	c0.08	0.04			c0.00		c0.16	0.23			c0.28	
v/s Ratio Perm									0.00			0.04
v/c Ratio	0.36	0.16			0.04		1.11	0.40	0.00		0.69	0.10
Uniform Delay, d1	21.0	19.9			30.6		28.1	7.3	5.6		16.4	12.4
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.3			0.1		93.0	0.2	0.0		1.7	0.1
Delay (s)	21.4	20.2			30.7		121.2	7.5	5.7		18.1	12.5
Level of Service	C	C			C		F	A	A		B	B
Approach Delay (s)		20.9			30.7			35.7			17.4	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



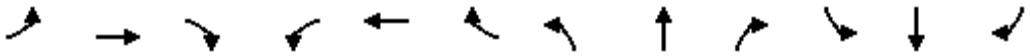
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	0	53	1	0	6	119	993	1	1	1087	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4	6.4	4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	0	56	1	0	6	125	1045	1	1	1144	62
RTOR Reduction (vph)	0	0	51	0	0	6	0	0	0	0	0	17
Lane Group Flow (vph)	0	27	5	0	1	0	125	1045	1	1	1144	45
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)		5.5	5.5		3.8	3.8	7.3	44.0	44.0	0.7	37.4	37.4
Effective Green, g (s)		5.5	6.5		3.8	3.8	8.3	45.0	44.0	0.7	38.4	38.4
Actuated g/C Ratio		0.08	0.09		0.05	0.05	0.11	0.62	0.61	0.01	0.53	0.53
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)		134	142		93	83	203	2200	962	17	1877	840
v/s Ratio Prot		c0.02			c0.00		c0.07	0.30		0.00	c0.32	
v/s Ratio Perm			0.00			0.00			0.00			0.03
v/c Ratio		0.20	0.04		0.01	0.00	0.62	0.47	0.00	0.06	0.61	0.05
Uniform Delay, d1		31.4	30.1		32.5	32.5	30.5	7.4	5.6	35.5	11.8	8.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.3	0.0		0.0	0.0	3.9	0.3	0.0	0.5	0.7	0.0
Delay (s)		31.7	30.1		32.5	32.5	34.4	7.6	5.6	36.1	12.5	8.3
Level of Service		C	C		C	C	C	A	A	D	B	A
Approach Delay (s)		30.6			32.5			10.5			12.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	16.4
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



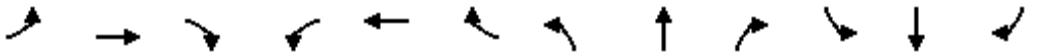
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	1	473	7	1	5	295	1010	10	4	1054	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1610	3034		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1610	3034		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	111	1	498	7	1	5	311	1063	11	4	1109	79
RTOR Reduction (vph)	0	0	282	0	8	0	0	0	5	0	0	49
Lane Group Flow (vph)	55	57	216	5	0	0	311	1063	6	4	1109	30
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	12.9	12.9	12.9	1.2	1.2		10.6	32.9	32.9	0.8	22.7	22.7
Effective Green, g (s)	15.6	15.6	15.6	2.2	2.2		11.6	36.3	36.3	1.8	26.1	26.1
Actuated g/C Ratio	0.23	0.23	0.23	0.03	0.03		0.17	0.52	0.52	0.03	0.38	0.38
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	379	380	357	51	96		297	1856	830	46	1918	597
v/s Ratio Prot	0.03	0.03		c0.00	0.00		c0.18	c0.30		0.00	0.22	
v/s Ratio Perm			c0.14						0.00			0.02
v/c Ratio	0.15	0.15	0.61	0.10	0.00		1.05	0.57	0.01	0.09	0.58	0.05
Uniform Delay, d1	21.5	21.5	24.0	32.5	32.4		28.8	11.2	7.8	32.9	17.2	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	3.6	1.3	0.0		65.1	0.7	0.0	0.3	0.6	0.1
Delay (s)	21.7	21.8	27.6	33.9	32.5		93.9	11.8	7.9	33.2	17.7	13.7
Level of Service	C	C	C	C	C		F	B	A	C	B	B
Approach Delay (s)		26.6			33.0			30.2			17.5	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	10.7
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	255	5	289	120	5	65	145	1369	46	94	1525	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.0	
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1688	1583		1777	1583	1770	5061		1770	5004	
Flt Permitted	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1688	1583		1777	1583	1770	5061		1770	5004	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	268	5	304	126	5	68	153	1441	48	99	1605	192
RTOR Reduction (vph)	0	0	264	0	0	60	0	3	0	0	10	0
Lane Group Flow (vph)	137	136	40	0	131	8	153	1486	0	99	1787	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)	14.8	14.8	14.8		13.0	13.0	14.0	63.3		11.2	61.2	
Effective Green, g (s)	15.8	15.8	15.8		14.0	14.0	15.0	66.3		12.2	64.2	
Actuated g/C Ratio	0.13	0.13	0.13		0.12	0.12	0.12	0.55		0.10	0.54	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3		2.0	5.3	
Lane Grp Cap (vph)	221	222	208		207	185	221	2796		180	2677	
v/s Ratio Prot	c0.08	0.08			c0.07		c0.09	0.29		0.06	c0.36	
v/s Ratio Perm			0.03			0.01						
v/c Ratio	0.62	0.61	0.19		0.63	0.04	0.69	0.53		0.55	0.67	
Uniform Delay, d1	49.3	49.2	46.4		50.5	47.1	50.3	17.0		51.3	20.2	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	3.5	0.2		4.6	0.0	7.3	0.7		2.1	0.9	
Delay (s)	52.9	52.7	46.6		55.1	47.1	57.6	17.7		53.3	21.1	
Level of Service	D	D	D		E	D	E	B		D	C	
Approach Delay (s)		49.5			52.4			21.5			22.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

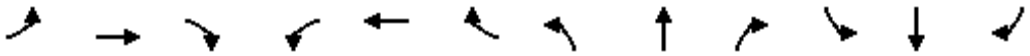


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	335	102	82	22	88	37	269	1413	24	63	2055	393
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.91	0.91			0.95		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.96			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3195			3381		3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.72			0.76		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	2361			2587		3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	353	107	86	23	93	39	283	1487	25	66	2163	414
RTOR Reduction (vph)	0	20	0	0	28	0	0	0	11	0	0	146
Lane Group Flow (vph)	184	342	0	0	127	0	283	1487	14	66	2163	268
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	16.2	35.1			13.2		11.8	63.7	63.7	7.2	59.1	59.1
Effective Green, g (s)	17.2	37.8			15.9		12.8	66.7	66.7	8.2	62.1	62.1
Actuated g/C Ratio	0.14	0.31			0.13		0.11	0.56	0.56	0.07	0.52	0.52
Clearance Time (s)	4.0	5.7			5.7		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3			4.3		2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	231	875			343		366	2826	880	121	2631	819
v/s Ratio Prot	c0.11	0.06					c0.08	0.29		0.04	c0.43	
v/s Ratio Perm		c0.06			0.05				0.01			0.17
v/c Ratio	0.80	0.39			1.22dr		0.77	0.53	0.02	0.55	0.82	0.33
Uniform Delay, d1	49.7	32.1			47.5		52.2	16.7	11.9	54.1	24.3	16.8
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.1	0.5			1.1		8.9	0.7	0.0	2.7	2.4	0.4
Delay (s)	65.8	32.6			48.6		61.1	17.4	12.0	56.8	26.7	17.2
Level of Service	E	C			D		E	B	B	E	C	B
Approach Delay (s)		43.8			48.6			24.2			26.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

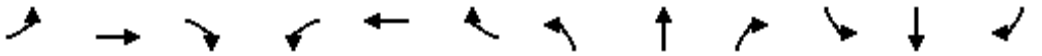
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	526	17	14	259	8	14	2	15	7	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	3523		1770	3524			1702			1708	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (perm)	1770	3523		1770	3524			1702			1708	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	554	18	15	273	8	15	2	16	7	0	5
RTOR Reduction (vph)	0	2	0	0	2	0	0	14	0	0	5	0
Lane Group Flow (vph)	6	570	0	15	279	0	0	19	0	0	7	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.8	25.2		0.6	25.0			4.2			0.9	
Effective Green, g (s)	1.8	27.9		1.6	27.7			5.2			1.9	
Actuated g/C Ratio	0.04	0.57		0.03	0.57			0.11			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	66	2022		58	2009			182			67	
v/s Ratio Prot	0.00	c0.16		c0.01	0.08			c0.01			c0.00	
v/s Ratio Perm												
v/c Ratio	0.09	0.28		0.26	0.14			0.10			0.11	
Uniform Delay, d1	22.6	5.3		22.9	4.9			19.6			22.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.1		0.9	0.1			0.1			0.3	
Delay (s)	22.8	5.4		23.8	4.9			19.7			22.8	
Level of Service	C	A		C	A			B			C	
Approach Delay (s)		5.6			5.9			19.7			22.8	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	537	12	39	323	34	4	0	13	12	0	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.90			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1649			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1649			1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	565	13	41	340	36	4	0	14	13	0	129
RTOR Reduction (vph)	0	0	6	0	0	22	0	13	0	0	0	105
Lane Group Flow (vph)	168	565	7	41	340	14	0	5	0	0	13	24
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	7.7	23.9	23.9	2.3	18.5	18.5		1.0			8.5	8.5
Effective Green, g (s)	8.7	26.9	26.9	3.3	21.5	21.5		2.0			10.5	10.5
Actuated g/C Ratio	0.16	0.49	0.49	0.06	0.39	0.39		0.04			0.19	0.19
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	278	1718	769	105	1373	614		60			335	300
v/s Ratio Prot	c0.09	c0.16		0.02	0.10			c0.00			0.01	
v/s Ratio Perm			0.00			0.01						c0.02
v/c Ratio	0.60	0.33	0.01	0.39	0.25	0.02		0.08			0.04	0.08
Uniform Delay, d1	21.7	8.7	7.4	25.1	11.5	10.5		25.8			18.3	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	2.5	0.1	0.0	0.9	0.1	0.0		0.2			0.0	0.0
Delay (s)	24.3	8.9	7.4	26.0	11.6	10.5		26.0			18.3	18.5
Level of Service	C	A	A	C	B	B		C			B	B
Approach Delay (s)		12.3			12.9			26.0			18.5	
Approach LOS		B			B			C			B	

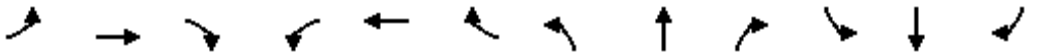
Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	9.7
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	346	2	50	240	6	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	364	2	53	253	6	57
RTOR Reduction (vph)	0	1	0	0	0	44
Lane Group Flow (vph)	364	1	53	253	6	13
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	9.9	9.9	2.3	17.2	7.7	7.7
Effective Green, g (s)	9.9	9.9	2.3	17.2	7.7	7.7
Actuated g/C Ratio	0.28	0.28	0.07	0.49	0.22	0.22
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1004	449	117	1744	391	349
v/s Ratio Prot	c0.10		c0.03	0.07	0.00	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.36	0.00	0.45	0.15	0.02	0.04
Uniform Delay, d1	10.0	9.0	15.7	4.8	10.6	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	2.8	0.0	0.0	0.0
Delay (s)	10.2	9.0	18.5	4.9	10.7	10.7
Level of Service	B	A	B	A	B	B
Approach Delay (s)	10.2			7.2	10.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	34.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

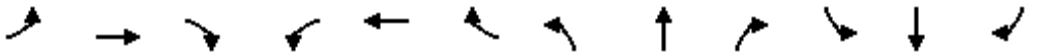
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1194	483	246	609	104	321
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1257	508	259	641	109	338
RTOR Reduction (vph)	0	271	0	502	0	0
Lane Group Flow (vph)	1257	237	259	139	109	338
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	32.5	32.5	15.1	15.1	7.2	27.3
Effective Green, g (s)	32.5	32.5	15.1	15.1	7.2	27.3
Actuated g/C Ratio	0.47	0.47	0.22	0.22	0.10	0.39
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1598	737	766	342	183	1384
v/s Ratio Prot	c0.37		0.07		c0.06	0.10
v/s Ratio Perm		0.15		c0.09		
v/c Ratio	0.79	0.32	0.34	0.41	0.60	0.24
Uniform Delay, d1	15.7	11.7	23.1	23.5	29.9	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.3	0.3	0.8	5.1	0.1
Delay (s)	18.4	12.0	23.4	24.3	35.0	14.4
Level of Service	B	B	C	C	D	B
Approach Delay (s)	16.5		24.0			19.4
Approach LOS	B		C			B

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	69.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



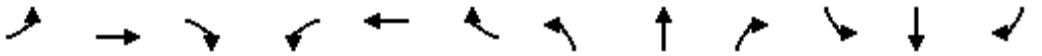
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	375	6	6	707	699	2	13	5	217	10	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1851	1583		1778	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1851	1583		1778	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	87	395	6	6	744	736	2	14	5	228	11	59
RTOR Reduction (vph)	0	0	3	0	0	435	0	0	5	0	0	45
Lane Group Flow (vph)	87	395	3	6	744	301	0	16	0	0	239	14
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	4.0	25.7	25.7	0.7	21.4	21.4		3.0	3.0		13.3	13.3
Effective Green, g (s)	5.0	28.7	28.7	1.7	24.4	24.4		4.0	4.0		14.3	14.3
Actuated g/C Ratio	0.08	0.48	0.48	0.03	0.41	0.41		0.07	0.07		0.24	0.24
Clearance Time (s)	4.0	6.0	6.0	3.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	148	1701	761	50	1446	647		124	106		426	379
v/s Ratio Prot	c0.05	0.11		0.00	c0.21			c0.01			c0.13	
v/s Ratio Perm			0.00			0.19			0.00			0.01
v/c Ratio	0.59	0.23	0.00	0.12	0.51	0.46		0.13	0.00		0.56	0.04
Uniform Delay, d1	26.4	9.1	8.1	28.3	13.2	12.9		26.2	26.0		19.9	17.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.8	0.1	0.0	0.4	0.4	0.6		0.2	0.0		1.0	0.0
Delay (s)	30.2	9.1	8.1	28.7	13.6	13.5		26.4	26.0		21.0	17.4
Level of Service	C	A	A	C	B	B		C	C		C	B
Approach Delay (s)		12.9			13.6			26.3			20.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



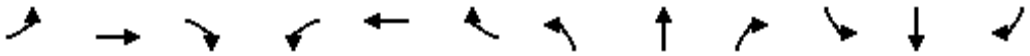
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	566	10	88	1393	61	7	5	43	44	4	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	596	11	93	1466	64	7	5	45	46	4	21
RTOR Reduction (vph)	0	0	6	0	0	31	0	0	38	0	0	17
Lane Group Flow (vph)	33	596	5	93	1466	33	7	5	7	46	4	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.6	31.0	31.0	5.3	33.7	33.7	1.0	10.3	10.3	4.4	11.7	11.7
Effective Green, g (s)	2.6	31.0	31.0	5.3	33.7	33.7	1.0	10.3	10.3	4.4	11.7	11.7
Actuated g/C Ratio	0.04	0.45	0.45	0.08	0.49	0.49	0.01	0.15	0.15	0.06	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	67	1590	711	136	1728	773	26	278	236	113	316	268
v/s Ratio Prot	0.02	0.17		c0.05	c0.41		0.00	0.00		c0.03	0.00	
v/s Ratio Perm			0.00			0.02			c0.00			c0.00
v/c Ratio	0.49	0.37	0.01	0.68	0.85	0.04	0.27	0.02	0.03	0.41	0.01	0.01
Uniform Delay, d1	32.6	12.6	10.5	31.0	15.4	9.2	33.6	25.0	25.1	31.0	23.8	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.6	0.1	0.0	13.3	4.1	0.0	5.5	0.0	0.0	2.4	0.0	0.0
Delay (s)	38.2	12.7	10.5	44.3	19.5	9.2	39.2	25.1	25.1	33.4	23.9	23.9
Level of Service	D	B	B	D	B	A	D	C	C	C	C	C
Approach Delay (s)		14.0			20.5			26.8			30.1	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



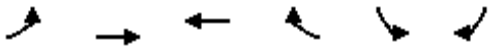
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	403	310	26	217	1013	151	48	617	134	194	707	639
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	2.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	424	326	27	228	1066	159	51	649	141	204	744	673
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	424	326	27	228	1066	159	51	649	141	204	744	673
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.0	29.3	85.5	8.7	27.0	85.5	4.7	20.8	85.5	8.0	24.4	85.5
Effective Green, g (s)	11.0	32.3	85.5	9.7	30.0	85.5	5.7	23.5	85.5	9.0	27.1	85.5
Actuated g/C Ratio	0.13	0.38	1.00	0.11	0.35	1.00	0.07	0.27	1.00	0.11	0.32	1.00
Clearance Time (s)	4.0	5.7		3.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	442	1337	1583	389	1242	1583	229	973	1583	361	1122	1583
v/s Ratio Prot	c0.12	0.09		0.07	c0.30		0.01	0.18		c0.06	c0.21	
v/s Ratio Perm			0.02			0.10			0.09			c0.43
v/c Ratio	0.96	0.24	0.02	0.59	0.86	0.10	0.22	0.67	0.09	0.57	0.66	0.43
Uniform Delay, d1	37.0	18.2	0.0	36.0	25.8	0.0	37.8	27.5	0.0	36.4	25.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	31.9	0.2	0.0	1.5	6.5	0.1	0.2	2.0	0.1	1.2	1.8	0.8
Delay (s)	68.9	18.4	0.0	37.5	32.3	0.1	38.0	29.5	0.1	37.6	27.0	0.8
Level of Service	E	B	A	D	C	A	D	C	A	D	C	A
Approach Delay (s)		45.3			29.6			25.1			17.5	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	85.5	Sum of lost time (s)	5.7
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



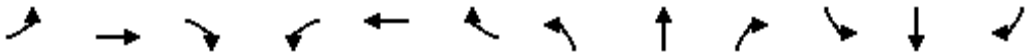
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	499	110	255	1162	50	236	221	20	60	93	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3443		1770	3517		1770	1840		1770	1763	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3443		1770	3517		1770	1840		1770	1763	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	525	116	268	1223	53	248	233	21	63	98	54
RTOR Reduction (vph)	0	21	0	0	3	0	0	4	0	0	23	0
Lane Group Flow (vph)	41	620	0	268	1273	0	248	250	0	63	129	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.3	22.9		13.7	33.3		12.2	20.8		6.1	14.7	
Effective Green, g (s)	4.3	25.6		14.7	36.0		13.2	23.1		7.1	17.0	
Actuated g/C Ratio	0.05	0.31		0.18	0.44		0.16	0.28		0.09	0.21	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	93	1074		317	1542		285	518		153	365	
v/s Ratio Prot	0.02	0.18		c0.15	c0.36		c0.14	c0.14		0.04	0.07	
v/s Ratio Perm												
v/c Ratio	0.44	0.58		0.85	0.83		0.87	0.48		0.41	0.35	
Uniform Delay, d1	37.7	23.7		32.6	20.3		33.6	24.5		35.5	27.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.9		17.6	3.9		23.2	0.9		0.7	0.8	
Delay (s)	38.9	24.6		50.2	24.2		56.8	25.5		36.2	28.6	
Level of Service	D	C		D	C		E	C		D	C	
Approach Delay (s)		25.4			28.7			41.0			30.8	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	82.1	Sum of lost time (s)	6.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



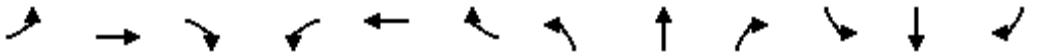
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	12	570	1589	35	99	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3528		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3528		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	600	1673	37	104	8
RTOR Reduction (vph)	0	0	1	0	0	7
Lane Group Flow (vph)	13	600	1709	0	104	1
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	1.0	47.2	42.2		8.1	8.1
Effective Green, g (s)	2.0	49.9	44.9		9.1	9.1
Actuated g/C Ratio	0.03	0.77	0.69		0.14	0.14
Clearance Time (s)	4.0	5.7	5.7		4.0	4.0
Vehicle Extension (s)	2.0	3.8	3.8		2.0	2.0
Lane Grp Cap (vph)	54	2717	2437		248	222
v/s Ratio Prot	0.01	c0.17	c0.48		c0.06	
v/s Ratio Perm						0.00
v/c Ratio	0.24	0.22	0.70		0.42	0.01
Uniform Delay, d1	30.8	2.1	6.0		25.5	24.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	0.1	1.0		0.4	0.0
Delay (s)	31.6	2.2	7.0		26.0	24.1
Level of Service	C	A	A		C	C
Approach Delay (s)		2.8	7.0		25.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



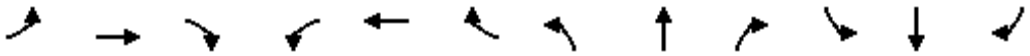
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	599	55	166	1625	0	68	0	59	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7	4.7	2.0	2.7			2.0	2.0			
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00			
Frt		1.00	0.85	1.00	1.00			1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3539	1583	1770	3539			1770	1583			
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (perm)		3539	1583	1770	3539			1770	1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	631	58	175	1711	0	72	0	62	0	0	0
RTOR Reduction (vph)	0	0	31	0	0	0	0	0	51	0	0	0
Lane Group Flow (vph)	0	631	27	175	1711	0	0	72	11	0	0	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2						3			
Actuated Green, G (s)		27.7	27.7	10.5	42.2			9.1	9.1			
Effective Green, g (s)		30.7	28.7	12.5	45.2			11.1	11.1			
Actuated g/C Ratio		0.50	0.47	0.20	0.74			0.18	0.18			
Clearance Time (s)		5.7	5.7	4.0	5.7			4.0	4.0			
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		1781	745	363	2622			322	288			
v/s Ratio Prot		0.18		0.10	c0.48			c0.04				
v/s Ratio Perm			0.02						0.01			
v/c Ratio		0.35	0.04	0.48	0.65			0.22	0.04			
Uniform Delay, d1		9.2	8.7	21.4	4.0			21.3	20.6			
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.1	0.0	1.0	0.6			0.4	0.1			
Delay (s)		9.3	8.7	22.4	4.6			21.6	20.6			
Level of Service		A	A	C	A			C	C			
Approach Delay (s)		9.2			6.2			21.2			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	4.7
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



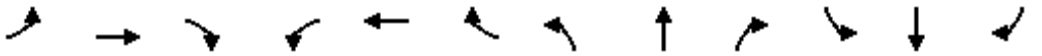
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	655	35	100	1645	4	17	17	113	24	15	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.97	1.00
Satd. Flow (prot)	1770	3512		1770	3538			1817	1583		1808	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.87	1.00		0.84	1.00
Satd. Flow (perm)	1770	3512		1770	3538			1629	1583		1571	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	43	689	37	105	1732	4	18	18	119	25	16	26
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	100	0	0	22
Lane Group Flow (vph)	43	722	0	105	1736	0	0	36	19	0	41	4
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	3.3	36.8		6.3	39.8			9.4	9.4		9.4	9.4
Effective Green, g (s)	4.3	39.5		7.3	42.5			10.4	10.4		10.4	10.4
Actuated g/C Ratio	0.06	0.60		0.11	0.64			0.16	0.16		0.16	0.16
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	115	2096		195	2271			256	249		247	249
v/s Ratio Prot	0.02	0.21		c0.06	c0.49							
v/s Ratio Perm								0.02	0.01		c0.03	0.00
v/c Ratio	0.37	0.34		0.54	0.76			0.14	0.08		0.17	0.02
Uniform Delay, d1	29.7	6.8		27.9	8.3			24.0	23.8		24.1	23.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.1		1.4	1.7			0.1	0.0		0.1	0.0
Delay (s)	30.4	6.9		29.3	10.0			24.1	23.8		24.3	23.6
Level of Service	C	A		C	A			C	C		C	C
Approach Delay (s)		8.2			11.1			23.9			24.0	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	66.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



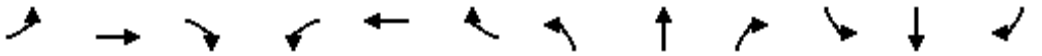
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	421	6	2	690	77	2	0	2	140	0	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98			0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3532		1770	3486			1695		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)	1770	3532		1770	3486			1695		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	108	443	6	2	726	81	2	0	2	147	0	223
RTOR Reduction (vph)	0	1	0	0	9	0	0	2	0	0	176	0
Lane Group Flow (vph)	108	448	0	2	798	0	0	2	0	147	47	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	6.8	27.9		0.9	22.0			1.0		11.4	11.4	
Effective Green, g (s)	7.8	30.6		1.9	24.7			2.0		12.4	12.4	
Actuated g/C Ratio	0.13	0.52		0.03	0.42			0.03		0.21	0.21	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	234	1835		57	1462			58		373	333	
v/s Ratio Prot	c0.06	0.13		0.00	c0.23			c0.00		c0.08	0.03	
v/s Ratio Perm												
v/c Ratio	0.46	0.24		0.04	0.55			0.04		0.39	0.14	
Uniform Delay, d1	23.6	7.8		27.6	12.9			27.5		20.0	18.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		0.1	0.5			0.2		0.3	0.1	
Delay (s)	24.1	7.9		27.7	13.4			27.7		20.3	19.0	
Level of Service	C	A		C	B			C		C	B	
Approach Delay (s)		11.0			13.4			27.7			19.5	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



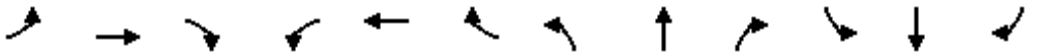
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	6	33	155	4	50	21	948	151	6	570	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	6	35	163	4	53	22	998	159	6	600	17
RTOR Reduction (vph)	0	0	32	0	0	41	0	0	96	0	0	10
Lane Group Flow (vph)	27	6	3	163	4	12	22	998	63	6	600	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.6	4.9	4.9	10.7	14.0	14.0	0.6	23.7	23.7	0.5	23.6	23.6
Effective Green, g (s)	1.6	4.9	4.9	10.7	14.0	14.0	0.6	23.7	23.7	0.5	23.6	23.6
Actuated g/C Ratio	0.03	0.08	0.08	0.18	0.23	0.23	0.01	0.40	0.40	0.01	0.39	0.39
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	153	130	317	436	371	18	2015	627	15	2007	625
v/s Ratio Prot	0.02	0.00		c0.09	0.00		c0.01	c0.20		0.00	0.12	
v/s Ratio Perm			0.00			c0.01			0.04			0.00
v/c Ratio	0.57	0.04	0.02	0.51	0.01	0.03	1.22	0.50	0.10	0.40	0.30	0.01
Uniform Delay, d1	28.8	25.3	25.2	22.2	17.6	17.7	29.6	13.6	11.3	29.5	12.4	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.9	0.1	0.1	1.4	0.0	0.0	289.8	0.2	0.1	16.6	0.1	0.0
Delay (s)	44.6	25.4	25.3	23.6	17.6	17.7	319.4	13.8	11.4	46.1	12.5	11.0
Level of Service	D	C	C	C	B	B	F	B	B	D	B	B
Approach Delay (s)		33.0			22.1			19.1			12.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



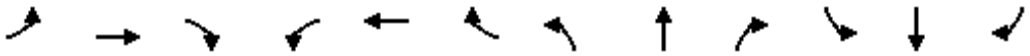
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	12	26	286	37	17	65	1093	306	28	714	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	13	27	301	39	18	68	1151	322	29	752	16
RTOR Reduction (vph)	0	0	24	0	0	12	0	0	206	0	0	11
Lane Group Flow (vph)	11	13	3	301	39	6	68	1151	116	29	752	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	6.7	6.7	15.5	21.7	21.7	3.2	22.8	22.8	1.3	20.9	20.9
Effective Green, g (s)	1.5	8.7	7.7	16.5	23.7	22.7	4.2	24.8	23.8	2.3	22.9	21.9
Actuated g/C Ratio	0.02	0.13	0.12	0.25	0.36	0.34	0.06	0.37	0.36	0.03	0.35	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	40	244	184	440	666	542	112	1902	568	61	1756	523
v/s Ratio Prot	0.01	0.01		c0.17	c0.02		c0.04	c0.23		0.02	0.15	
v/s Ratio Perm			0.00			0.00			0.07			0.00
v/c Ratio	0.28	0.05	0.02	0.68	0.06	0.01	0.61	0.61	0.20	0.48	0.43	0.01
Uniform Delay, d1	31.9	25.2	25.9	22.5	14.0	14.4	30.2	16.8	14.7	31.4	16.7	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.1	0.0	4.4	0.0	0.0	9.0	0.5	0.2	5.7	0.2	0.0
Delay (s)	35.6	25.3	26.0	26.9	14.0	14.4	39.2	17.3	14.9	37.2	16.8	14.9
Level of Service	D	C	C	C	B	B	D	B	B	D	B	B
Approach Delay (s)		27.9			24.9			17.8			17.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	7	40	49	16	77	101	1417	107	44	1004	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	7	42	52	17	81	106	1492	113	46	1057	54
RTOR Reduction (vph)	0	0	36	0	0	67	0	0	57	0	0	31
Lane Group Flow (vph)	24	7	6	52	17	14	106	1492	56	46	1057	23
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	9.8	9.8	2.0	11.3	11.3	6.6	33.2	33.2	2.0	28.6	28.6
Effective Green, g (s)	0.5	9.8	9.8	2.0	11.3	11.3	6.6	33.2	33.2	2.0	28.6	28.6
Actuated g/C Ratio	0.01	0.15	0.15	0.03	0.17	0.17	0.10	0.50	0.50	0.03	0.43	0.43
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	272	232	53	314	267	174	2520	784	53	2171	676
v/s Ratio Prot	0.01	0.00		c0.03	c0.01		c0.06	c0.29		0.03	0.21	
v/s Ratio Perm			0.00			0.01			0.04			0.01
v/c Ratio	1.85	0.03	0.03	0.98	0.05	0.05	0.61	0.59	0.07	0.87	0.49	0.03
Uniform Delay, d1	33.2	24.5	24.5	32.5	23.4	23.4	29.0	12.1	8.8	32.4	13.9	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	579.3	0.0	0.0	116.3	0.1	0.1	5.9	0.4	0.0	76.0	0.2	0.0
Delay (s)	612.6	24.5	24.6	148.8	23.4	23.4	34.9	12.4	8.9	108.4	14.1	11.2
Level of Service	F	C	C	F	C	C	C	B	A	F	B	B
Approach Delay (s)		217.9			66.9			13.6			17.7	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	67	58	19	60	3	53	116	15	2	43	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1549	1770	1848		1770	1826		1770	1701	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1549	1770	1848		1770	1826		1770	1701	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	99	71	61	20	63	3	56	122	16	2	45	47
RTOR Reduction (vph)	0	0	43	0	3	0	0	8	0	0	39	0
Lane Group Flow (vph)	99	71	18	20	63	0	56	130	0	2	53	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	7.5	11.0	11.0	0.5	4.0		1.2	7.0		0.5	6.3	
Effective Green, g (s)	7.5	11.0	11.0	0.5	4.0		1.2	7.0		0.5	6.3	
Actuated g/C Ratio	0.20	0.30	0.30	0.01	0.11		0.03	0.19		0.01	0.17	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	359	554	461	24	200		57	345		24	290	
v/s Ratio Prot	c0.06	0.04		0.01	c0.03		c0.03	c0.07		0.00	0.03	
v/s Ratio Perm			0.01									
v/c Ratio	0.28	0.13	0.04	0.83	0.32		0.98	0.38		0.08	0.18	
Uniform Delay, d1	12.5	9.5	9.2	18.2	15.2		17.9	13.1		18.0	13.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.1	0.0	110.4	0.9		112.4	0.7		1.5	0.3	
Delay (s)	12.9	9.6	9.3	128.6	16.2		130.3	13.8		19.5	13.5	
Level of Service	B	A	A	F	B		F	B		B	B	
Approach Delay (s)		10.9			42.3			47.4			13.6	
Approach LOS		B			D			D			B	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	37.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		

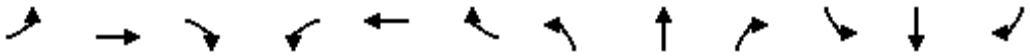
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	116	305	431	43	321	916
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	122	321	454	45	338	964
RTOR Reduction (vph)	0	268	0	30	0	0
Lane Group Flow (vph)	122	53	454	15	338	964
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	10.1	10.1	19.8	19.8	16.1	40.9
Effective Green, g (s)	10.1	10.1	19.8	19.8	16.1	40.9
Actuated g/C Ratio	0.17	0.17	0.32	0.32	0.26	0.67
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	293	262	605	514	467	1249
v/s Ratio Prot	c0.07		0.24		0.19	c0.52
v/s Ratio Perm		0.03		0.01		
v/c Ratio	0.42	0.20	0.75	0.03	0.72	0.77
Uniform Delay, d1	22.8	22.0	18.4	14.0	20.4	6.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.4	5.2	0.0	5.5	3.0
Delay (s)	23.8	22.4	23.6	14.1	25.9	9.9
Level of Service	C	C	C	B	C	A
Approach Delay (s)	22.7		22.7			14.0
Approach LOS	C		C			B

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	48	32	551	13	31	796
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.43	1.00
Satd. Flow (perm)	1770	1583	1863	1583	797	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	34	580	14	33	838
RTOR Reduction (vph)	0	31	0	5	0	0
Lane Group Flow (vph)	51	3	580	9	33	838
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	3.4	3.4	22.1	22.1	22.1	22.1
Effective Green, g (s)	3.4	3.4	22.1	22.1	22.1	22.1
Actuated g/C Ratio	0.10	0.10	0.64	0.64	0.64	0.64
Clearance Time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	174	156	1193	1014	511	1193
v/s Ratio Prot	c0.03		0.31			c0.45
v/s Ratio Perm		0.00		0.01	0.04	
v/c Ratio	0.29	0.02	0.49	0.01	0.06	0.70
Uniform Delay, d1	14.4	14.0	3.2	2.2	2.3	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	0.3	0.0	0.1	1.9
Delay (s)	15.4	14.1	3.5	2.2	2.4	5.9
Level of Service	B	B	A	A	A	A
Approach Delay (s)	14.9		3.5			5.8
Approach LOS	B		A			A

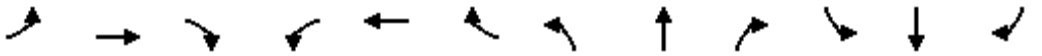
Intersection Summary			
HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	34.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	391	6	56	467	9	8	8	7	10	8	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1549	1770	3539	1549	1770	1722		1770	1747	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1549	1770	3539	1549	1770	1722		1770	1747	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	412	6	59	492	9	8	8	7	11	8	5
RTOR Reduction (vph)	0	0	4	0	0	5	0	7	0	0	5	0
Lane Group Flow (vph)	4	412	2	59	492	4	8	8	0	11	8	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	0.3	11.0	11.0	1.3	12.0	12.0	0.3	2.1		0.3	2.1	
Effective Green, g (s)	0.3	11.0	11.0	1.3	12.0	12.0	0.3	2.1		0.3	2.1	
Actuated g/C Ratio	0.01	0.36	0.36	0.04	0.39	0.39	0.01	0.07		0.01	0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	17	1268	555	75	1383	605	17	118		17	120	
v/s Ratio Prot	0.00	0.12		c0.03	c0.14		0.00	c0.00		c0.01	0.00	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.24	0.32	0.00	0.79	0.36	0.01	0.47	0.07		0.65	0.07	
Uniform Delay, d1	15.1	7.2	6.3	14.6	6.6	5.7	15.1	13.4		15.1	13.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.0	0.2	0.0	40.6	0.2	0.0	19.2	0.3		62.0	0.2	
Delay (s)	22.1	7.3	6.3	55.1	6.8	5.7	34.3	13.6		77.1	13.6	
Level of Service	C	A	A	E	A	A	C	B		E	B	
Approach Delay (s)		7.4			11.9			20.8			42.7	
Approach LOS		A			B			C			D	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	30.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

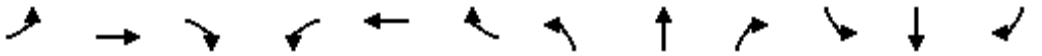


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	5	5	556	10	101	13	611	258	56	849	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	5	5	585	11	106	14	643	272	59	894	1
RTOR Reduction (vph)	0	0	5	0	0	80	0	0	189	0	0	1
Lane Group Flow (vph)	1	5	0	585	11	26	14	643	83	59	894	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.7	2.1	2.1	12.0	13.4	13.4	0.8	16.6	16.6	3.5	19.3	19.3
Effective Green, g (s)	0.7	2.1	2.1	12.0	13.4	13.4	0.8	16.6	16.6	3.5	19.3	19.3
Actuated g/C Ratio	0.01	0.04	0.04	0.22	0.25	0.25	0.01	0.31	0.31	0.06	0.36	0.36
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	44	72	61	760	461	391	51	1557	485	222	1811	564
v/s Ratio Prot	0.00	0.00		c0.17	0.01		0.00	0.13		c0.02	c0.18	
v/s Ratio Perm			0.00			c0.02			0.05			0.00
v/c Ratio	0.02	0.07	0.00	0.77	0.02	0.07	0.27	0.41	0.17	0.27	0.49	0.00
Uniform Delay, d1	26.4	25.1	25.0	19.8	15.4	15.6	26.4	14.9	13.8	24.1	13.6	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.4	0.0	4.7	0.0	0.1	2.9	0.2	0.2	0.6	0.2	0.0
Delay (s)	26.6	25.5	25.1	24.5	15.5	15.7	29.3	15.1	13.9	24.8	13.8	11.2
Level of Service	C	C	C	C	B	B	C	B	B	C	B	B
Approach Delay (s)		25.4			23.1			15.0			14.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	0	16	0	0	0	8	12	0	0	16	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Lane Util. Factor	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770		1583				1770	1863			1863	1583
Flt Permitted	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	1770		1583				1770	1863			1863	1583
Peak-hour factor, PHF	0.95	0.92	0.92	0.92	0.92	0.95	0.92	0.95	0.92	0.95	0.95	0.95
Adj. Flow (vph)	75	0	17	0	0	0	9	13	0	0	17	67
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	60
Lane Group Flow (vph)	75	0	6	0	0	0	9	13	0	0	17	7
Turn Type	Prot		Perm	Prot		Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.0		9.6				1.6	1.6			2.9	2.9
Effective Green, g (s)	3.0		9.6				1.6	1.6			2.9	2.9
Actuated g/C Ratio	0.10		0.33				0.05	0.05			0.10	0.10
Clearance Time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	182		522				97	102			185	157
v/s Ratio Prot	c0.04						0.01	c0.01			c0.01	
v/s Ratio Perm			c0.00									0.00
v/c Ratio	0.41		0.01				0.09	0.13			0.09	0.04
Uniform Delay, d1	12.2		6.6				13.1	13.1			11.9	11.8
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	1.5		0.0				0.4	0.6			0.2	0.1
Delay (s)	13.7		6.6				13.5	13.7			12.1	12.0
Level of Service	B		A				B	B			B	B
Approach Delay (s)		12.4			0.0			13.6			12.0	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	29.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	18.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



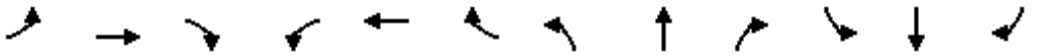
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	142	0	0	103	8	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0						
Lane Util. Factor	1.00	1.00			1.00	1.00						
Frt	1.00	1.00			1.00	0.85						
Flt Protected	0.95	1.00			1.00	1.00						
Satd. Flow (prot)	1770	1863			1863	1583						
Flt Permitted	0.95	1.00			1.00	1.00						
Satd. Flow (perm)	1770	1863			1863	1583						
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	149	0	0	108	8	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	7	0	0	0	0	0	0
Lane Group Flow (vph)	22	149	0	0	108	1	0	0	0	0	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	11.2			5.4	5.4						
Effective Green, g (s)	0.8	11.2			5.4	5.4						
Actuated g/C Ratio	0.02	0.33			0.16	0.16						
Clearance Time (s)	5.0	5.0			5.0	5.0						
Vehicle Extension (s)	3.0	3.0			3.0	3.0						
Lane Grp Cap (vph)	41	607			292	248						
v/s Ratio Prot	0.01	c0.08			c0.06							
v/s Ratio Perm						0.00						
v/c Ratio	0.54	0.25			0.37	0.01						
Uniform Delay, d1	16.6	8.5			13.0	12.2						
Progression Factor	1.00	1.00			1.00	1.00						
Incremental Delay, d2	12.8	0.2			0.8	0.0						
Delay (s)	29.5	8.7			13.8	12.2						
Level of Service	C	A			B	B						
Approach Delay (s)		11.4			13.7			0.0			0.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	34.4	Sum of lost time (s)	28.2
Intersection Capacity Utilization	15.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	0	12	0	0	0	14	6	0	0	6	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Lane Util. Factor	1.00		1.00				1.00	1.00			1.00	1.00
Frt	1.00		0.85				1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770		1583				1770	1863			1863	1583
Flt Permitted	0.95		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	1770		1583				1770	1863			1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	0	13	0	0	0	15	7	0	0	7	15
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	11	0	4	0	0	0	15	7	0	0	7	1
Turn Type	Prot		Perm	Prot		Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5		7.2				0.6	7.3			1.7	1.7
Effective Green, g (s)	0.5		7.2				0.6	7.3			1.7	1.7
Actuated g/C Ratio	0.02		0.29				0.02	0.30			0.07	0.07
Clearance Time (s)	5.0		5.0				5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	36		465				43	555			129	109
v/s Ratio Prot	c0.01						c0.01	0.00			c0.00	
v/s Ratio Perm			c0.00									0.00
v/c Ratio	0.31		0.01				0.35	0.01			0.05	0.01
Uniform Delay, d1	11.8		6.1				11.8	6.1			10.6	10.6
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	4.8		0.0				4.9	0.0			0.2	0.0
Delay (s)	16.6		6.1				16.6	6.1			10.8	10.7
Level of Service	B		A				B	A			B	B
Approach Delay (s)		10.9			0.0			13.3			10.7	
Approach LOS		B			A			B			B	

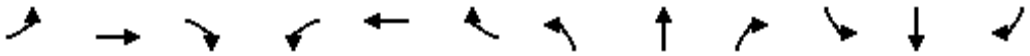
Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.11		
Actuated Cycle Length (s)	24.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	316	63	583	49	51	43	570	255	31	36	54	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	333	66	614	52	54	45	600	268	33	38	57	615
RTOR Reduction (vph)	0	0	492	0	0	41	0	0	21	0	0	478
Lane Group Flow (vph)	333	66	122	52	54	4	600	268	12	38	57	137
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.2	12.1	12.1	3.6	5.5	5.5	11.7	23.1	23.1	2.2	13.6	13.6
Effective Green, g (s)	10.2	12.1	12.1	3.6	5.5	5.5	11.7	23.1	23.1	2.2	13.6	13.6
Actuated g/C Ratio	0.17	0.20	0.20	0.06	0.09	0.09	0.19	0.38	0.38	0.04	0.22	0.22
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	574	370	314	203	168	143	658	1926	599	124	1134	353
v/s Ratio Prot	c0.10	0.04		0.02	0.03		c0.17	0.05		0.01	0.01	
v/s Ratio Perm			c0.08			0.00			0.01			c0.09
v/c Ratio	0.58	0.18	0.39	0.26	0.32	0.03	0.91	0.14	0.02	0.31	0.05	0.39
Uniform Delay, d1	23.4	20.3	21.2	27.4	26.0	25.3	24.1	12.4	11.9	28.7	18.6	20.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.2	0.8	0.7	1.1	0.1	17.0	0.0	0.0	1.4	0.0	0.7
Delay (s)	24.9	20.6	22.0	28.1	27.1	25.4	41.1	12.5	11.9	30.1	18.6	20.9
Level of Service	C	C	C	C	C	C	D	B	B	C	B	C
Approach Delay (s)		22.9			26.9			31.5			21.2	
Approach LOS		C			C			C			C	

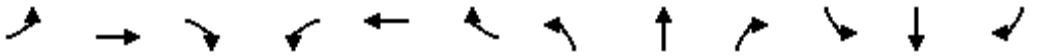
Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	849	0	9	345	7	0	1	17	20	1	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.87		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1770	3528			1604		1770	1573	
Flt Permitted	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539		1770	3528			1604		1770	1573	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	894	0	9	363	7	0	1	18	21	1	26
RTOR Reduction (vph)	0	0	0	0	1	0	0	17	0	0	24	0
Lane Group Flow (vph)	24	894	0	9	369	0	0	2	0	21	3	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Perm			Split		
Protected Phases	7	4		3	8			2		6	6	
Permitted Phases							2					
Actuated Green, G (s)	0.4	23.1		0.4	23.1			1.9		3.3	3.3	
Effective Green, g (s)	0.4	23.1		0.4	23.1			1.9		3.3	3.3	
Actuated g/C Ratio	0.01	0.52		0.01	0.52			0.04		0.07	0.07	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	16	1829		16	1823			68		131	116	
v/s Ratio Prot	c0.01	c0.25		0.01	0.10			c0.00		c0.01	0.00	
v/s Ratio Perm												
v/c Ratio	1.50	0.49		0.56	0.20			0.03		0.16	0.03	
Uniform Delay, d1	22.2	7.0		22.1	5.8			20.5		19.4	19.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	410.1	0.2		38.3	0.1			0.2		0.6	0.1	
Delay (s)	432.3	7.2		60.3	5.9			20.7		20.0	19.3	
Level of Service	F	A		E	A			C		B	B	
Approach Delay (s)		18.3			7.2			20.7			19.6	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	44.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

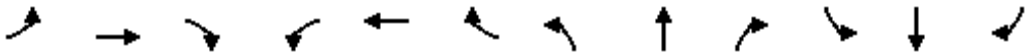
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	1	17	20	0	28	10	206	56	60	92	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00		0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1550	1770		1550	1770	1863	1550	1770	1863	1550
Flt Permitted	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1550	1770		1550	1770	1863	1550	1770	1863	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	1	18	21	0	29	11	217	59	63	97	11
RTOR Reduction (vph)	0	0	17	0	0	27	0	0	42	0	0	7
Lane Group Flow (vph)	17	1	1	21	0	2	11	217	17	63	97	4
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.3	1.7	1.7	0.3		1.7	0.3	8.2	8.2	1.8	9.7	9.7
Effective Green, g (s)	0.3	1.7	1.7	0.3		1.7	0.3	8.2	8.2	1.8	9.7	9.7
Actuated g/C Ratio	0.01	0.06	0.06	0.01		0.06	0.01	0.29	0.29	0.06	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	19	113	94	19		94	19	546	454	114	645	537
v/s Ratio Prot	0.01	0.00		c0.01			0.01	c0.12		c0.04	0.05	
v/s Ratio Perm			0.00			c0.00			0.01			0.00
v/c Ratio	0.89	0.01	0.01	1.11		0.02	0.58	0.40	0.04	0.55	0.15	0.01
Uniform Delay, d1	13.8	12.4	12.4	13.8		12.4	13.8	7.9	7.1	12.7	6.3	6.0
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	155.2	0.0	0.0	242.0		0.1	36.3	0.5	0.0	5.7	0.1	0.0
Delay (s)	169.0	12.4	12.4	255.9		12.4	50.1	8.4	7.1	18.4	6.4	6.0
Level of Service	F	B	B	F		B	D	A	A	B	A	A
Approach Delay (s)		86.4			114.7			9.7			10.8	
Approach LOS		F			F			A			B	

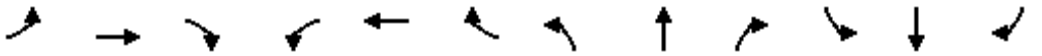
Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	28.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



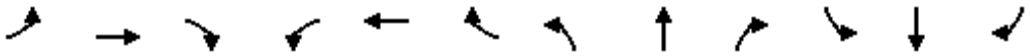
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	36	71	202	49	16	58	633	226	6	759	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0		3.0	4.3	4.3	2.0	3.2	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1825	1583		1780		1770	1863	1583	1770	3532	
Flt Permitted		0.98	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1825	1583		1780		1770	1863	1583	1770	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	38	75	213	52	17	61	666	238	6	799	11
RTOR Reduction (vph)	0	0	68	0	3	0	0	0	129	0	1	0
Lane Group Flow (vph)	0	65	7	0	279	0	61	666	109	6	809	0
Turn Type	Split		Perm	Split			Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			
Actuated Green, G (s)		5.9	5.9		17.0		3.6	32.0	32.0	0.9	29.4	
Effective Green, g (s)		6.9	6.9		18.0		4.6	33.0	33.0	1.9	30.4	
Actuated g/C Ratio		0.10	0.10		0.25		0.06	0.46	0.46	0.03	0.42	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.3	5.3	3.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		175	151		444		113	853	725	47	1489	
v/s Ratio Prot		c0.04			c0.16		c0.03	c0.36		0.00	0.23	
v/s Ratio Perm			0.00						0.07			
v/c Ratio		0.37	0.05		0.63		0.54	0.78	0.15	0.13	0.54	
Uniform Delay, d1		30.6	29.6		24.1		32.7	16.5	11.4	34.3	15.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.0		2.0		2.5	4.3	0.0	0.4	0.4	
Delay (s)		31.1	29.7		26.1		35.2	20.8	11.4	34.7	16.0	
Level of Service		C	C		C		D	C	B	C	B	
Approach Delay (s)		30.3			26.1			19.4			16.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



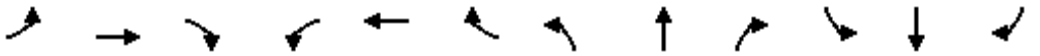
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	232	177	0	404	396	5	0	387	371	0	348	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	0.95	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1681	1756		1770	3533			1863	1583		1863	1583
Flt Permitted	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1681	1756		1770	3533			1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	244	186	0	425	417	5	0	407	391	0	366	421
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	303	0	0	0
Lane Group Flow (vph)	210	220	0	425	421	0	0	407	88	0	366	421
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	16.8	16.8		26.1	26.1			22.8	22.8		21.9	106.2
Effective Green, g (s)	17.8	17.8		27.1	27.1			23.8	23.8		22.9	106.2
Actuated g/C Ratio	0.17	0.17		0.26	0.26			0.22	0.22		0.22	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		5.0	5.0			3.0	3.0		2.5	
Lane Grp Cap (vph)	282	294		452	902			418	355		402	1583
v/s Ratio Prot	0.12	c0.13		c0.24	0.12			c0.22			c0.20	
v/s Ratio Perm									0.06			0.27
v/c Ratio	0.74	0.75		0.94	0.47			0.97	0.25		0.91	0.27
Uniform Delay, d1	42.0	42.1		38.8	33.4			40.9	33.8		40.6	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	9.7	9.5		28.6	0.8			36.9	0.4		24.3	0.4
Delay (s)	51.7	51.5		67.3	34.2			77.8	34.2		65.0	0.4
Level of Service	D	D		E	C			E	C		E	A
Approach Delay (s)		51.6			50.8			56.4			30.4	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM Average Control Delay	46.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	106.2	Sum of lost time (s)	14.6
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



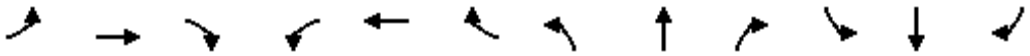
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	571	197	54	499	21	114	54	65	8	40	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		1.00			1.00	0.85		0.96	
Flt Protected		1.00	1.00		1.00			0.97	1.00		0.99	
Satd. Flow (prot)		1859	1583		1845			1802	1583		1786	
Flt Permitted		0.98	1.00		0.92			0.82	1.00		0.96	
Satd. Flow (perm)		1819	1583		1700			1532	1583		1724	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	601	207	57	525	22	120	57	68	8	42	18
RTOR Reduction (vph)	0	0	62	0	2	0	0	0	54	0	14	0
Lane Group Flow (vph)	0	623	145	0	602	0	0	177	14	0	54	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		32.4	32.4		32.4			9.4	9.4		9.4	
Effective Green, g (s)		33.4	33.4		33.4			10.4	10.4		10.4	
Actuated g/C Ratio		0.67	0.67		0.67			0.21	0.21		0.21	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1215	1057		1136			319	329		359	
v/s Ratio Prot												
v/s Ratio Perm		0.34	0.09		c0.35			c0.12	0.01		0.03	
v/c Ratio		0.51	0.14		0.53			0.55	0.04		0.15	
Uniform Delay, d1		4.2	3.0		4.3			17.7	15.8		16.2	
Progression Factor		1.00	1.00		0.75			1.00	1.00		1.00	
Incremental Delay, d2		1.5	0.3		1.6			1.2	0.0		0.1	
Delay (s)		5.7	3.3		4.8			18.9	15.8		16.3	
Level of Service		A	A		A			B	B		B	
Approach Delay (s)		5.1			4.8			18.1			16.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



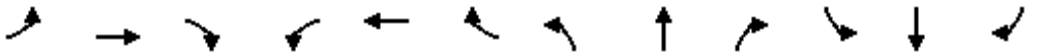
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	609	18	35	650	61	12	44	18	117	76	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.2		3.2	3.2		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	1855		1770	1839		1770	1781			1808	1583
Flt Permitted	0.28	1.00		0.33	1.00		0.52	1.00			0.78	1.00
Satd. Flow (perm)	517	1855		614	1839		962	1781			1447	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	48	641	19	37	684	64	13	46	19	123	80	97
RTOR Reduction (vph)	0	2	0	0	5	0	0	15	0	0	0	76
Lane Group Flow (vph)	48	658	0	37	743	0	13	50	0	0	203	21
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		4
Actuated Green, G (s)	31.9	31.9		31.9	31.9		9.9	9.9			9.9	9.9
Effective Green, g (s)	32.9	32.9		32.9	32.9		10.9	10.9			10.9	10.9
Actuated g/C Ratio	0.66	0.66		0.66	0.66		0.22	0.22			0.22	0.22
Clearance Time (s)	4.2	4.2		4.2	4.2		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	340	1221		404	1210		210	388			315	345
v/s Ratio Prot		0.35			c0.40			0.03				
v/s Ratio Perm	0.09			0.06			0.01				c0.14	0.01
v/c Ratio	0.14	0.54		0.09	0.61		0.06	0.13			0.64	0.06
Uniform Delay, d1	3.2	4.5		3.1	4.9		15.5	15.7			17.8	15.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.9	1.7		0.4	2.3		0.0	0.1			3.4	0.0
Delay (s)	4.1	6.2		3.6	7.2		15.5	15.8			21.2	15.5
Level of Service	A	A		A	A		B	B			C	B
Approach Delay (s)		6.1			7.1			15.7			19.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



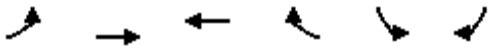
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	556	33	471	524	17	41	32	330	69	99	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0	3.0		3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.98	
Satd. Flow (prot)	1770	1847		1770	1854			1812	1583		1775	
Flt Permitted	0.95	1.00		0.95	1.00			0.63	1.00		0.87	
Satd. Flow (perm)	1770	1847		1770	1854			1167	1583		1577	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	585	35	496	552	18	43	34	347	73	104	55
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	289	0	12	0
Lane Group Flow (vph)	44	618	0	496	569	0	0	77	58	0	220	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		
Actuated Green, G (s)	3.0	42.2		29.9	69.1			15.7	15.7		15.7	
Effective Green, g (s)	4.0	43.2		30.9	70.1			16.7	16.7		16.7	
Actuated g/C Ratio	0.04	0.43		0.31	0.70			0.17	0.17		0.17	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0	4.0		4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)	71	798		547	1300			195	264		263	
v/s Ratio Prot	0.02	c0.33		c0.28	0.31							
v/s Ratio Perm								0.07	0.04		c0.14	
v/c Ratio	0.62	0.77		0.91	0.44			0.39	0.22		0.84	
Uniform Delay, d1	47.3	24.2		33.2	6.4			37.1	36.0		40.3	
Progression Factor	1.08	0.82		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	9.9	4.2		18.3	1.1			0.5	0.2		19.4	
Delay (s)	60.8	24.1		51.4	7.5			37.6	36.2		59.7	
Level of Service	E	C		D	A			D	D		E	
Approach Delay (s)		26.6			28.0			36.4			59.7	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	112	256	155	74	14	635	1054	47	30	1187	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.6	3.9	3.0	1.6	2.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	118	269	163	78	15	668	1109	49	32	1249	4
RTOR Reduction (vph)	0	0	225	0	0	13	0	0	27	0	0	3
Lane Group Flow (vph)	72	118	44	163	78	2	668	1109	22	32	1249	1
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	14.0	14.0	14.0	14.0	14.0	14.0	17.0	40.7	40.7	6.0	31.7	31.7
Effective Green, g (s)	15.0	15.0	15.0	15.0	15.0	15.0	18.0	43.0	41.7	7.0	34.0	32.7
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.20	0.47	0.46	0.08	0.37	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.9	4.9	4.0	3.9	3.9
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	290	305	259	290	305	259	675	1661	721	135	1314	565
v/s Ratio Prot	0.04	c0.06		c0.09	0.04		c0.19	0.31		0.02	c0.35	
v/s Ratio Perm			0.03			0.00			0.01			0.00
v/c Ratio	0.25	0.39	0.17	0.56	0.26	0.01	0.99	0.67	0.03	0.24	0.95	0.00
Uniform Delay, d1	33.4	34.2	32.9	35.3	33.4	32.1	36.7	18.8	13.8	39.8	28.0	19.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	0.1	1.5	0.2	0.0	31.6	1.1	0.0	0.3	14.7	0.0
Delay (s)	33.5	34.5	33.1	36.8	33.6	32.1	68.3	19.9	13.8	40.1	42.7	19.0
Level of Service	C	C	C	D	C	C	E	B	B	D	D	B
Approach Delay (s)		33.5			35.5			37.4			42.6	
Approach LOS		C			D			D			D	

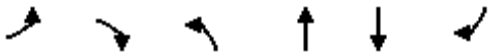
Intersection Summary			
HCM Average Control Delay	38.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	91.6	Sum of lost time (s)	9.6
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	40	501	498	198	323	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	3539	1863	1546	3421	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1770	3539	1863	1546	3421	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	527	524	208	340	17
RTOR Reduction (vph)	0	0	0	123	7	0
Lane Group Flow (vph)	42	527	524	85	350	0
Confl. Peds. (#/hr)				4		4
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	1.2	22.0	16.8	16.8	11.1	
Effective Green, g (s)	1.2	22.0	16.8	16.8	11.1	
Actuated g/C Ratio	0.03	0.54	0.41	0.41	0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	52	1894	762	632	924	
v/s Ratio Prot	c0.02	0.15	c0.28		c0.10	
v/s Ratio Perm				0.05		
v/c Ratio	0.81	0.28	0.69	0.13	0.38	
Uniform Delay, d1	19.8	5.2	10.0	7.6	12.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	58.8	0.1	2.6	0.1	0.3	
Delay (s)	78.7	5.3	12.6	7.7	12.5	
Level of Service	E	A	B	A	B	
Approach Delay (s)		10.7	11.2		12.5	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	292	579	802	7	6	536
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.95	1.00	1.00
Satd. Flow (prot)	1770	1546	1681	1687	1863	1561
Flt Permitted	0.95	1.00	0.95	0.58	1.00	1.00
Satd. Flow (perm)	1770	1546	1681	1029	1863	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	307	609	844	7	6	564
RTOR Reduction (vph)	0	461	0	0	0	400
Lane Group Flow (vph)	307	148	422	429	6	164
Confl. Peds. (#/hr)		2				2
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	14.1	14.1	16.0	36.1	16.1	16.1
Effective Green, g (s)	14.1	14.1	16.0	36.1	16.1	16.1
Actuated g/C Ratio	0.24	0.24	0.27	0.62	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	429	375	462	819	515	432
v/s Ratio Prot			c0.25	0.14	0.00	
v/s Ratio Perm	c0.17	0.10		c0.18		0.11
v/c Ratio	0.72	0.39	0.91	0.52	0.01	0.38
Uniform Delay, d1	20.2	18.5	20.4	6.2	15.3	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.6	0.7	22.4	0.6	0.0	0.6
Delay (s)	25.8	19.2	42.8	6.8	15.3	17.6
Level of Service	C	B	D	A	B	B
Approach Delay (s)	21.4			24.7	17.5	
Approach LOS	C			C	B	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection 13 **New Meadow Dr/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	28	29	102.5%	58.0	6.8	E
	Through						
	Right Turn	6	7	110.0%	13.9	6.0	B
	Subtotal	**34**	**35**	**103.8%**	**49.9**	**7.3**	**D**
EB	Left Turn	9	10	107.8%	67.7	13.4	E
	Through	648	633	97.7%	6.0	0.4	A
	Right Turn						
	Subtotal	**657**	**643**	**97.8%**	**6.9**	**0.6**	**A**
WB	Left Turn						
	Through	1,019	671	65.9%	13.5	0.8	B
	Right Turn	217	141	65.0%	18.1	1.5	B
	Subtotal	**1,236**	**813**	**65.7%**	**14.3**	**0.8**	**B**
Total		**1,927**	**1,491**	**77.4%**	**12.0**	**0.6**	**B**

Intersection 10 **Diamond Creek Blvd/Blue Oaks Blvd-Wal-Mart** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	71	53	75.1%	255.2	51.4	F
	Through	35	26	75.4%	252.0	39.5	F
	Right Turn	8	5	62.5%	207.4	60.4	F
	Subtotal	**114**	**85**	**74.3%**	**250.9**	**43.8**	**F**
SB	Left Turn	62	58	93.1%	44.0	5.6	D
	Through	6	6	101.7%	53.2	16.6	D
	Right Turn	43	44	102.3%	42.1	6.3	D
	Subtotal	**111**	**108**	**97.1%**	**43.7**	**5.6**	**D**
EB	Left Turn	25	26	103.2%	91.7	35.9	F
	Through	438	437	99.9%	27.8	3.6	C
	Right Turn	8	8	103.8%	10.0	2.4	A
	Subtotal	**471**	**472**	**100.1%**	**31.1**	**5.4**	**C**
WB	Left Turn	7	4	60.0%	96.0	30.0	F
	Through	763	509	66.8%	59.8	5.6	E
	Right Turn	11	7	66.4%	34.6	11.3	C
	Subtotal	**781**	**521**	**66.7%**	**59.7**	**5.7**	**E**
Total		**1,477**	**1,185**	**80.2%**	**60.5**	**5.3**	**E**

Intersection 15 **Foothills Blvd/Blue Oaks Blvd-Hwy 65 NB Ramp** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	223	148	66.1%	267.2	16.3	F
	Through	197	181	91.6%	77.6	14.9	E
	Right Turn	55	48	87.5%	2.9	0.5	A
	Subtotal	**475**	**376**	**79.2%**	**142.7**	**9.3**	**F**
SB	Left Turn	131	102	78.2%	207.2	31.5	F
	Through	209	199	95.3%	54.8	5.7	D
	Right Turn	212	119	56.3%	338.6	34.4	F
	Subtotal	**552**	**421**	**76.2%**	**172.5**	**17.5**	**F**
EB	Left Turn	100	65	65.4%	210.2	26.7	F
	Through	487	459	94.2%	80.1	3.8	F
	Right Turn	88	80	90.9%	86.6	9.6	F
	Subtotal	**675**	**604**	**89.5%**	**95.1**	**5.5**	**F**
WB	Left Turn	69	49	71.3%	67.5	4.8	E
	Through	802	546	68.0%	59.8	1.4	E
	Right Turn	54	33	61.9%	11.6	3.2	B
	Subtotal	**925**	**628**	**67.9%**	**57.9**	**1.3**	**E**
Total		**2,627**	**2,029**	**77.2%**	**108.3**	**4.8**	**F**

Intersection 11 **Woodcreek Oaks Blvd-Pleasant Grove Blvd/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	18	19	103.9%	63.2	12.2	E
	Through	65	63	97.5%	59.4	5.1	E
	Right Turn	110	111	100.7%	44.5	14.1	D
	Subtotal	**193**	**193**	**99.9%**	**51.4**	**8.4**	**D**
SB	Left Turn	69	68	99.1%	101.7	14.9	F
	Through	48	52	107.9%	57.9	10.1	E
	Right Turn	12	12	95.8%	23.8	5.5	C
	Subtotal	**129**	**132**	**102.1%**	**78.2**	**9.3**	**E**
EB	Left Turn	23	21	91.3%	55.3	10.2	E
	Through	405	397	98.1%	19.0	3.8	B
	Right Turn	58	60	104.0%	16.3	3.6	B
	Subtotal	**486**	**479**	**98.5%**	**20.2**	**3.5**	**C**
WB	Left Turn	199	130	65.3%	69.9	3.4	E
	Through	801	533	66.5%	28.8	2.2	C
	Right Turn						
	Subtotal	**1,000**	**662**	**66.2%**	**36.8**	**2.2**	**D**
Total		**1,808**	**1,466**	**81.1%**	**37.0**	**1.7**	**D**

Intersection 17 **Washington Blvd/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	163	151	92.5%	101.7	25.4	F
	Through						
	Right Turn	311	301	96.8%	79.2	21.0	E
	Subtotal	**474**	**452**	**95.3%**	**86.9**	**14.9**	**F**
SB	Left Turn	59	48	81.7%	153.6	73.9	F
	Through	98	95	96.9%	69.5	11.8	E
	Right Turn	91	92	100.9%	25.7	8.2	C
	Subtotal	**248**	**235**	**94.8%**	**70.3**	**20.5**	**E**
EB	Left Turn						
	Through	193	169	87.5%	50.2	3.0	D
	Right Turn	275	178	64.6%	138.6	9.2	F
	Subtotal	**468**	**347**	**74.0%**	**95.6**	**3.8**	**F**
WB	Left Turn	148	128	86.5%	153.2	36.0	F
	Through	288	288	99.9%	26.4	1.8	C
	Right Turn	99	102	102.5%	5.8	0.7	A
	Subtotal	**535**	**517**	**96.7%**	**53.9**	**9.8**	**D**
Total		**1,725**	**1,551**	**89.9%**	**75.2**	**5.5**	**E**

Intersection 12 **Wood Meadow Dwy/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	52	50	96.9%	31.3	3.4	C
	Subtotal	**52**	**50**	**96.9%**	**31.3**	**3.4**	**C**
SB	Left Turn	21	22	103.8%	67.7	12.1	E
	Through						
	Right Turn						
	Subtotal	**21**	**22**	**103.8%**	**67.7**	**12.1**	**E**
EB	Left Turn						
	Through	584	576	98.6%	19.1	2.0	B
	Right Turn						
	Subtotal	**584**	**576**	**98.6%**	**19.1**	**2.0**	**B**
WB	Left Turn	18	12	63.9%	73.5	8.8	E
	Through	1,001	662	66.1%	19.6	0.8	B
	Right Turn	6	5	75.0%	2.8	1.0	A
	Subtotal	**1,025**	**678**	**66.2%**	**20.4**	**0.8**	**C**
Total		**1,682**	**1,326**	**78.8%**	**21.1**	**1.4**	**C**

Intersection 14 **Collector C/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	60	42	70.7%	260.6	170.4	F
	Through	8	4	45.0%	165.6	214.4	F
	Right Turn	84	26	31.4%	619.5	389.8	F
	Subtotal	**152**	**72**	**47.6%**	**339.6**	**184.6**	**F**
SB	Left Turn	92	33	36.1%	946.9	905.4	F
	Through	8	1	15.0%	798.5	753.9	F
	Right Turn	64	23	35.6%	1027.6	1318.9	F
	Subtotal	**164**	**57**	**34.9%**	**865.6**	**740.4**	**F**
EB	Left Turn	88	67	75.9%	279.9	226.7	F
	Through	2,528	2,001	79.1%	89.2	25.9	F
	Right Turn	84	64	76.2%	93.4	43.0	F
	Subtotal	**2,700**	**2,132**	**78.9%**	**94.6**	**27.5**	**F**
WB	Left Turn	40	23	57.0%	57.3	27.1	E
	Through	4,824	3,030	62.8%	11.0	3.9	B
	Right Turn	84	50	59.0%	9.4	2.9	A
	Subtotal	**4,948**	**3,102**	**62.7%**	**11.3**	**3.9**	**B**
Total		**7,964**	**5,364**	**67.3%**	**54.1**	**11.9**	**D**

Intersection 16 **Fidelity Way/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	416	159	38.2%	1678.6	3541.2	F
	Subtotal	**416**	**159**	**38.2%**	**509.8**	**450.0**	**F**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,456	1,083	74.4%	38.2	16.3	D
	Right Turn	20	14	70.0%	4.7	6.2	A
	Subtotal	**1,476**	**1,097**	**74.3%**	**37.7**	**16.2**	**D**
WB	Left Turn	40	31	77.0%	20.5	11.7	C
	Through	2,132	2,036	95.5%	7.0	2.3	A
	Right Turn						
	Subtotal	**2,172**	**2,067**	**95.2%**	**7.2**	**2.2**	**A**
Total		**4,064**	**3,322**	**81.8%**	**36.2**	**15.8**	**D**

Intersection 90 **Eureka Rd/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	572	567	99.1%	69.6	9.7	E
	Through	644	636	98.7%	50.4	3.0	D
	Right Turn	20	22	112.0%	39.7	15.8	D
	Subtotal	**1,236**	**1,225**	**99.1%**	**59.1**	**5.7**	**E**
SB	Left Turn	964	788	81.7%	170.4	37.2	F
	Through	820	796	97.1%	53.8	4.6	D
	Right Turn						
	Subtotal	**1,784**	**1,584**	**88.8%**	**112.3**	**20.5**	**F**
EB	Left Turn	164	149	91.0%	84.1	29.8	F
	Through	1,372	1,312	95.6%	39.9	3.5	D
	Right Turn	452	418	92.5%	37.1	5.3	D
	Subtotal	**1,988**	**1,879**	**94.5%**	**43.1**	**5.4**	**D**
WB	Left Turn	68	55	81.2%	84.6	18.6	F
	Through	1,712	1,600	93.4%	51.3	12.2	D
	Right Turn	592	566	95.5%	34.1	13.2	C
	Subtotal	**2,372**	**2,220**	**93.6%**	**47.8**	**12.7**	**D**
Total		**7,380**	**6,908**	**93.6%**	**63.3**	**6.5**	**E**

Intesrection 105 **Rocky Ridge Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	308	297	96.5%	98.8	20.5	F
	Through	516	532	103.0%	42.7	3.5	D
	Right Turn	272	273	100.4%	25.8	4.1	C
	Subtotal	**1,096**	**1,102**	**100.5%**	**53.9**	**7.6**	**D**
SB	Left Turn	272	262	96.5%	91.4	10.4	F
	Through	1,188	1,193	100.4%	48.9	3.2	D
	Right Turn	524	499	95.3%	78.1	20.7	E
	Subtotal	**1,984**	**1,954**	**98.5%**	**62.1**	**6.9**	**E**
EB	Left Turn	140	117	83.7%	101.8	14.3	F
	Through	1,496	1,408	94.1%	31.4	4.2	C
	Right Turn	160	165	103.3%	16.0	7.1	B
	Subtotal	**1,796**	**1,690**	**94.1%**	**34.8**	**4.0**	**C**
WB	Left Turn	176	168	95.2%	73.1	17.5	E
	Through	1,904	1,739	91.3%	45.5	6.3	D
	Right Turn	184	154	83.9%	25.1	8.5	C
	Subtotal	**2,264**	**2,061**	**91.0%**	**46.3**	**6.7**	**D**
Total		**7,140**	**6,808**	**95.3%**	**49.3**	**2.5**	**D**

Intersection 102 **Santa Clara Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	88	86	98.2%	67.2	12.4	E
	Through	36	32	90.0%	63.7	18.0	E
	Right Turn	120	115	95.7%	20.4	2.4	C
	Subtotal	**244**	**234**	**95.7%**	**43.6**	**5.7**	**D**
SB	Left Turn	176	170	96.4%	56.0	3.3	E
	Through	96	94	97.5%	52.9	8.0	D
	Right Turn	132	132	99.7%	33.9	6.5	C
	Subtotal	**404**	**395**	**97.7%**	**48.1**	**4.4**	**D**
EB	Left Turn	148	124	83.5%	50.0	13.2	D
	Through	1,744	1,666	95.6%	25.4	3.7	C
	Right Turn	44	41	93.6%	27.4	7.6	C
	Subtotal	**1,936**	**1,831**	**94.6%**	**27.1**	**3.7**	**C**
WB	Left Turn	176	143	81.4%	42.0	7.1	D
	Through	2,484	2,206	88.8%	22.1	2.3	C
	Right Turn	44	41	92.7%	10.8	2.9	B
	Subtotal	**2,704**	**2,390**	**88.4%**	**23.2**	**2.6**	**C**
Total		**5,288**	**4,849**	**91.7%**	**27.7**	**2.0**	**C**

Intersection 103 **Sierra Gardens Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	176	166	94.3%	84.0	51.6	F
	Through	40	36	91.0%	95.3	34.8	F
	Right Turn	32	34	105.0%	73.1	35.7	E
	Subtotal	**248**	**236**	**95.2%**	**84.3**	**46.0**	**F**
SB	Left Turn	240	222	92.3%	51.8	7.7	D
	Through	52	51	97.7%	52.2	10.0	D
	Right Turn	40	38	96.0%	45.6	11.1	D
	Subtotal	**332**	**311**	**93.6%**	**51.1**	**7.2**	**D**
EB	Left Turn	48	43	90.0%	80.0	23.1	E
	Through	1,792	1,723	96.2%	14.2	1.8	B
	Right Turn	40	41	103.0%	8.0	1.5	A
	Subtotal	**1,880**	**1,808**	**96.1%**	**15.7**	**1.8**	**B**
WB	Left Turn	28	21	75.7%	97.7	24.1	F
	Through	2,672	2,387	89.3%	30.4	4.3	C
	Right Turn						
	Subtotal	**2,700**	**2,408**	**89.2%**	**31.0**	**4.3**	**C**
Total		**5,160**	**4,762**	**92.3%**	**29.3**	**4.6**	**C**

Intesrection 101 **N. Sunrise Ave/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	412	381	92.5%	117.8	42.7	F
	Through	524	527	100.5%	50.3	4.0	D
	Right Turn	172	177	103.0%	26.4	3.9	C
	Subtotal	**1,108**	**1,085**	**97.9%**	**70.4**	**16.0**	**E**
SB	Left Turn	192	205	106.7%	67.3	13.2	E
	Through	828	846	102.2%	52.7	5.0	D
	Right Turn	488	478	98.0%	24.5	6.4	C
	Subtotal	**1,508**	**1,529**	**101.4%**	**46.0**	**6.0**	**D**
EB	Left Turn	452	319	70.6%	245.7	56.6	F
	Through	1,684	1,546	91.8%	60.4	12.6	E
	Right Turn	200	200	100.2%	13.2	1.0	B
	Subtotal	**2,336**	**2,065**	**88.4%**	**84.6**	**18.4**	**F**
WB	Left Turn	216	200	92.8%	57.1	7.2	E
	Through	2,340	2,026	86.6%	41.5	4.8	D
	Right Turn	152	130	85.8%	49.3	8.5	D
	Subtotal	**2,708**	**2,357**	**87.0%**	**43.3**	**4.8**	**D**
Total		**7,660**	**7,037**	**91.9%**	**60.1**	**5.4**	**E**

Intersection 104 **Target Dwy/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	144	132	91.9%	84.7	25.7	F
	Through	24	22	93.3%	77.0	14.1	E
	Right Turn	56	52	92.1%	43.2	13.5	D
	Subtotal	**224**	**206**	**92.1%**	**73.8**	**18.7**	**E**
SB	Left Turn	112	107	95.7%	56.9	12.8	E
	Through	12	14	116.7%	60.5	25.9	E
	Right Turn	136	123	90.6%	42.4	7.6	D
	Subtotal	**260**	**244**	**94.0%**	**50.5**	**8.1**	**D**
EB	Left Turn	168	148	87.9%	89.9	30.2	F
	Through	1,664	1,592	95.7%	16.5	2.3	B
	Right Turn	64	64	100.6%	16.7	5.9	B
	Subtotal	**1,896**	**1,804**	**95.1%**	**22.7**	**4.4**	**C**
WB	Left Turn	72	68	95.0%	75.0	13.8	E
	Through	2,500	2,247	89.9%	34.2	3.3	C
	Right Turn	16	15	92.5%	33.1	16.7	C
	Subtotal	**2,588**	**2,330**	**90.0%**	**35.4**	**3.1**	**D**
Total		**4,968**	**4,585**	**92.3%**	**32.9**	**2.5**	**C**

Intersection 77 **Douglas Blvd/E. Roseville Pkwy** **Signal**

SimTraffic Post-Processor **Amoruso Ranch Specific Plan EIR**
Average Results from 10 Runs **2035 CIP Plus Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	268	272	101.3%	68.1	8.6	E
	Through	728	730	100.3%	49.4	4.6	D
	Right Turn	56	60	107.1%	31.7	9.4	C
	Subtotal	**1,052**	**1,062**	**100.9%**	**53.3**	**4.4**	**D**
SB	Left Turn	836	760	90.9%	133.9	28.9	F
	Through	1,120	1,107	98.9%	53.2	3.2	D
	Right Turn	144	142	98.6%	6.8	1.1	A
	Subtotal	**2,100**	**2,009**	**95.7%**	**80.6**	**12.2**	**F**
EB	Left Turn	220	193	87.8%	55.8	9.1	E
	Through	1,836	1,668	90.8%	30.5	2.8	C
	Right Turn	460	406	88.3%	25.4	2.4	C
	Subtotal	**2,516**	**2,267**	**90.1%**	**31.8**	**2.1**	**C**
WB	Left Turn	124	114	91.6%	80.3	11.5	F
	Through	1,688	1,637	97.0%	84.9	11.5	F
	Right Turn	936	833	89.0%	94.7	24.8	F
	Subtotal	**2,748**	**2,584**	**94.0%**	**87.8**	**15.5**	**F**
Total		**8,416**	**7,921**	**94.1%**	**65.4**	**5.7**	**E**

Intersection 87 **N. Sunrise Ave/Eureka Rd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	564	535	94.9%	67.0	13.8	E
	Through	556	564	101.4%	43.9	2.9	D
	Right Turn	216	211	97.8%	4.0	0.3	A
	Subtotal	**1,336**	**1,310**	**98.1%**	**47.0**	**6.4**	**D**
SB	Left Turn	180	170	94.4%	73.3	9.2	E
	Through	504	491	97.4%	51.3	4.8	D
	Right Turn	272	275	101.2%	24.7	4.4	C
	Subtotal	**956**	**936**	**97.9%**	**47.6**	**3.3**	**D**
EB	Left Turn	232	221	95.3%	83.2	14.7	F
	Through	1,660	1,608	96.9%	28.0	1.1	C
	Right Turn	388	375	96.7%	12.5	1.3	B
	Subtotal	**2,280**	**2,205**	**96.7%**	**31.0**	**2.0**	**C**
WB	Left Turn	200	186	93.0%	114.2	18.0	F
	Through	2,552	2,406	94.3%	72.7	22.4	E
	Right Turn	100	103	103.2%	34.8	20.8	C
	Subtotal	**2,852**	**2,695**	**94.5%**	**74.2**	**21.7**	**E**
Total		**7,424**	**7,146**	**96.3%**	**52.3**	**8.5**	**D**

Intersection 85 **I-80 WB Ramps/Atlantic** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn						
	Through						
	Right Turn	1,116	1,118	100.1%	1.8	0.4	A
	Subtotal	**1,116**	**1,118**	**100.1%**	**1.8**	**0.4**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	880	856	97.3%	20.5	2.9	C
	Right Turn	728	638	87.6%	30.6	3.2	C
	Subtotal	**1,608**	**1,494**	**92.9%**	**24.9**	**2.5**	**C**
WB	Left Turn	1,024	831	81.2%	127.9	33.5	F
	Through	1,276	1,197	93.8%	7.8	1.4	A
	Right Turn						
	Subtotal	**2,300**	**2,028**	**88.2%**	**57.1**	**14.5**	**E**
Total		**5,024**	**4,640**	**92.4%**	**33.3**	**6.4**	**C**

Intersection 86 **I-80 EB Ramps/Eureka Rd-Atlantic St** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	160	159	99.5%	58.3	25.3	E
	Through	476	478	100.3%	54.5	5.8	D
	Right Turn	580	595	102.6%	7.2	0.3	A
	Subtotal	**1,216**	**1,232**	**101.3%**	**32.3**	**4.0**	**C**
SB	Left Turn	412	351	85.1%	176.6	80.4	F
	Through						
	Right Turn	376	344	91.4%	103.9	69.8	F
	Subtotal	**788**	**694**	**88.1%**	**142.5**	**65.5**	**F**
EB	Left Turn	228	149	65.4%	283.1	45.3	F
	Through	1,432	1,413	98.7%	36.0	2.7	D
	Right Turn	336	297	88.5%	14.6	1.1	B
	Subtotal	**1,996**	**1,859**	**93.1%**	**52.3**	**4.6**	**D**
WB	Left Turn						
	Through	1,820	1,677	92.2%	40.2	23.6	D
	Right Turn	1,588	1,503	94.7%	45.7	16.0	D
	Subtotal	**3,408**	**3,180**	**93.3%**	**42.9**	**20.1**	**D**
Total		**7,408**	**6,966**	**94.0%**	**53.1**	**9.1**	**D**

Intersection 38 **Pleasant Grove Blvd/Fairway Dr** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	156	133	85.1%	97.9	22.6	F
	Through	348	323	92.7%	46.6	2.0	D
	Right Turn	149	135	90.3%	22.5	2.8	C
	Subtotal	**653**	**590**	**90.4%**	**52.7**	**6.5**	**D**
SB	Left Turn	33	27	80.3%	118.9	32.5	F
	Through	263	222	84.3%	142.4	39.6	F
	Right Turn	46	35	75.2%	135.8	54.5	F
	Subtotal	**342**	**283**	**82.7%**	**139.2**	**39.8**	**F**
EB	Left Turn	75	79	104.8%	62.7	7.3	E
	Through	140	139	99.1%	51.9	4.4	D
	Right Turn	138	117	84.6%	131.9	40.6	F
	Subtotal	**353**	**334**	**94.6%**	**82.4**	**13.6**	**F**
WB	Left Turn	171	146	85.3%	134.0	40.9	F
	Through	133	131	98.4%	36.4	3.7	D
	Right Turn	53	53	100.4%	18.7	4.8	B
	Subtotal	**357**	**330**	**92.4%**	**76.6**	**16.9**	**E**
Total		**1,705**	**1,537**	**90.1%**	**79.9**	**8.0**	**E**

Intersection 35 **Pleasant Grove Blvd/Highland Pointe Dr-Wal-Mart** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	104	102	97.9%	120.3	25.8	F
	Through	617	570	92.4%	78.5	19.2	E
	Right Turn	11	10	86.4%	81.0	27.3	F
	Subtotal	**732**	**681**	**93.0%**	**84.9**	**18.3**	**F**
SB	Left Turn	46	39	83.7%	92.9	22.7	F
	Through	570	490	86.0%	54.1	6.3	D
	Right Turn	77	69	89.4%	6.9	1.2	A
	Subtotal	**693**	**597**	**86.2%**	**51.2**	**6.3**	**D**
EB	Left Turn	167	109	65.4%	282.0	41.5	F
	Through	2	1	70.0%	97.9	70.8	F
	Right Turn	118	104	87.9%	88.5	30.1	F
	Subtotal	**287**	**214**	**74.7%**	**187.6**	**34.8**	**F**
WB	Left Turn	64	70	109.7%	50.3	4.3	D
	Through	7	6	81.4%	48.7	14.2	D
	Right Turn	77	74	96.6%	48.6	17.0	D
	Subtotal	**148**	**150**	**101.6%**	**49.7**	**9.4**	**D**
Total		**1,860**	**1,643**	**88.3%**	**82.7**	**7.3**	**F**

Intersection 37 **Pleasant Grove Blvd/Hwy 65 NB Ramp** **Side Street Stop**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	205	194	94.8%	59.8	9.5	F
	Through						
	Right Turn	163	164	100.3%	35.4	8.5	E
	Subtotal	**368**	**358**	**97.2%**	**48.9**	**7.0**	**E**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	508	443	87.1%	15.0	4.2	B
	Right Turn	164	140	85.1%	11.1	2.0	B
	Subtotal	**672**	**582**	**86.7%**	**14.0**	**3.5**	**B**
WB	Left Turn						
	Through	555	474	85.4%	8.1	1.8	A
	Right Turn	49	42	85.7%	1.4	0.6	A
	Subtotal	**604**	**516**	**85.4%**	**7.6**	**1.6**	**A**
Total		**1,644**	**1,456**	**88.6%**	**20.3**	**2.8**	**C**

Intersection 36 **Pleasant Grove Blvd/Hwy 65 SB Ramp** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	24	25	102.9%	22.3	2.9	C
	Through						
	Right Turn	131	133	101.4%	21.8	3.1	C
	Subtotal	**155**	**158**	**101.6%**	**21.9**	**2.9**	**C**
EB	Left Turn						
	Through	649	556	85.7%	12.7	2.3	B
	Right Turn	3	2	66.7%	9.1	5.6	A
	Subtotal	**652**	**558**	**85.6%**	**12.7**	**2.3**	**B**
WB	Left Turn						
	Through	760	669	88.1%	12.4	1.4	B
	Right Turn						
	Subtotal	**760**	**669**	**88.1%**	**12.4**	**1.3**	**B**
Total		**1,567**	**1,385**	**88.4%**	**13.6**	**1.3**	**B**

Intersection 64 **Chase Dr/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	20	18	90.0%	56.4	12.7	E
	Through						
	Right Turn	20	20	99.0%	1.2	0.3	A
	Subtotal	**40**	**38**	**94.5%**	**26.8**	**4.6**	**C**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	599	425	71.0%	24.7	6.1	C
	Right Turn	42	32	77.1%	13.3	4.7	B
	Subtotal	**641**	**458**	**71.4%**	**23.9**	**5.9**	**C**
WB	Left Turn	114	88	77.1%	66.2	9.7	E
	Through	601	472	78.6%	9.6	1.2	A
	Right Turn						
	Subtotal	**715**	**560**	**78.3%**	**18.5**	**2.7**	**B**
Total		**1,396**	**1,055**	**75.6%**	**21.2**	**2.9**	**C**

Intersection 69 **Creekside Ridge Dr/Roseville Pkwy-North Drwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	15	14	96.0%	71.7	18.3	E
	Through						
	Right Turn	18	15	85.6%	20.9	7.0	C
	Subtotal	**33**	**30**	**90.3%**	**46.2**	**11.3**	**D**
SB	Left Turn	77	78	101.8%	51.7	3.5	D
	Through	1	1	90.0%	21.4	30.2	C
	Right Turn	73	71	96.8%	48.8	5.1	D
	Subtotal	**151**	**150**	**99.3%**	**50.3**	**3.7**	**D**
EB	Left Turn	25	17	66.4%	36.5	13.1	D
	Through	682	460	67.5%	13.3	1.8	B
	Right Turn	3	2	70.0%	0.2	0.4	A
	Subtotal	**710**	**479**	**67.5%**	**14.1**	**2.0**	**B**
WB	Left Turn	11	10	91.8%	86.8	20.7	F
	Through	698	572	82.0%	25.0	2.6	C
	Right Turn	54	44	82.2%	20.4	2.6	C
	Subtotal	**763**	**627**	**82.1%**	**25.6**	**2.7**	**C**
Total		**1,657**	**1,285**	**77.6%**	**24.7**	**1.5**	**C**

Intersection 65 **Gibson Dr-Castaic Ct/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1	0	10.0%	0.5	1.4	A
	Through	1	1	100.0%	33.8	45.6	C
	Right Turn	12	12	100.0%	28.3	12.6	C
	Subtotal	**14**	**13**	**93.6%**	**30.3**	**11.8**	**C**
SB	Left Turn	299	245	81.8%	166.8	29.0	F
	Through	2	1	45.0%	214.0	129.5	F
	Right Turn	93	71	75.8%	180.4	36.2	F
	Subtotal	**394**	**316**	**80.2%**	**170.4**	**29.3**	**F**
EB	Left Turn	54	39	72.2%	90.8	24.5	F
	Through	565	405	71.6%	12.3	2.8	B
	Right Turn						
	Subtotal	**619**	**444**	**71.7%**	**19.4**	**5.7**	**B**
WB	Left Turn	16	11	66.3%	78.3	14.2	E
	Through	621	506	81.5%	31.6	2.3	C
	Right Turn	167	130	77.7%	5.6	0.8	A
	Subtotal	**804**	**647**	**80.4%**	**27.1**	**1.9**	**C**
Total		**1,831**	**1,419**	**77.5%**	**56.5**	**7.3**	**E**

Intersection 71 **N. Sunrise/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	179	155	86.8%	134.4	41.0	F
	Through	16	17	104.4%	47.5	10.9	D
	Right Turn	71	66	93.0%	7.0	2.8	A
	Subtotal	**266**	**238**	**89.5%**	**93.9**	**30.6**	**F**
SB	Left Turn	4	4	92.5%	122.9	52.6	F
	Through	52	48	91.9%	95.8	37.9	F
	Right Turn	92	90	97.5%	73.0	23.3	E
	Subtotal	**148**	**141**	**95.4%**	**83.2**	**20.4**	**F**
EB	Left Turn	25	15	60.4%	53.4	10.5	D
	Through	644	432	67.0%	38.3	3.0	D
	Right Turn	171	120	70.4%	18.4	3.6	B
	Subtotal	**840**	**567**	**67.5%**	**34.5**	**2.9**	**C**
WB	Left Turn	71	40	56.1%	258.3	44.9	F
	Through	675	508	75.3%	55.0	10.3	E
	Right Turn						
	Subtotal	**746**	**548**	**73.5%**	**69.9**	**7.4**	**E**
Total		**2,000**	**1,495**	**74.7%**	**61.4**	**7.3**	**E**

Intersection 67 **Reserve Dr/Roseville Pkwy-Burger King Drwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	93	74	79.0%	207.0	52.6	F
	Through	24	19	78.8%	211.5	59.9	F
	Right Turn	119	87	72.8%	197.9	52.9	F
	Subtotal	**236**	**179**	**75.8%**	**203.1**	**46.2**	**F**
SB	Left Turn	76	77	101.3%	50.2	6.7	D
	Through	54	54	99.6%	55.6	12.9	E
	Right Turn	21	25	117.6%	11.2	7.0	B
	Subtotal	**151**	**156**	**103.0%**	**46.0**	**7.9**	**D**
EB	Left Turn	8	5	58.8%	77.9	13.1	E
	Through	767	552	71.9%	57.9	9.5	E
	Right Turn	60	43	71.2%	51.5	10.3	D
	Subtotal	**835**	**599**	**71.7%**	**57.6**	**9.4**	**E**
WB	Left Turn	89	63	71.0%	139.3	42.9	F
	Through	653	510	78.2%	25.6	2.1	C
	Right Turn	67	51	76.4%	2.9	0.7	A
	Subtotal	**809**	**625**	**77.2%**	**35.3**	**5.5**	**D**
Total		**2,031**	**1,558**	**76.7%**	**64.2**	**7.8**	**E**

Intersection 72 **Secret Ravine Pkwy/Roseville Pkwy-Douglas Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	41	38	92.7%	127.1	45.1	F
	Through						
	Right Turn	133	113	84.6%	105.5	42.1	F
	Subtotal	**174**	**151**	**86.5%**	**110.8**	**31.7**	**F**
EB	Left Turn	167	118	70.8%	46.8	10.3	D
	Through	509	353	69.3%	3.7	0.8	A
	Right Turn	1	1	100.0%	0.9	1.5	A
	Subtotal	**677**	**472**	**69.7%**	**14.6**	**3.2**	**B**
WB	Left Turn	4	4	87.5%	109.7	36.6	F
	Through	575	488	84.8%	68.1	19.4	E
	Right Turn	38	36	95.8%	38.1	22.4	D
	Subtotal	**617**	**527**	**85.5%**	**66.2**	**19.1**	**E**
Total		**1,468**	**1,150**	**78.3%**	**50.5**	**6.7**	**D**

Intersection 70 **Taylor Rd/Roseville Pkwy** **Signal**

SimTraffic Post-Processor **Amoruso Ranch EIR**
Average Results from 10 Runs **2035 CIP Plus Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	89	92	103.5%	65.8	13.8	E
	Through	105	99	94.4%	45.5	3.5	D
	Right Turn	59	58	97.5%	29.0	5.7	C
	Subtotal	**253**	**249**	**98.3%**	**49.2**	**6.0**	**D**
SB	Left Turn	117	52	44.1%	426.8	22.9	F
	Through	67	52	77.3%	50.0	6.1	D
	Right Turn	51	44	86.7%	32.7	3.0	C
	Subtotal	**235**	**148**	**62.8%**	**178.1**	**17.1**	**F**
EB	Left Turn	73	46	62.5%	143.5	48.3	F
	Through	648	461	71.2%	29.8	3.8	C
	Right Turn	40	29	71.5%	6.2	1.5	A
	Subtotal	**761**	**535**	**70.3%**	**38.2**	**6.6**	**D**
WB	Left Turn	51	34	67.3%	72.6	11.4	E
	Through	636	500	78.6%	66.5	8.8	E
	Right Turn	257	193	75.1%	53.2	3.7	D
	Subtotal	**944**	**727**	**77.0%**	**63.4**	**7.1**	**E**
Total		**2,193**	**1,659**	**75.6%**	**63.2**	**4.8**	**E**

Intersection 66 **Roseville Pkwy/West Mall Dwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	8	6	68.8%	68.5	22.8	E
	Through	714	560	78.5%	19.1	4.8	B
	Right Turn	26	21	81.2%	3.1	1.0	A
	Subtotal	**748**	**587**	**78.5%**	**18.9**	**4.5**	**B**
SB	Left Turn	80	60	75.1%	76.5	12.3	E
	Through	786	582	74.0%	14.3	7.3	B
	Right Turn	9	6	62.2%	15.8	18.4	B
	Subtotal	**875**	**647**	**74.0%**	**20.1**	**6.4**	**C**
EB	Left Turn	6	4	68.3%	49.7	19.5	D
	Through	1	0	40.0%	3.6	6.2	A
	Right Turn	6	7	121.7%	24.9	12.6	C
	Subtotal	**13**	**12**	**90.8%**	**33.5**	**11.1**	**C**
WB	Left Turn	34	33	97.6%	45.0	8.0	D
	Through	1	0	20.0%	3.7	7.2	A
	Right Turn	84	86	101.8%	3.0	0.5	A
	Subtotal	**119**	**119**	**99.9%**	**15.0**	**3.8**	**B**
Total		**1,755**	**1,365**	**77.8%**	**19.3**	**4.4**	**B**

Intersection 63 **Gibson Dr/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	19	20	103.7%	58.5	10.0	E
	Through						
	Right Turn	252	230	91.2%	37.7	17.9	D
	Subtotal	**271**	**250**	**92.1%**	**39.3**	**16.9**	**D**
EB	Left Turn	117	84	71.7%	70.4	7.9	E
	Through	622	440	70.8%	6.4	1.5	A
	Right Turn						
	Subtotal	**739**	**524**	**70.9%**	**16.7**	**1.8**	**B**
WB	Left Turn						
	Through	594	401	67.5%	60.8	13.8	E
	Right Turn	26	19	73.1%	43.5	10.8	D
	Subtotal	**620**	**420**	**67.8%**	**60.0**	**13.2**	**E**
Total		**1,630**	**1,194**	**73.2%**	**36.5**	**5.5**	**D**

Intersection 174 **Galleria/Antelope Creek** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	27	20	73.0%	65.5	23.7	E
	Through	496	434	87.4%	19.9	7.2	B
	Right Turn	50	39	78.6%	2.0	0.4	A
	Subtotal	**573**	**493**	**86.0%**	**20.2**	**6.3**	**C**
SB	Left Turn	71	49	69.0%	199.9	43.5	F
	Through	468	335	71.5%	135.4	46.6	F
	Right Turn	43	41	94.7%	9.0	7.9	A
	Subtotal	**582**	**424**	**72.9%**	**130.5**	**40.2**	**F**
EB	Left Turn	136	130	95.7%	76.5	30.3	E
	Through	18	17	95.6%	51.0	18.6	D
	Right Turn	28	29	102.1%	1.9	2.6	A
	Subtotal	**182**	**176**	**96.7%**	**61.9**	**23.1**	**E**
WB	Left Turn	124	74	60.0%	193.2	71.8	F
	Through	24	21	85.8%	57.9	11.8	E
	Right Turn	84	81	96.8%	5.4	3.0	A
	Subtotal	**232**	**176**	**76.0%**	**85.4**	**21.3**	**F**
Total		**1,569**	**1,269**	**80.9%**	**70.1**	**9.6**	**E**

Intersection 68 **Galleria/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	173	102	58.7%	310.9	16.4	F
	Through	223	209	93.9%	46.8	8.0	D

NB	Right Turn	21	17	79.0%	4.4	0.8	A
	Subtotal	**417**	**328**	**78.6%**	**126.6**	**9.9**	**F**
SB	Left Turn	215	104	48.5%	283.4	56.4	F
	Through	260	213	81.8%	41.0	10.1	D
	Right Turn	121	96	78.9%	4.3	0.6	A
	Subtotal	**596**	**412**	**69.2%**	**91.0**	**8.1**	**F**
EB	Left Turn	183	123	67.3%	157.7	16.0	F
	Through	478	362	75.6%	61.1	8.4	E
	Right Turn	280	200	71.3%	6.5	0.7	A
	Subtotal	**941**	**684**	**72.7%**	**62.7**	**5.6**	**E**
WB	Left Turn	85	71	84.0%	64.5	15.0	E
	Through	491	411	83.6%	44.7	7.4	D
	Right Turn	178	145	81.7%	3.2	0.3	A
	Subtotal	**754**	**627**	**83.2%**	**37.4**	**4.7**	**D**
Total		**2,708**	**2,052**	**75.8%**	**70.7**	**3.3**	**E**

Intersection 34 **Pleasant Grove Blvd/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	251	149	59.5%	120.1	6.8	F
	Through	341	263	77.1%	50.3	6.3	D
	Right Turn	312	225	72.1%	7.6	1.8	A
	Subtotal	**904**	**637**	**70.5%**	**51.7**	**3.3**	**D**
SB	Left Turn	75	65	86.0%	128.1	11.2	F
	Through	290	237	81.9%	146.6	31.7	F
	Right Turn	6	6	93.3%	35.4	31.2	D
	Subtotal	**371**	**308**	**82.9%**	**141.1**	**27.0**	**F**
EB	Left Turn	16	15	91.3%	118.0	30.2	F
	Through	342	242	70.6%	239.0	24.1	F
	Right Turn	211	142	67.3%	234.5	28.5	F
	Subtotal	**569**	**398**	**70.0%**	**232.9**	**25.1**	**F**
WB	Left Turn	251	154	61.2%	299.4	25.4	F
	Through	452	433	95.9%	54.2	8.4	D
	Right Turn	66	68	102.4%	19.3	5.7	B
	Subtotal	**769**	**654**	**85.1%**	**108.2**	**9.7**	**F**
Total		**2,613**	**1,997**	**76.4%**	**119.9**	**6.9**	**F**

Intersection 169 **Stanford Ranch Rd/Fairway Dr** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	67	63	93.9%	50.2	9.0	D
	Through	349	352	100.9%	27.0	9.2	C
	Right Turn	57	61	106.1%	14.3	4.3	B
	Subtotal	**473**	**476**	**100.6%**	**28.6**	**6.0**	**C**
SB	Left Turn	18	18	98.3%	47.0	8.1	D
	Through	239	249	104.2%	27.6	1.9	C
	Right Turn	21	20	94.3%	7.1	1.8	A
	Subtotal	**278**	**287**	**103.1%**	**27.4**	**1.9**	**C**
EB	Left Turn	23	20	88.3%	45.9	7.4	D
	Through	99	98	99.3%	33.8	4.6	C
	Right Turn	69	69	99.9%	13.7	3.1	B
	Subtotal	**191**	**188**	**98.2%**	**27.7**	**2.8**	**C**
WB	Left Turn	52	51	97.3%	46.5	5.7	D
	Through	58	54	92.2%	34.1	3.7	C
	Right Turn	3	4	133.3%	23.8	16.2	C
	Subtotal	**113**	**108**	**95.7%**	**39.6**	**2.9**	**D**
Total		**1,055**	**1,058**	**100.3%**	**29.3**	**2.4**	**C**

Intersection 170 **Stanford Ranch Rd/5 Star Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	161	155	96.0%	64.2	7.7	E
	Through	444	447	100.6%	26.0	2.7	C
	Right Turn	58	54	93.6%	10.3	1.3	B
	Subtotal	**663**	**656**	**98.9%**	**33.7**	**2.6**	**C**
SB	Left Turn	29	28	97.6%	56.5	12.7	E
	Through	323	333	103.2%	41.1	5.6	D
	Right Turn	34	34	100.6%	9.9	2.9	A
	Subtotal	**386**	**396**	**102.6%**	**39.6**	**5.3**	**D**
EB	Left Turn	26	23	87.7%	183.3	60.1	F
	Through	28	23	82.9%	188.6	51.6	F
	Right Turn	73	74	100.8%	20.8	6.7	C
	Subtotal	**127**	**120**	**94.2%**	**84.5**	**23.0**	**F**
WB	Left Turn	93	92	99.4%	33.6	3.1	C
	Through	21	21	99.5%	32.1	6.6	C
	Right Turn	11	11	97.3%	19.2	7.5	B
	Subtotal	**125**	**124**	**99.2%**	**32.1**	**3.2**	**C**
Total		**1,301**	**1,295**	**99.5%**	**40.0**	**1.7**	**D**

Intersection 171 **Stanford Ranch Rd-Galleria Blvd/Hwy 65 NB ramp** **Side Street Stop**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	213	208	97.8%	46.0	4.9	E
	Through	439	422	96.2%	13.0	0.8	B
	Right Turn						
	Subtotal	**652**	**631**	**96.7%**	**23.9**	**1.9**	**C**
SB	Left Turn						
	Through	472	481	102.0%	20.2	5.0	C
	Right Turn	93	96	103.7%	18.1	5.8	C
	Subtotal	**565**	**578**	**102.2%**	**19.9**	**5.0**	**C**
EB	Left Turn						
	Through						
	Right Turn	130	125	95.9%	5.7	1.4	A
	Subtotal	**130**	**125**	**95.9%**	**5.7**	**1.4**	**A**
WB	Left Turn						
	Through						
	Right Turn	224	218	97.4%	9.4	0.4	A
	Subtotal	**224**	**218**	**97.4%**	**9.4**	**0.4**	**A**
Total		**1,571**	**1,551**	**98.7%**	**18.9**	**2.4**	**C**

Intersection 172 **Galleria Blvd/Hwy 65 SB Ramps** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	608	580	95.3%	23.2	2.4	C
	Right Turn	154	148	96.4%	21.1	2.7	C
	Subtotal	**762**	**728**	**95.6%**	**22.8**	**2.3**	**C**
SB	Left Turn	147	154	104.6%	47.8	12.2	D
	Through	456	440	96.5%	56.3	6.6	E
	Right Turn						
	Subtotal	**603**	**594**	**98.4%**	**54.0**	**5.2**	**D**
EB	Left Turn						
	Through						
	Right Turn	236	225	95.3%	42.7	23.0	D
	Subtotal	**236**	**225**	**95.3%**	**42.7**	**23.0**	**D**
WB	Left Turn						
	Through	44	45	103.0%	2.1	1.0	A
	Right Turn						
	Subtotal	**44**	**45**	**103.0%**	**2.1**	**1.0**	**A**
Total		**1,645**	**1,592**	**96.8%**	**36.8**	**2.6**	**D**

SimTraffic Post-Processor **Amoruso EIR**
Average Results from 10 Runs **2035 CIP Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 107 **Foothills Blvd/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	160	109	68.2%	137.2	2.9	F
	Right Turn	142	90	63.1%	89.5	4.6	F
	Subtotal	**302**	**199**	**65.8%**	**115.8**	**2.2**	**F**
SB	Left Turn	480	379	78.9%	38.2	1.0	D
	Through	124	106	85.4%	8.6	5.6	A
	Right Turn						
	Subtotal	**604**	**485**	**80.3%**	**31.7**	**1.7**	**C**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	214	122	56.8%	115.3	13.6	F
	Through						
	Right Turn	602	336	55.7%	67.5	13.4	E
	Subtotal	**816**	**457**	**56.0%**	**80.3**	**13.4**	**F**
Total		**1,722**	**1,141**	**66.2%**	**65.7**	**5.1**	**E**

Intersection 110 **Melody Ln/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	64	66	103.1%	15.6	5.2	B
	Subtotal	**64**	**66**	**103.1%**	**15.6**	**5.2**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	577	428	74.1%	8.1	1.6	A
	Right Turn	4	3	65.0%	5.8	5.1	A
	Subtotal	**581**	**430**	**74.1%**	**8.1**	**1.6**	**A**
WB	Left Turn	90	60	66.3%	28.4	5.4	C
	Through	708	453	64.0%	4.9	0.8	A
	Right Turn						
	Subtotal	**798**	**513**	**64.2%**	**7.6**	**0.9**	**A**
Total		**1,443**	**1,009**	**69.9%**	**8.4**	**1.1**	**A**

Intersction 109 **Northridge Dr/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1	0	40.0%	9.9	15.2	A
	Through						
	Right Turn	6	6	100.0%	21.8	10.4	C
	Subtotal	**7**	**6**	**91.4%**	**24.2**	**10.6**	**C**
SB	Left Turn	9	9	102.2%	70.5	19.0	E
	Through						
	Right Turn	6	6	98.3%	15.3	8.2	B
	Subtotal	**15**	**15**	**100.7%**	**47.9**	**9.5**	**D**
EB	Left Turn	4	2	60.0%	53.9	38.4	D
	Through	570	418	73.2%	9.0	5.2	A
	Right Turn	7	5	68.6%	7.0	5.2	A
	Subtotal	**581**	**425**	**73.1%**	**9.3**	**5.2**	**A**
WB	Left Turn	3	2	63.3%	68.9	48.8	E
	Through	687	435	63.3%	4.8	3.5	A
	Right Turn	1	0	20.0%	0.0	0.0	A
	Subtotal	**691**	**437**	**63.3%**	**5.1**	**3.6**	**A**
Total		**1,294**	**884**	**68.3%**	**8.0**	**3.2**	**A**

Intersection 111 **Riverside Ave/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	358	209	58.3%	133.4	5.9	F
	Through	171	122	71.1%	46.3	4.9	D
	Right Turn	69	49	70.4%	17.2	3.5	B
	Subtotal	**598**	**379**	**63.3%**	**90.6**	**5.2**	**F**
SB	Left Turn	80	45	56.4%	271.2	30.8	F
	Through	181	94	51.9%	482.3	41.5	F
	Right Turn	63	30	47.8%	429.7	98.3	F
	Subtotal	**324**	**169**	**52.2%**	**415.8**	**48.4**	**F**
EB	Left Turn	63	44	69.4%	148.4	56.5	F
	Through	276	224	81.2%	30.3	3.4	C
	Right Turn	303	234	77.2%	3.0	0.2	A
	Subtotal	**642**	**502**	**78.2%**	**27.9**	**5.7**	**C**
WB	Left Turn	9	6	66.7%	254.6	91.2	F
	Through	412	301	73.0%	232.5	52.8	F
	Right Turn						
	Subtotal	**421**	**307**	**72.8%**	**232.4**	**52.9**	**F**
Total		**1,985**	**1,357**	**68.3%**	**139.7**	**15.4**	**F**

Intersection 108 **Vernon St/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	4	6	142.5%	76.1	25.0	E
	Through	14	12	84.3%	46.2	13.9	D
	Right Turn	28	29	102.9%	35.5	8.4	D
	Subtotal	**46**	**46**	**100.7%**	**43.1**	**4.0**	**D**
SB	Left Turn	16	12	73.1%	137.7	38.8	F
	Through	17	14	80.0%	128.4	39.2	F
	Right Turn	181	108	59.5%	323.6	83.9	F
	Subtotal	**214**	**133**	**62.1%**	**286.2**	**71.3**	**F**
EB	Left Turn	93	71	76.8%	70.1	12.4	E
	Through	524	398	75.9%	32.0	4.7	C
	Right Turn	6	4	71.7%	33.8	10.4	C
	Subtotal	**623**	**473**	**76.0%**	**37.8**	**6.1**	**D**
WB	Left Turn	23	13	56.1%	82.3	18.5	F
	Through	630	375	59.5%	55.1	18.4	E
	Right Turn	10	7	70.0%	33.5	17.2	C
	Subtotal	**663**	**395**	**59.5%**	**55.6**	**18.0**	**E**
Total		**1,546**	**1,047**	**67.7%**	**75.4**	**6.8**	**E**

Intersection 203 **Riverside Ave/I-80 WB Ramps** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	465	281	60.4%	171.2	21.4	F
	Right Turn	47	37	77.7%	29.4	9.1	C
	Subtotal	**512**	**318**	**62.0%**	**154.8**	**19.1**	**F**
SB	Left Turn						
	Through	249	170	68.3%	11.3	1.7	B
	Right Turn	244	165	67.4%	0.6	0.1	A
	Subtotal	**493**	**335**	**67.8%**	**6.0**	**1.0**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	219	208	94.9%	42.7	10.5	D
	Through						
	Right Turn	117	82	69.7%	161.7	38.1	F
	Subtotal	**336**	**289**	**86.1%**	**75.9**	**13.3**	**E**
Total		**1,341**	**941**	**70.2%**	**77.5**	**7.4**	**E**

Intersection 204 **Riverside Ave/I-80 EB Ramps** **Signal**

SimTraffic Post-Processor **Amoruso EIR**
Average Results from 10 Runs **2035 CIP Plus Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	386	306	79.2%	113.4	28.2	F
	Right Turn	18	14	75.6%	109.0	43.2	F
	Subtotal	**404**	**319**	**79.0%**	**113.1**	**28.6**	**F**
SB	Left Turn	28	23	83.6%	99.9	34.2	F
	Through	392	309	78.9%	20.2	5.7	C
	Right Turn						
	Subtotal	**420**	**333**	**79.2%**	**26.1**	**5.1**	**C**
EB	Left Turn						
	Through	108	106	97.9%	62.6	5.0	E
	Right Turn	34	36	105.3%	26.1	7.6	C
	Subtotal	**142**	**142**	**99.6%**	**53.6**	**5.0**	**D**
WB	Left Turn	29	29	99.3%	46.6	4.7	D
	Through						
	Right Turn	122	103	84.8%	73.3	33.7	E
	Subtotal	**151**	**132**	**87.5%**	**67.3**	**26.5**	**E**
Total		**1,117**	**925**	**82.8%**	**66.0**	**11.1**	**E**

INTERSECTINS OUTSIDE OF ROSEVILLE

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	29	547	1021	109	402	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	32	601	1122	120	442	2
RTOR Reduction (vph)	0	0	0	82	0	1
Lane Group Flow (vph)	32	601	1122	38	442	1
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.5	23.0	15.5	15.5	15.8	15.8
Effective Green, g (s)	2.5	23.0	15.5	15.5	15.8	15.8
Actuated g/C Ratio	0.05	0.47	0.32	0.32	0.32	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	91	2397	1615	503	573	513
v/s Ratio Prot	0.02	c0.12	c0.22		c0.25	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.35	0.25	0.69	0.08	0.77	0.00
Uniform Delay, d1	22.4	7.7	14.6	11.6	14.9	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.1	1.3	0.1	6.4	0.0
Delay (s)	24.7	7.8	15.9	11.7	21.2	11.2
Level of Service	C	A	B	B	C	B
Approach Delay (s)		8.6	15.5		21.2	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	522	428	164	921	204	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	580	476	182	1023	227	171
RTOR Reduction (vph)	0	336	0	0	0	94
Lane Group Flow (vph)	580	140	182	1023	227	77
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	14.1	14.1	7.4	26.5	11.5	11.5
Effective Green, g (s)	14.1	14.1	7.4	26.5	11.5	11.5
Actuated g/C Ratio	0.29	0.29	0.15	0.55	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1494	465	273	2807	424	379
v/s Ratio Prot	0.11		c0.10	c0.20	c0.13	
v/s Ratio Perm		0.09				0.05
v/c Ratio	0.39	0.30	0.67	0.36	0.54	0.20
Uniform Delay, d1	13.5	13.1	19.1	6.0	15.9	14.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.4	6.0	0.1	1.3	0.3
Delay (s)	13.7	13.5	25.2	6.1	17.2	14.9
Level of Service	B	B	C	A	B	B
Approach Delay (s)	13.6			9.0	16.2	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	410	414	158	40	145	170	10	7	11	157	44	14
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	482	487	186	47	171	200	12	8	13	185	52	16

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	1155	418	33	253
Volume Left (vph)	482	47	12	185
Volume Right (vph)	186	200	13	16
Hadj (s)	0.02	-0.23	-0.13	0.14
Departure Headway (s)	5.7	5.7	7.5	6.9
Degree Utilization, x	1.83	0.67	0.07	0.48
Capacity (veh/h)	643	609	415	502
Control Delay (s)	393.6	19.4	11.0	16.1
Approach Delay (s)	393.6	19.4	11.0	16.1
Approach LOS	F	C	B	C

Intersection Summary			
Delay	251.3		
HCM Level of Service	F		
Intersection Capacity Utilization	102.9%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	483	538	146	349	457	295
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	508	566	154	367	481	311
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1075		1183	508
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1075		1183	508
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			76		0	45
cM capacity (veh/h)			649		160	565

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	508	566	154	367	481	311
Volume Left	0	0	154	0	481	0
Volume Right	0	566	0	0	0	311
cSH	1700	1700	649	1700	160	565
Volume to Capacity	0.30	0.33	0.24	0.22	3.01	0.55
Queue Length 95th (ft)	0	0	23	0	Err	83
Control Delay (s)	0.0	0.0	12.3	0.0	Err	18.9
Lane LOS			B		F	C
Approach Delay (s)	0.0		3.6		6083.9	
Approach LOS					F	

Intersection Summary			
Average Delay	2018.0		
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	789	139	0	1122	368	461	0	1061	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Lane Util. Factor		0.91	1.00		0.91	1.00	0.95	0.95	0.88			
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1681	1681	2787			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1681	1681	2787			
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	897	158	0	1275	418	524	0	1206	0	0	0
RTOR Reduction (vph)	0	0	123	0	0	290	0	0	823	0	0	0
Lane Group Flow (vph)	0	897	35	0	1275	128	262	262	383	0	0	0
Turn Type			Perm			Perm	Split		Perm			
Protected Phases		2			6		8	8				
Permitted Phases			2			6			8			
Actuated Green, G (s)		16.0	16.0		22.5	22.5	18.8	18.8	18.8			
Effective Green, g (s)		16.0	16.0		22.5	22.5	18.8	18.8	18.8			
Actuated g/C Ratio		0.22	0.22		0.31	0.31	0.26	0.26	0.26			
Clearance Time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Vehicle Extension (s)		1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Lane Grp Cap (vph)		1111	346		1563	487	432	432	716			
v/s Ratio Prot		c0.18			c0.25		c0.16	0.16				
v/s Ratio Perm			0.02			0.08			0.14			
v/c Ratio		0.81	0.10		0.82	0.26	0.61	0.61	0.53			
Uniform Delay, d1		27.1	22.8		23.4	19.1	23.9	23.9	23.4			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		4.1	0.0		3.2	0.1	1.7	1.7	0.4			
Delay (s)		31.3	22.9		26.7	19.2	25.6	25.6	23.8			
Level of Service		C	C		C	B	C	C	C			
Approach Delay (s)		30.0			24.8			24.4			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	15.9
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↕	↱
Volume (vph)	0	388	316	0	1063	525	0	0	0	543	9	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)		5085	1583		5085	1583				1681	1604	1504
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)		5085	1583		5085	1583				1681	1604	1504
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	436	355	0	1194	590	0	0	0	610	10	236
RTOR Reduction (vph)	0	0	297	0	0	382	0	0	0	0	4	159
Lane Group Flow (vph)	0	436	58	0	1194	208	0	0	0	323	317	53
Turn Type			Perm			Perm				Split		Perm
Protected Phases		2			6					4	4	
Permitted Phases			2			6						4
Actuated Green, G (s)		10.5	10.5		22.8	22.8				16.2	16.2	16.2
Effective Green, g (s)		10.5	10.5		22.8	22.8				16.2	16.2	16.2
Actuated g/C Ratio		0.16	0.16		0.35	0.35				0.25	0.25	0.25
Clearance Time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Vehicle Extension (s)		1.0	1.0		1.0	1.0				1.0	1.0	1.0
Lane Grp Cap (vph)		825	257		1792	558				421	402	377
v/s Ratio Prot		c0.09			c0.23					0.19	c0.20	
v/s Ratio Perm			0.04			0.13						0.04
v/c Ratio		0.53	0.22		0.67	0.37				0.77	0.79	0.14
Uniform Delay, d1		24.8	23.6		17.7	15.6				22.5	22.7	18.8
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.3	0.2		0.7	0.2				7.4	9.2	0.1
Delay (s)		25.1	23.7		18.5	15.8				29.9	31.8	18.9
Level of Service		C	C		B	B				C	C	B
Approach Delay (s)		24.5			17.6			0.0			27.9	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	15.2
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	41	236	69	30	36	351	1730	169	137	626	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1625		1681	1734	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1625		1681	1734	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	46	262	77	33	40	390	1922	188	152	696	23
RTOR Reduction (vph)	0	229	0	0	0	36	0	0	115	0	0	18
Lane Group Flow (vph)	30	79	0	54	56	4	390	1922	73	152	696	5
Turn Type	Split			Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	9.0	9.0		6.4	6.4	6.4	20.4	28.1	28.1	8.6	16.3	16.3
Effective Green, g (s)	9.0	9.0		6.4	6.4	6.4	20.4	28.1	28.1	8.6	16.3	16.3
Actuated g/C Ratio	0.12	0.12		0.09	0.09	0.09	0.28	0.39	0.39	0.12	0.23	0.23
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	221	203		149	154	141	501	1982	617	409	1150	358
v/s Ratio Prot	0.02	c0.05		0.03	c0.03		c0.22	c0.38		0.04	0.14	
v/s Ratio Perm						0.00			0.05			0.00
v/c Ratio	0.14	0.39		0.36	0.36	0.03	0.78	0.97	0.12	0.37	0.61	0.01
Uniform Delay, d1	28.1	29.0		30.9	30.9	30.0	23.8	21.6	14.1	29.3	25.0	21.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.2		1.5	1.5	0.1	7.5	13.6	0.1	0.6	0.9	0.0
Delay (s)	28.4	30.2		32.4	32.4	30.1	31.3	35.2	14.2	29.8	25.9	21.7
Level of Service	C	C		C	C	C	C	D	B	C	C	C
Approach Delay (s)		30.1			31.8			33.0			26.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	1207	30	186	300	19	387	747	745	127	541	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	1341	33	207	333	21	430	830	828	141	601	40
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	23	1341	33	207	333	21	430	830	828	141	601	40
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	3.2	39.0	101.5	10.2	46.0	101.5	13.0	23.1	101.5	9.2	19.3	101.5
Effective Green, g (s)	3.2	39.0	101.5	10.2	46.0	101.5	13.0	23.1	101.5	9.2	19.3	101.5
Actuated g/C Ratio	0.03	0.38	1.00	0.10	0.45	1.00	0.13	0.23	1.00	0.09	0.19	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	56	1360	1583	345	1604	1583	440	805	1583	311	673	1583
v/s Ratio Prot	0.01	c0.38		0.06	0.09		c0.13	c0.23		0.04	0.17	
v/s Ratio Perm			0.02			0.01			c0.52			0.03
v/c Ratio	0.41	0.99	0.02	0.60	0.21	0.01	0.98	1.03	0.52	0.45	0.89	0.03
Uniform Delay, d1	48.2	31.0	0.0	43.7	16.7	0.0	44.1	39.2	0.0	43.8	40.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	20.9	0.0	2.8	0.1	0.0	36.6	39.9	1.2	1.1	14.2	0.0
Delay (s)	53.1	51.9	0.0	46.5	16.8	0.0	80.7	79.1	1.2	44.8	54.3	0.0
Level of Service	D	D	A	D	B	A	F	E	A	D	D	A
Approach Delay (s)		50.7			27.1			48.6			49.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	46.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	101.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	328	34	763	477	132	8	263	270	92	1126	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	137	364	38	848	530	147	9	292	300	102	1251	44
RTOR Reduction (vph)	0	0	32	0	0	95	0	0	204	0	0	18
Lane Group Flow (vph)	137	364	6	848	530	52	9	292	96	102	1251	26
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.9	19.1	19.1	34.3	44.5	44.5	1.1	40.4	40.4	11.0	50.3	50.3
Effective Green, g (s)	8.9	19.1	19.1	34.3	44.5	44.5	1.1	40.4	40.4	11.0	50.3	50.3
Actuated g/C Ratio	0.07	0.15	0.15	0.27	0.35	0.35	0.01	0.32	0.32	0.09	0.40	0.40
Clearance Time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	242	535	239	932	1247	558	15	1132	506	154	1409	630
v/s Ratio Prot	0.04	c0.10		c0.25	0.15		0.01	0.08		c0.06	c0.35	
v/s Ratio Perm			0.00			0.03			0.06			0.02
v/c Ratio	0.57	0.68	0.02	0.91	0.43	0.09	0.60	0.26	0.19	0.66	0.89	0.04
Uniform Delay, d1	56.8	50.7	45.7	44.5	31.2	27.4	62.4	31.8	31.1	55.9	35.4	23.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	3.6	0.0	12.3	0.2	0.1	36.3	0.1	0.2	8.0	7.2	0.0
Delay (s)	58.6	54.3	45.7	56.8	31.4	27.5	98.6	32.0	31.3	63.9	42.5	23.3
Level of Service	E	D	D	E	C	C	F	C	C	E	D	C
Approach Delay (s)		54.8			45.1			32.6			43.5	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	44.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	126.3	Sum of lost time (s)	21.5
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	1328	782	329	142	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	1	1459	859	362	156	37
RTOR Reduction (vph)	0	0	0	204	0	29
Lane Group Flow (vph)	1	1459	859	158	156	8
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.9	25.4	19.5	19.5	9.3	9.3
Effective Green, g (s)	0.9	25.4	19.5	19.5	9.3	9.3
Actuated g/C Ratio	0.02	0.57	0.44	0.44	0.21	0.21
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	36	2889	2218	691	368	329
v/s Ratio Prot	0.00	c0.29	0.17		c0.09	
v/s Ratio Perm				0.10		0.00
v/c Ratio	0.03	0.51	0.39	0.23	0.42	0.02
Uniform Delay, d1	21.5	5.8	8.5	7.9	15.4	14.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.1	0.2	0.8	0.0
Delay (s)	21.8	6.0	8.7	8.1	16.2	14.1
Level of Service	C	A	A	A	B	B
Approach Delay (s)		6.0	8.5		15.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	44.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1171	297	201	727	382	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1301	330	223	808	424	24
RTOR Reduction (vph)	0	234	0	0	0	7
Lane Group Flow (vph)	1301	96	223	808	424	17
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	17.0	17.0	10.4	32.4	16.2	16.2
Effective Green, g (s)	17.0	17.0	10.4	32.4	16.2	16.2
Actuated g/C Ratio	0.29	0.29	0.18	0.55	0.28	0.28
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1475	459	314	2812	489	438
v/s Ratio Prot	c0.26		c0.13	0.16	c0.24	
v/s Ratio Perm		0.06				0.01
v/c Ratio	0.88	0.21	0.71	0.29	0.87	0.04
Uniform Delay, d1	19.8	15.7	22.7	7.0	20.2	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	0.2	7.4	0.1	14.9	0.0
Delay (s)	26.4	15.9	30.0	7.0	35.1	15.5
Level of Service	C	B	C	A	D	B
Approach Delay (s)	24.3			12.0	34.0	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	165	4	7	347	233	10	22	15	258	2	516
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	24	194	5	8	408	274	12	26	18	304	2	607

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	222	691	55	913
Volume Left (vph)	24	8	12	304
Volume Right (vph)	5	274	18	607
Hadj (s)	0.04	-0.20	-0.11	-0.30
Departure Headway (s)	7.3	6.3	8.0	6.2
Degree Utilization, x	0.45	1.22	0.12	1.58
Capacity (veh/h)	483	564	425	573
Control Delay (s)	16.3	134.8	12.2	288.3
Approach Delay (s)	16.3	134.8	12.2	288.3
Approach LOS	C	F	B	F

Intersection Summary				
Delay	191.7			
HCM Level of Service	F			
Intersection Capacity Utilization	93.4%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	496	523	331	524	507	114
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	522	551	348	552	534	120
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1073		1771	522
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1073		1771	522
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			46		0	78
cM capacity (veh/h)			650		42	555

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	522	551	348	552	534	120
Volume Left	0	0	348	0	534	0
Volume Right	0	551	0	0	0	120
cSH	1700	1700	650	1700	42	555
Volume to Capacity	0.31	0.32	0.54	0.32	12.57	0.22
Queue Length 95th (ft)	0	0	80	0	Err	20
Control Delay (s)	0.0	0.0	16.8	0.0	Err	13.3
Lane LOS			C		F	B
Approach Delay (s)	0.0		6.5		8165.9	
Approach LOS					F	

Intersection Summary			
Average Delay	2034.7		
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1426	543	0	458	398	523	0	84	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Lane Util. Factor		0.91	1.00		0.91	1.00	0.95	0.95	0.88			
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1681	1681	2787			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1681	1681	2787			
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	1620	617	0	520	452	594	0	95	0	0	0
RTOR Reduction (vph)	0	0	327	0	0	253	0	0	3	0	0	0
Lane Group Flow (vph)	0	1620	290	0	520	199	297	297	92	0	0	0
Turn Type			Perm			Perm	Split		Perm			
Protected Phases		2			6		8	8				
Permitted Phases			2			6			8			
Actuated Green, G (s)		20.0	20.0		20.0	20.0	14.9	14.9	14.9			
Effective Green, g (s)		20.0	20.0		20.0	20.0	14.9	14.9	14.9			
Actuated g/C Ratio		0.44	0.44		0.44	0.44	0.33	0.33	0.33			
Clearance Time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Vehicle Extension (s)		1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Lane Grp Cap (vph)		2235	696		2235	696	550	550	913			
v/s Ratio Prot		c0.32			0.10		c0.18	0.18				
v/s Ratio Perm			0.18			0.13			0.03			
v/c Ratio		0.72	0.42		0.23	0.29	0.54	0.54	0.10			
Uniform Delay, d1		10.5	8.7		8.0	8.2	12.5	12.5	10.6			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		1.0	0.1		0.0	0.1	0.6	0.6	0.0			
Delay (s)		11.5	8.9		8.0	8.3	13.1	13.1	10.7			
Level of Service		B	A		A	A	B	B	B			
Approach Delay (s)		10.8			8.1			12.7			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	10.6
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↔	↱
Volume (vph)	0	1380	928	48	929	4	0	0	0	589	0	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)		5085	1583		5073	1583				1681	1601	1504
Flt Permitted		1.00	1.00		0.80	1.00				0.95	0.96	1.00
Satd. Flow (perm)		5085	1583		4066	1583				1681	1601	1504
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1551	1043	54	1044	4	0	0	0	662	0	285
RTOR Reduction (vph)	0	0	491	0	0	2	0	0	0	0	6	67
Lane Group Flow (vph)	0	1551	552	0	1098	2	0	0	0	344	341	189
Turn Type			Perm	Perm		Perm				Split		Perm
Protected Phases		2			6					4	4	
Permitted Phases			2	6		6						4
Actuated Green, G (s)		26.9	26.9		26.9	26.9				14.0	14.0	14.0
Effective Green, g (s)		26.9	26.9		26.9	26.9				14.0	14.0	14.0
Actuated g/C Ratio		0.53	0.53		0.53	0.53				0.28	0.28	0.28
Clearance Time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Vehicle Extension (s)		1.0	1.0		1.0	1.0				1.0	1.0	1.0
Lane Grp Cap (vph)		2693	838		2153	838				463	441	414
v/s Ratio Prot		0.30								0.20	c0.21	
v/s Ratio Perm			c0.35		0.27	0.00						0.13
v/c Ratio		0.58	0.66		0.51	0.00				0.74	0.77	0.46
Uniform Delay, d1		8.1	8.6		7.7	5.6				16.8	16.9	15.3
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.2	1.4		0.1	0.0				5.6	7.5	0.3
Delay (s)		8.3	10.1		7.8	5.6				22.3	24.5	15.5
Level of Service		A	B		A	A				C	C	B
Approach Delay (s)		9.0			7.8			0.0			21.3	
Approach LOS		A			A			A			C	

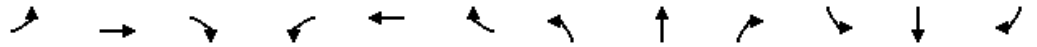
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	9.9
Intersection Capacity Utilization	107.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	44	294	237	49	128	142	1250	82	142	1748	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1620		1681	1713	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1620		1681	1713	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	21	49	327	263	54	142	158	1389	91	158	1942	39
RTOR Reduction (vph)	0	185	0	0	0	123	0	0	53	0	0	16
Lane Group Flow (vph)	21	191	0	158	159	19	158	1389	38	158	1942	23
Turn Type	Split			Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	14.1	14.1		13.3	13.3	13.3	13.1	40.9	40.9	9.5	37.3	37.3
Effective Green, g (s)	14.1	14.1		13.3	13.3	13.3	13.1	40.9	40.9	9.5	37.3	37.3
Actuated g/C Ratio	0.14	0.14		0.14	0.14	0.14	0.13	0.42	0.42	0.10	0.38	0.38
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	255	234		229	233	215	237	2127	662	333	1939	604
v/s Ratio Prot	0.01	c0.12		c0.09	0.09		c0.09	c0.27		0.05	c0.38	
v/s Ratio Perm						0.01			0.02			0.01
v/c Ratio	0.08	0.82		0.69	0.68	0.09	0.67	0.65	0.06	0.47	1.00	0.04
Uniform Delay, d1	36.2	40.6		40.3	40.2	37.0	40.3	22.8	17.0	41.8	30.2	19.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	19.3		8.4	8.0	0.2	6.9	0.7	0.0	1.1	20.8	0.0
Delay (s)	36.4	59.9		48.7	48.2	37.1	47.2	23.5	17.0	42.9	51.1	19.0
Level of Service	D	E		D	D	D	D	C	B	D	D	B
Approach Delay (s)		58.7			44.9			25.4			49.9	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM Average Control Delay	41.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	97.8	Sum of lost time (s)	25.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	446	224	834	912	64	235	789	411	27	895	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	86	496	249	927	1013	71	261	877	457	30	994	54
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	86	496	249	927	1013	71	261	877	457	30	994	54
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	8.1	16.8	102.5	26.0	34.7	102.5	10.7	35.6	102.5	4.1	29.0	102.5
Effective Green, g (s)	8.1	16.8	102.5	26.0	34.7	102.5	10.7	35.6	102.5	4.1	29.0	102.5
Actuated g/C Ratio	0.08	0.16	1.00	0.25	0.34	1.00	0.10	0.35	1.00	0.04	0.28	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	140	580	1583	871	1198	1583	358	1229	1583	137	1001	1583
v/s Ratio Prot	0.05	0.14		c0.27	c0.29		c0.08	0.25		0.01	c0.28	
v/s Ratio Perm			0.16			0.04			0.29			0.03
v/c Ratio	0.61	0.86	0.16	1.06	0.85	0.04	0.73	0.71	0.29	0.22	0.99	0.03
Uniform Delay, d1	45.7	41.7	0.0	38.2	31.4	0.0	44.5	29.0	0.0	47.6	36.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	11.8	0.2	49.1	5.7	0.1	7.3	2.0	0.5	0.8	26.6	0.0
Delay (s)	53.4	53.5	0.2	87.3	37.1	0.1	51.7	31.0	0.5	48.5	63.2	0.0
Level of Service	D	D	A	F	D	A	D	C	A	D	E	A
Approach Delay (s)		37.5			58.9			25.7			59.7	
Approach LOS		D			E			C			E	

Intersection Summary			
HCM Average Control Delay	46.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	102.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	333	526	18	196	269	204	29	1212	426	118	356	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	370	584	20	218	299	227	32	1347	473	131	396	107
RTOR Reduction (vph)	0	0	16	0	0	136	0	0	147	0	0	55
Lane Group Flow (vph)	370	584	4	218	299	91	32	1347	326	131	396	52
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.1	25.4	25.4	11.5	22.8	22.8	4.5	52.3	52.3	10.7	58.5	58.5
Effective Green, g (s)	14.1	25.4	25.4	11.5	22.8	22.8	4.5	52.3	52.3	10.7	58.5	58.5
Actuated g/C Ratio	0.12	0.21	0.21	0.09	0.19	0.19	0.04	0.43	0.43	0.09	0.48	0.48
Clearance Time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	399	740	331	325	665	297	66	1525	682	156	1705	763
v/s Ratio Prot	c0.11	c0.17		0.06	0.08		0.02	c0.38		c0.07	0.11	
v/s Ratio Perm			0.00			0.06			0.21			0.03
v/c Ratio	0.93	0.79	0.01	0.67	0.45	0.30	0.48	0.88	0.48	0.84	0.23	0.07
Uniform Delay, d1	53.1	45.5	38.1	53.1	43.7	42.5	57.3	31.7	24.8	54.5	18.3	16.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.0	5.6	0.0	4.2	0.5	0.6	2.0	6.4	0.5	29.7	0.1	0.0
Delay (s)	80.1	51.1	38.1	57.4	44.2	43.1	59.3	38.2	25.3	84.2	18.4	16.9
Level of Service	F	D	D	E	D	D	E	D	C	F	B	B
Approach Delay (s)		61.8			47.7			35.3			31.8	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM Average Control Delay	43.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	121.4	Sum of lost time (s)	21.5
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

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Circular 212 Planning (Base Volume Alternative)
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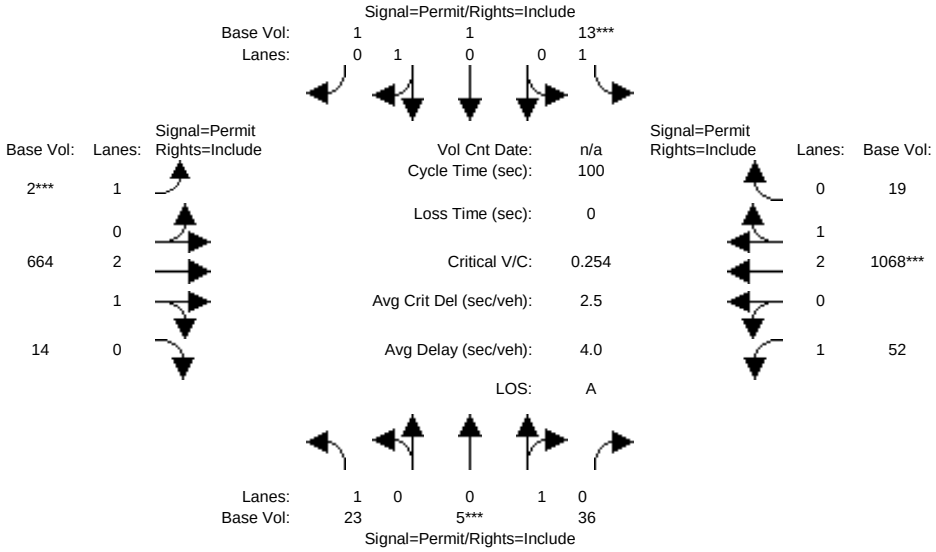
Intersection #301: Locust Rd and Baseline Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	23	5	36	13	1	1	2	664	14	52	1068	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	5	36	13	1	1	2	664	14	52	1068	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	23	5	36	13	1	1	2	664	14	52	1068	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	5	36	13	1	1	2	664	14	52	1068	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	5	36	13	1	1	2	664	14	52	1068	19
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.12	0.88	1.00	0.50	0.50	1.00	2.94	0.06	1.00	2.95	0.05
Final Sat.:	1650	201	1449	1650	825	825	1650	4848	102	1650	4863	87
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.02	0.01	0.00	0.00	0.00	0.14	0.14	0.03	0.22	0.22
Crit Volume:		41			13			2			362	
Crit Moves:		****			****			****			****	

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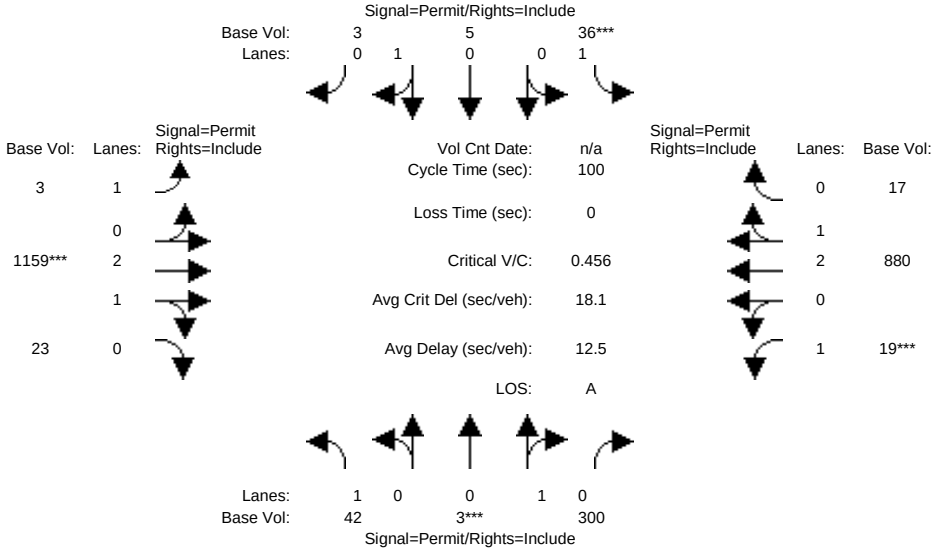
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #301: Locust Rd and Baseline Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	42	3	300	36	5	3	3	1159	23	19	880	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	3	300	36	5	3	3	1159	23	19	880	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	3	300	36	5	3	3	1159	23	19	880	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	3	300	36	5	3	3	1159	23	19	880	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	3	300	36	5	3	3	1159	23	19	880	17
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.01	0.99	1.00	0.62	0.38	1.00	2.94	0.06	1.00	2.94	0.06
Final Sat.:	1650	16	1634	1650	1031	619	1650	4854	96	1650	4856	94
Capacity Analysis Module:												
Vol/Sat:	0.03	0.18	0.18	0.02	0.00	0.00	0.00	0.24	0.24	0.01	0.18	0.18
Crit Volume:		303			36			394			19	
Crit Moves:		****			****			****			****	

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Circular 212 Planning (Base Volume Alternative)
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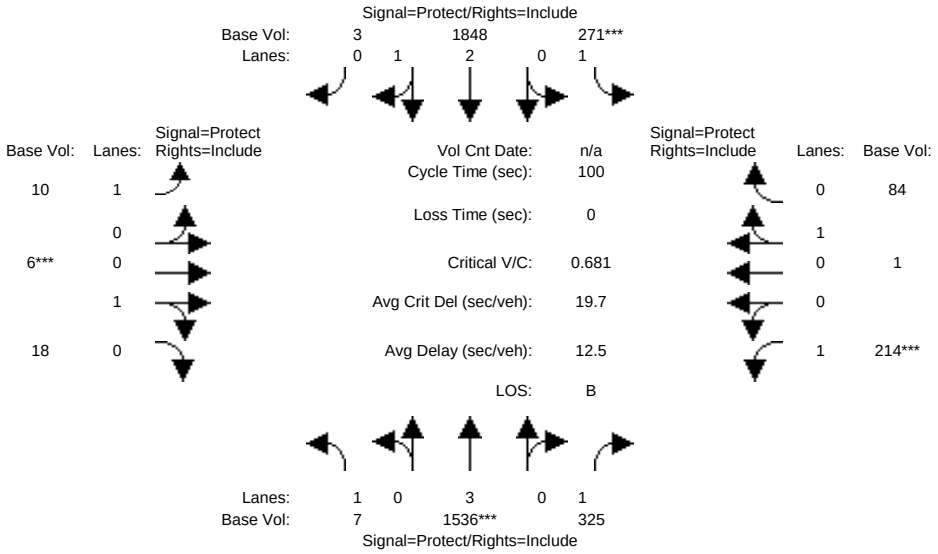
Intersection #305: Watt Ave/PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	7	1536	325	271	1848	3	10	6	18	214	1	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	1536	325	271	1848	3	10	6	18	214	1	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	1536	325	271	1848	3	10	6	18	214	1	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	1536	325	271	1848	3	10	6	18	214	1	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	1536	325	271	1848	3	10	6	18	214	1	84
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.99	0.01	1.00	0.25	0.75	1.00	0.01	0.99
Final Sat.:	1500	4500	1500	1500	4493	7	1500	375	1125	1500	18	1482
Capacity Analysis Module:												
Vol/Sat:	0.00	0.34	0.22	0.18	0.41	0.41	0.01	0.02	0.02	0.14	0.06	0.06
Crit Volume:		512		271				24		214		
Crit Moves:		****		****				****		****		

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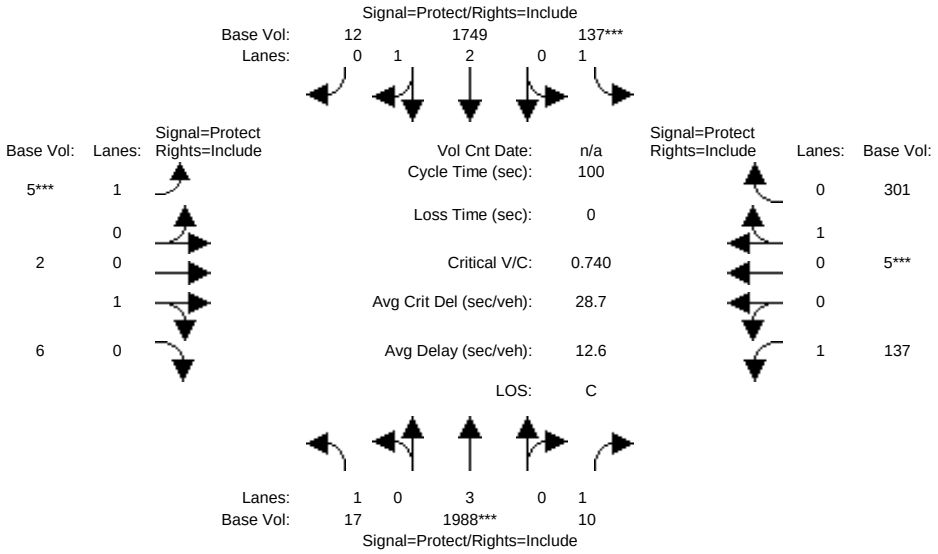
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #305: Watt Ave/PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	17	1988	10	137	1749	12	5	2	6	137	5	301
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	1988	10	137	1749	12	5	2	6	137	5	301
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	1988	10	137	1749	12	5	2	6	137	5	301
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	1988	10	137	1749	12	5	2	6	137	5	301
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	1988	10	137	1749	12	5	2	6	137	5	301
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.98	0.02	1.00	0.25	0.75	1.00	0.02	0.98
Final Sat.:	1500	4500	1500	1500	4469	31	1500	375	1125	1500	25	1475
Capacity Analysis Module:												
Vol/Sat:	0.01	0.44	0.01	0.09	0.39	0.39	0.00	0.01	0.01	0.09	0.20	0.20
Crit Volume:		663			137			5			306	
Crit Moves:		****			****			****			****	

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City of Roseville
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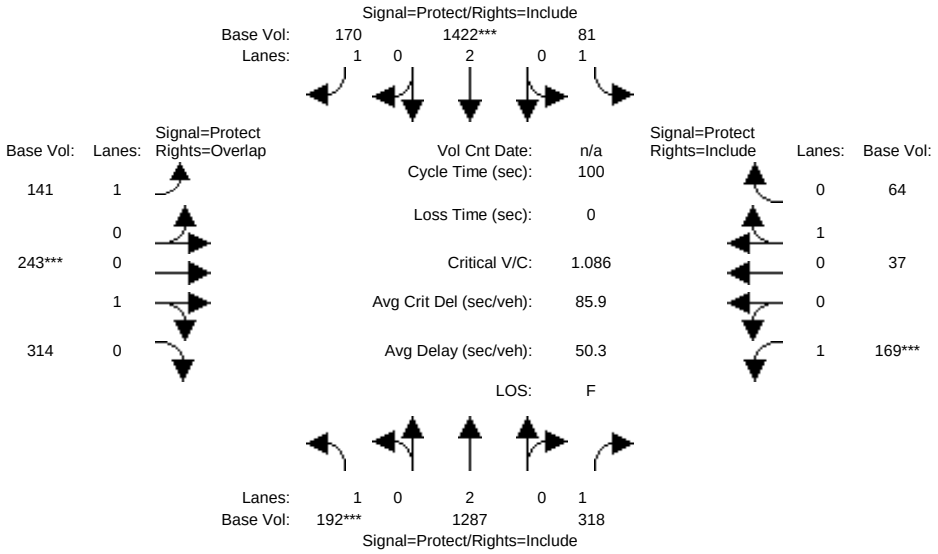
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	192	1287	318	81	1422	170	141	243	314	169	37	64
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	192	1287	318	81	1422	170	141	243	314	169	37	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	192	1287	318	81	1422	170	141	243	314	169	37	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	192	1287	318	81	1422	170	141	243	314	169	37	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	192	1287	318	81	1422	170	141	243	314	169	37	64
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.44	0.56	1.00	0.37	0.63
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	654	846	1500	550	950
Capacity Analysis Module:												
Vol/Sat:	0.13	0.43	0.21	0.05	0.47	0.11	0.09	0.37	0.37	0.11	0.07	0.07
Crit Volume:	192				711			557			169	
Crit Moves:	****				****			****			****	

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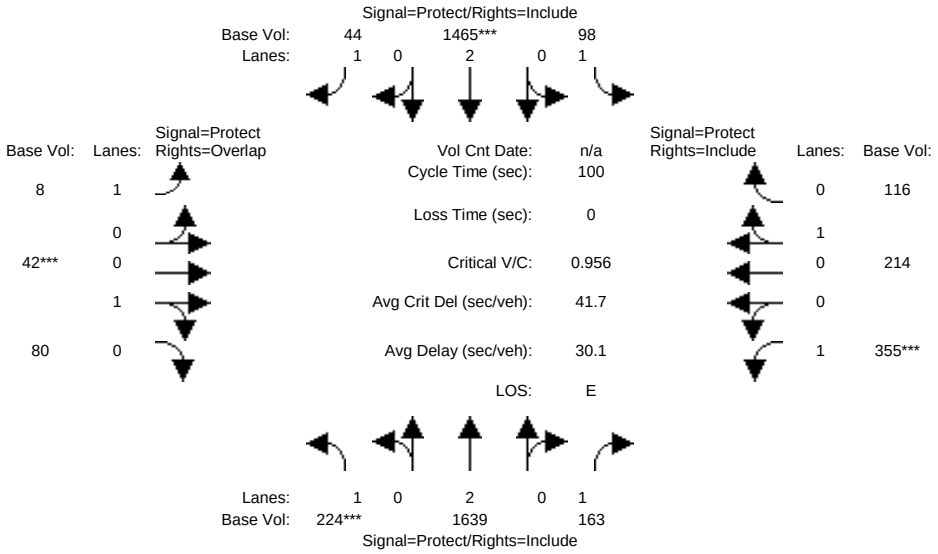
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	224	1639	163	98	1465	44	8	42	80	355	214	116
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	224	1639	163	98	1465	44	8	42	80	355	214	116
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	224	1639	163	98	1465	44	8	42	80	355	214	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	224	1639	163	98	1465	44	8	42	80	355	214	116
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	224	1639	163	98	1465	44	8	42	80	355	214	116
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.34	0.66	1.00	0.65	0.35
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	516	984	1500	973	527
Capacity Analysis Module:												
Vol/Sat:	0.15	0.55	0.11	0.07	0.49	0.03	0.01	0.08	0.08	0.24	0.22	0.22
Crit Volume:	224				733			122			355	
Crit Moves:	****				****			****			****	

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City of Roseville
CIP Plus Project Conditions
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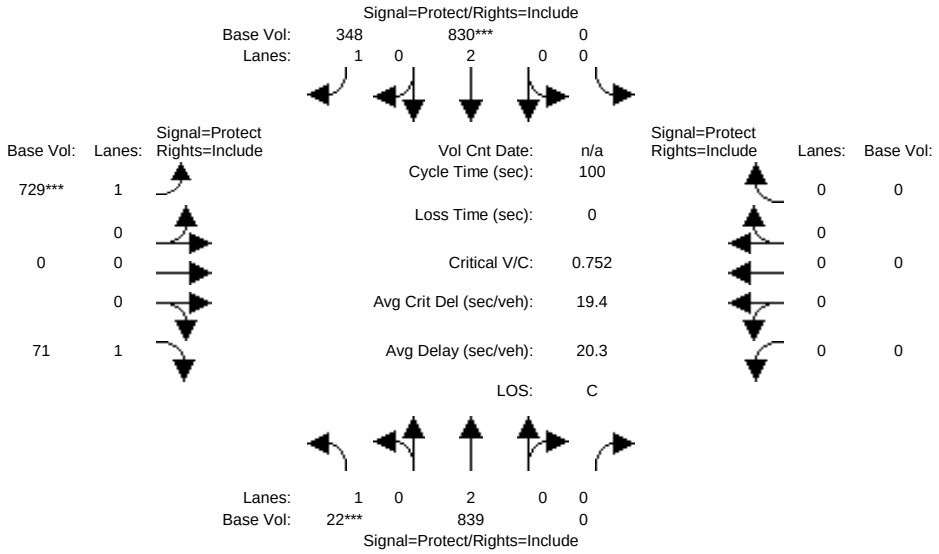
Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #308: Fiddyment Rd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	22	839	0	0	830	348	729	0	71	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	839	0	0	830	348	729	0	71	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	839	0	0	830	348	729	0	71	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	839	0	0	830	348	729	0	71	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	839	0	0	830	348	729	0	71	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	3100	0	0	3100	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.27	0.00	0.00	0.27	0.22	0.47	0.00	0.05	0.00	0.00	0.00
Crit Volume:	22				415		729				0	
Crit Moves:	****				****		****					

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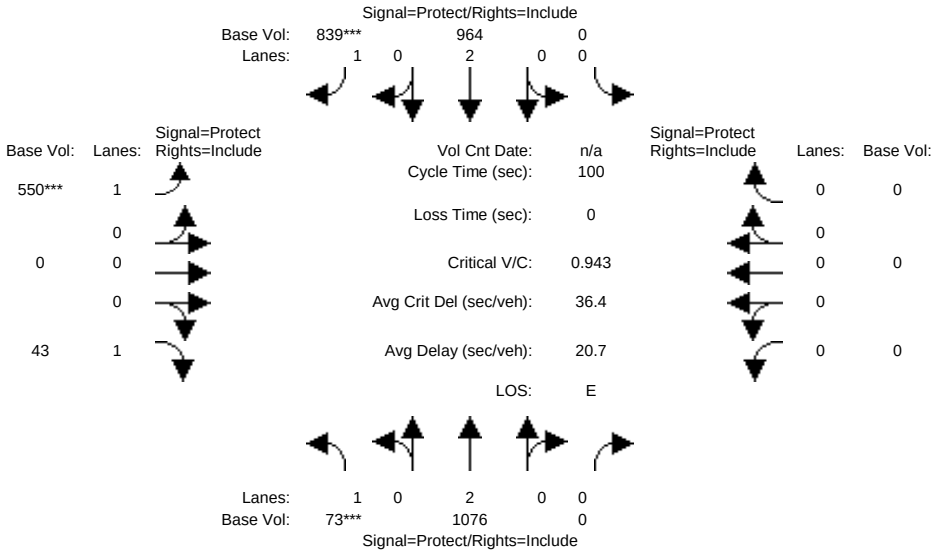
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #308: Fiddyment Rd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	73	1076	0	0	964	839	550	0	43	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	1076	0	0	964	839	550	0	43	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	73	1076	0	0	964	839	550	0	43	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	73	1076	0	0	964	839	550	0	43	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	73	1076	0	0	964	839	550	0	43	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	3100	0	0	3100	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.35	0.00	0.00	0.31	0.54	0.35	0.00	0.03	0.00	0.00	0.00
Crit Volume:	73					839	550				0	
Crit Moves:	****					****	****					

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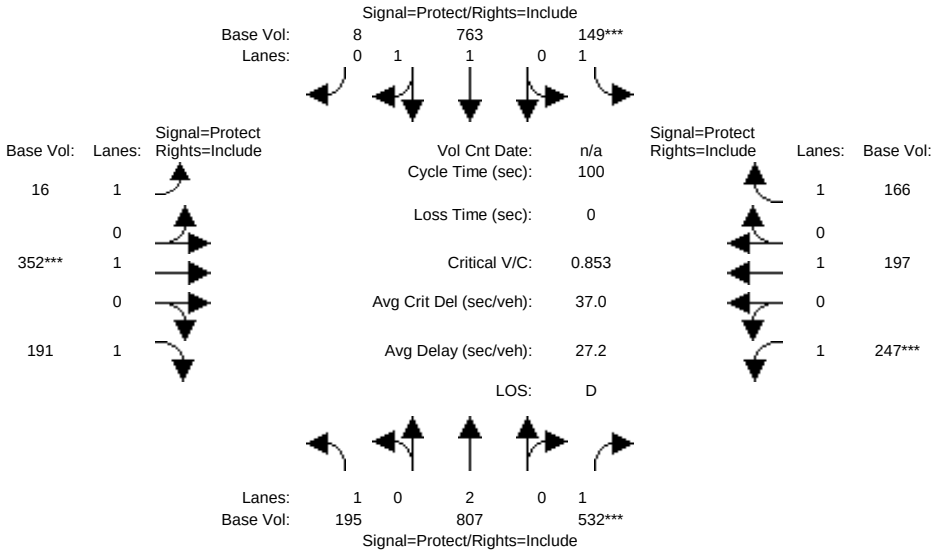
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #309: Fiddyment Rd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	195	807	532	149	763	8	16	352	191	247	197	166
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	195	807	532	149	763	8	16	352	191	247	197	166
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	195	807	532	149	763	8	16	352	191	247	197	166
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	807	532	149	763	8	16	352	191	247	197	166
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	195	807	532	149	763	8	16	352	191	247	197	166
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.98	0.02	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1500	3000	1500	1500	2969	31	1500	1500	1500	1500	1500	1500
Capacity Analysis Module:												
Vol/Sat:	0.13	0.27	0.35	0.10	0.26	0.26	0.01	0.23	0.13	0.16	0.13	0.11
Crit Volume:			532	149				352		247		
Crit Moves:			****	****				****		****		

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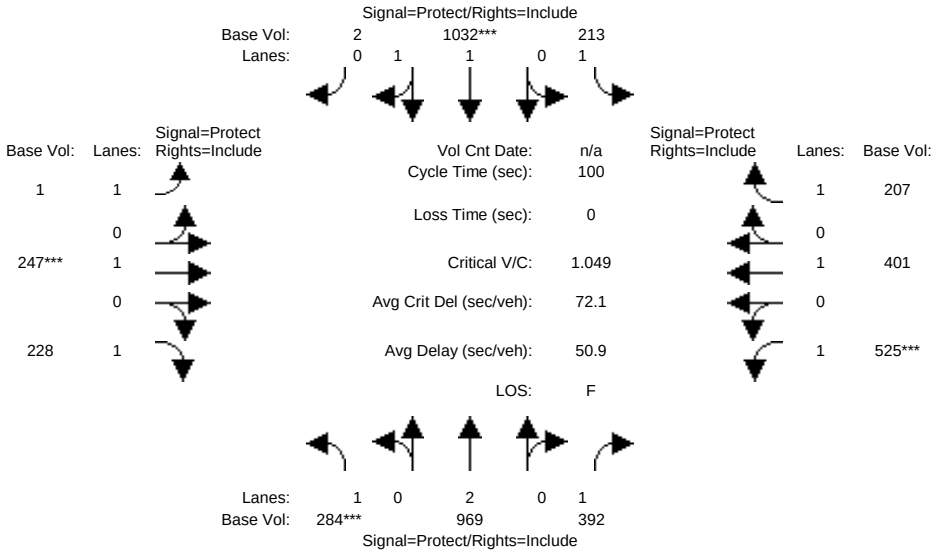
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #309: Fiddyment Rd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	284	969	392	213	1032	2	1	247	228	525	401	207
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	284	969	392	213	1032	2	1	247	228	525	401	207
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	284	969	392	213	1032	2	1	247	228	525	401	207
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	284	969	392	213	1032	2	1	247	228	525	401	207
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	284	969	392	213	1032	2	1	247	228	525	401	207
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.99	0.01	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1500	3000	1500	1500	2994	6	1500	1500	1500	1500	1500	1500
Capacity Analysis Module:												
Vol/Sat:	0.19	0.32	0.26	0.14	0.34	0.34	0.00	0.16	0.15	0.35	0.27	0.14
Crit Volume:	284				517			247			525	
Crit Moves:	****				****			****			****	

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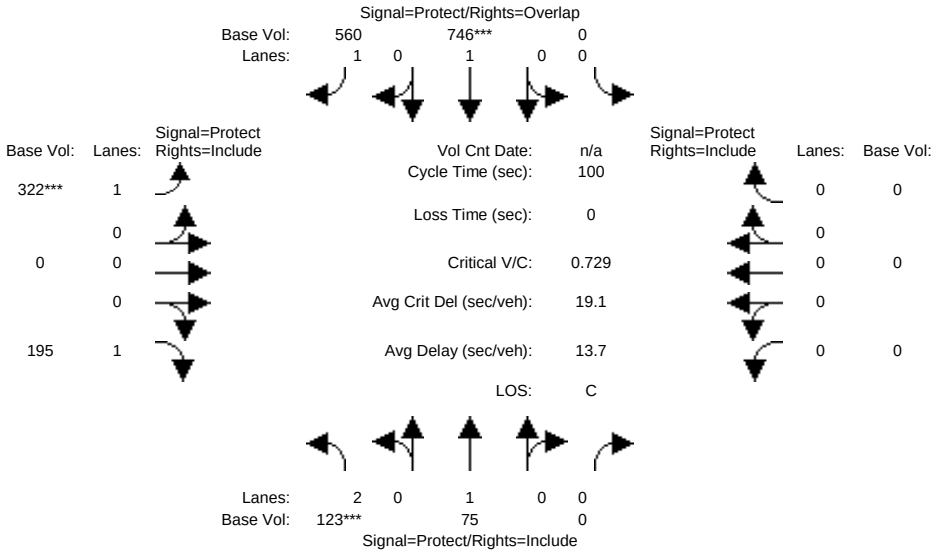
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	123	75	0	0	746	560	322	0	195	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	123	75	0	0	746	560	322	0	195	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	75	0	0	746	560	322	0	195	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	75	0	0	746	560	322	0	195	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	75	0	0	746	560	322	0	195	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.05	0.00	0.00	0.48	0.36	0.21	0.00	0.13	0.00	0.00	0.00
Crit Volume:	62				746		322				0	
Crit Moves:	****				****		****					

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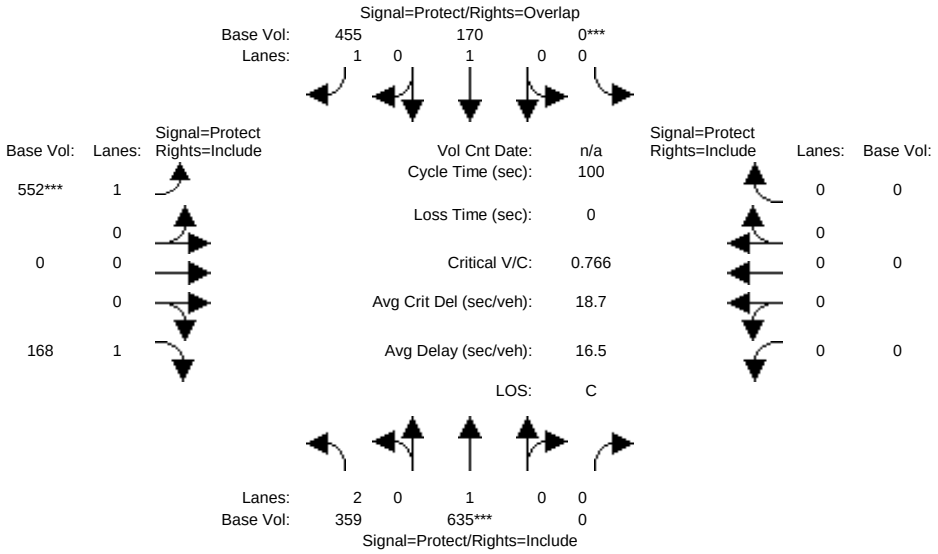
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	359	635	0	0	170	455	552	0	168	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	359	635	0	0	170	455	552	0	168	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	359	635	0	0	170	455	552	0	168	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	359	635	0	0	170	455	552	0	168	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	359	635	0	0	170	455	552	0	168	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.41	0.00	0.00	0.11	0.29	0.36	0.00	0.11	0.00	0.00	0.00
Crit Volume:		635			0			552			0	
Crit Moves:		****			****			****				

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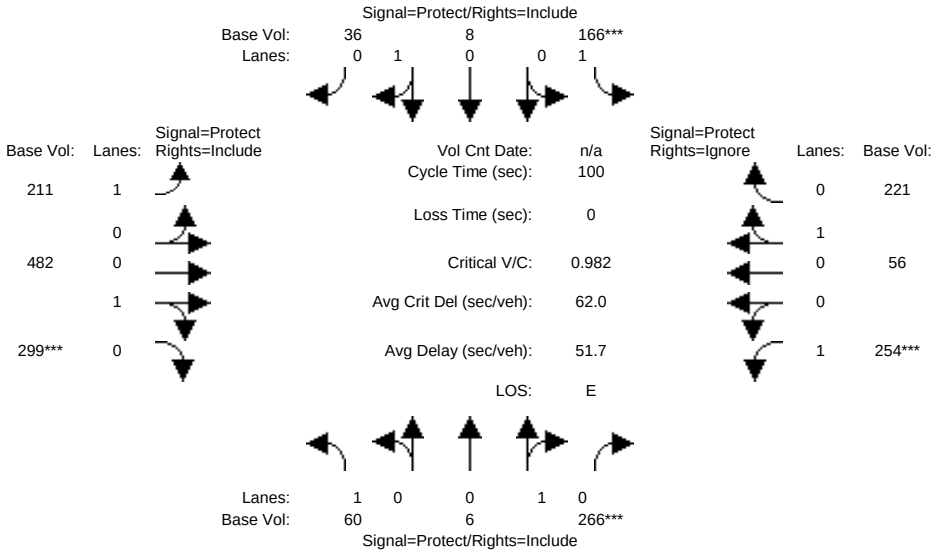
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	60	6	266	166	8	36	211	482	299	254	56	221
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	6	266	166	8	36	211	482	299	254	56	221
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	60	6	266	166	8	36	211	482	299	254	56	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	6	266	166	8	36	211	482	299	254	56	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	60	6	266	166	8	36	211	482	299	254	56	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	1.00	0.18	0.82	1.00	0.62	0.38	1.00	1.00	0.00
Final Sat.:	1500	33	1467	1500	273	1227	1500	926	574	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.18	0.11	0.03	0.03	0.14	0.52	0.52	0.17	0.04	0.00
Crit Volume:			272	166					781	254		
Crit Moves:			****	****					****	****		

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City of Roseville
CIP Plus Project Conditions
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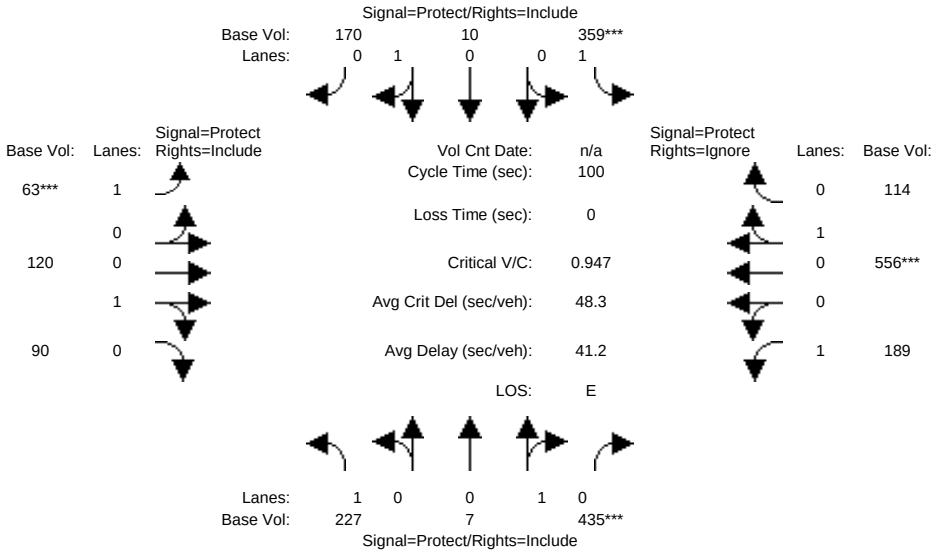
Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	227	7	435	359	10	170	63	120	90	189	556	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	227	7	435	359	10	170	63	120	90	189	556	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	227	7	435	359	10	170	63	120	90	189	556	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	227	7	435	359	10	170	63	120	90	189	556	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	227	7	435	359	10	170	63	120	90	189	556	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	1.00	0.06	0.94	1.00	0.57	0.43	1.00	1.00	0.00
Final Sat.:	1500	24	1476	1500	83	1417	1500	857	643	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.15	0.29	0.29	0.24	0.12	0.12	0.04	0.14	0.14	0.13	0.37	0.00
Crit Volume:			442	359			63				556	
Crit Moves:			****	****			****				****	

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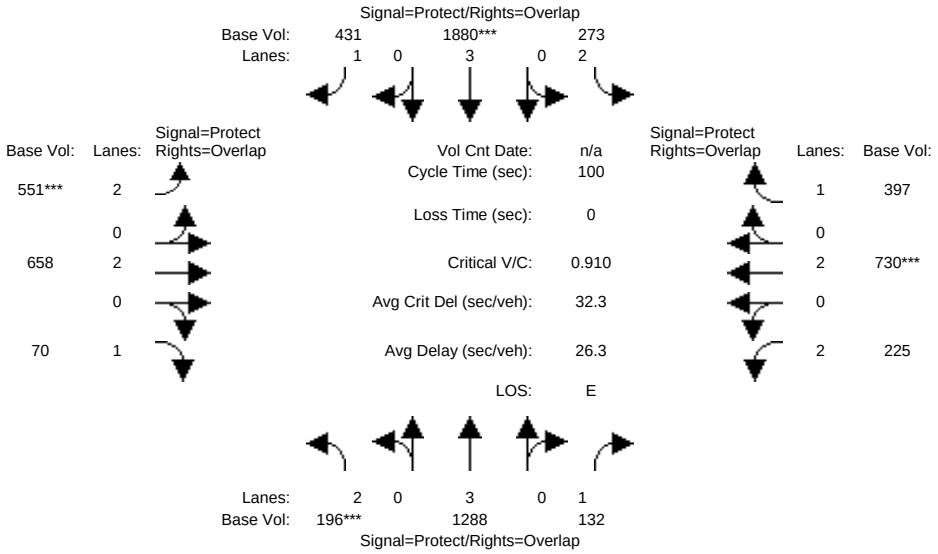
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	196	1288	132	273	1880	431	551	658	70	225	730	397
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	196	1288	132	273	1880	431	551	658	70	225	730	397
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	196	1288	132	273	1880	431	551	658	70	225	730	397
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	196	1288	132	273	1880	431	551	658	70	225	730	397
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	196	1288	132	273	1880	431	551	658	70	225	730	397
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.07	0.29	0.09	0.09	0.42	0.29	0.18	0.22	0.05	0.08	0.24	0.26
Crit Volume:	98				627		276				365	
Crit Moves:	****				****		****				****	

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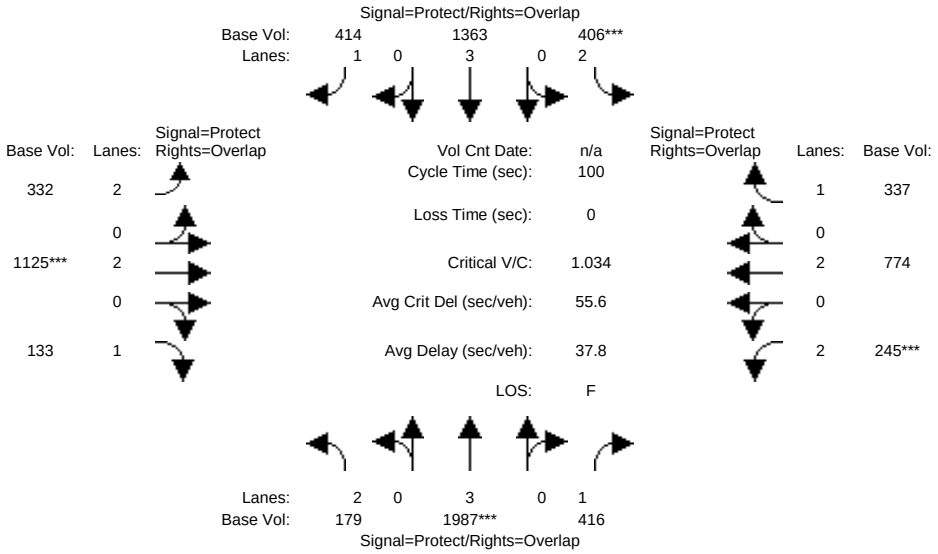
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	179	1987	416	406	1363	414	332	1125	133	245	774	337
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	179	1987	416	406	1363	414	332	1125	133	245	774	337
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	179	1987	416	406	1363	414	332	1125	133	245	774	337
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	179	1987	416	406	1363	414	332	1125	133	245	774	337
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	179	1987	416	406	1363	414	332	1125	133	245	774	337
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.44	0.28	0.14	0.30	0.28	0.11	0.38	0.09	0.08	0.26	0.22
Crit Volume:		662			203			563			123	
Crit Moves:		****			****			****			****	

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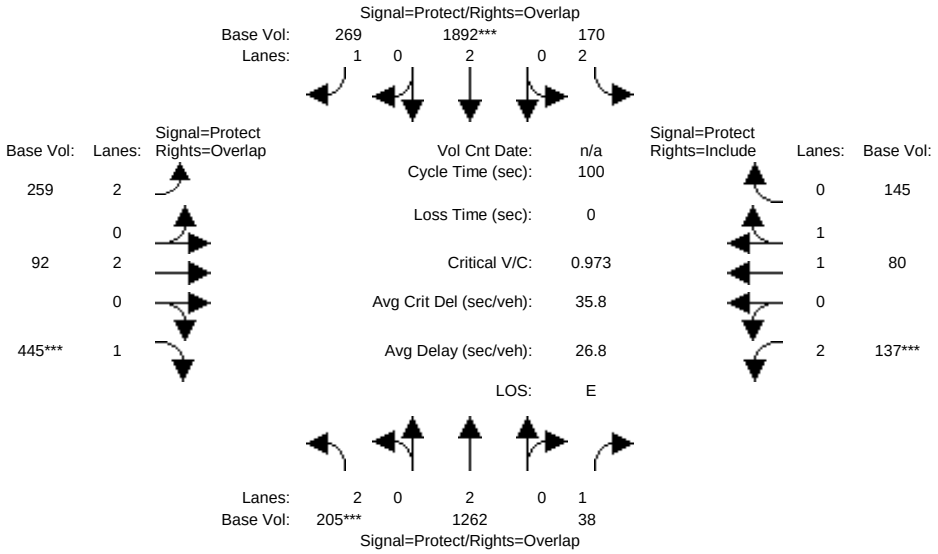
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	205	1262	38	170	1892	269	259	92	445	137	80	145
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	1262	38	170	1892	269	259	92	445	137	80	145
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	205	1262	38	170	1892	269	259	92	445	137	80	145
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	205	1262	38	170	1892	269	259	92	445	137	80	145
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	205	1262	38	170	1892	269	259	92	445	137	80	145
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	1500	1500
Capacity Analysis Module:												
Vol/Sat:	0.07	0.42	0.03	0.06	0.63	0.18	0.09	0.03	0.30	0.05	0.05	0.10
Crit Volume:	0				946				445	69		
Crit Moves:	****				****				****	****		

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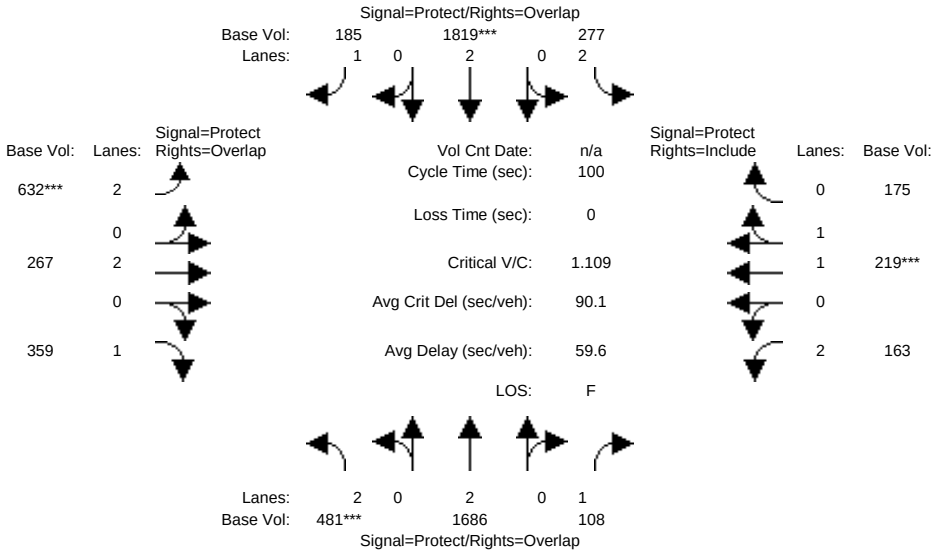
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	481	1686	108	277	1819	185	632	267	359	163	219	175
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	481	1686	108	277	1819	185	632	267	359	163	219	175
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	481	1686	108	277	1819	185	632	267	359	163	219	175
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	481	1686	108	277	1819	185	632	267	359	163	219	175
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	481	1686	108	277	1819	185	632	267	359	163	219	175
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.11	0.89
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	1668	1332
Capacity Analysis Module:												
Vol/Sat:	0.16	0.56	0.07	0.09	0.61	0.12	0.21	0.09	0.24	0.05	0.13	0.13
Crit Volume:	240				909		316				197	
Crit Moves:	****				****		****				****	

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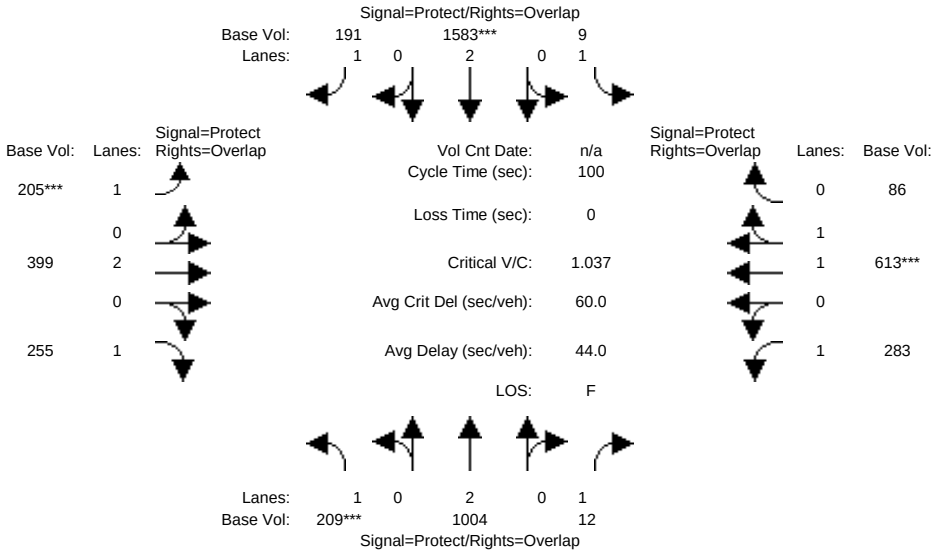
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	209	1004	12	9	1583	191	205	399	255	283	613	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	209	1004	12	9	1583	191	205	399	255	283	613	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	209	1004	12	9	1583	191	205	399	255	283	613	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	209	1004	12	9	1583	191	205	399	255	283	613	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	209	1004	12	9	1583	191	205	399	255	283	613	86
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.75	0.25
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	2631	369
Capacity Analysis Module:												
Vol/Sat:	0.14	0.33	0.01	0.01	0.53	0.13	0.14	0.13	0.17	0.19	0.23	0.23
Crit Volume:	209				791		205				349	
Crit Moves:	****				****		****				****	

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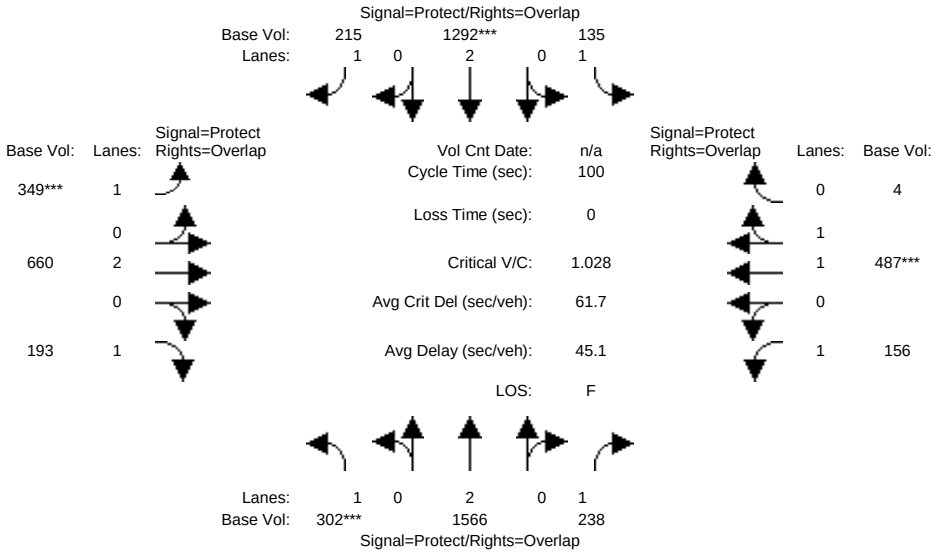
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	302	1566	238	135	1292	215	349	660	193	156	487	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	302	1566	238	135	1292	215	349	660	193	156	487	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	302	1566	238	135	1292	215	349	660	193	156	487	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	302	1566	238	135	1292	215	349	660	193	156	487	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	302	1566	238	135	1292	215	349	660	193	156	487	4
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	2976	24
Capacity Analysis Module:												
Vol/Sat:	0.20	0.52	0.16	0.09	0.43	0.14	0.23	0.22	0.13	0.10	0.16	0.16
Crit Volume:	302				646		349				246	
Crit Moves:	****				****		****				****	

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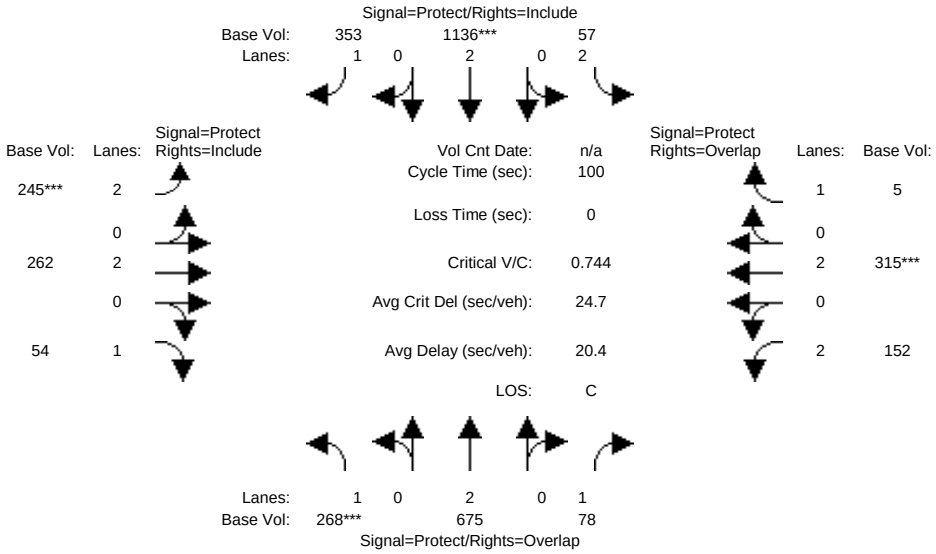
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	268	675	78	57	1136	353	245	262	54	152	315	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	268	675	78	57	1136	353	245	262	54	152	315	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	268	675	78	57	1136	353	245	262	54	152	315	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	268	675	78	57	1136	353	245	262	54	152	315	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	268	675	78	57	1136	353	245	262	54	152	315	5
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.18	0.23	0.05	0.02	0.38	0.24	0.08	0.09	0.04	0.05	0.11	0.00
Crit Volume:	268				568		123				158	
Crit Moves:	****				****		****				****	

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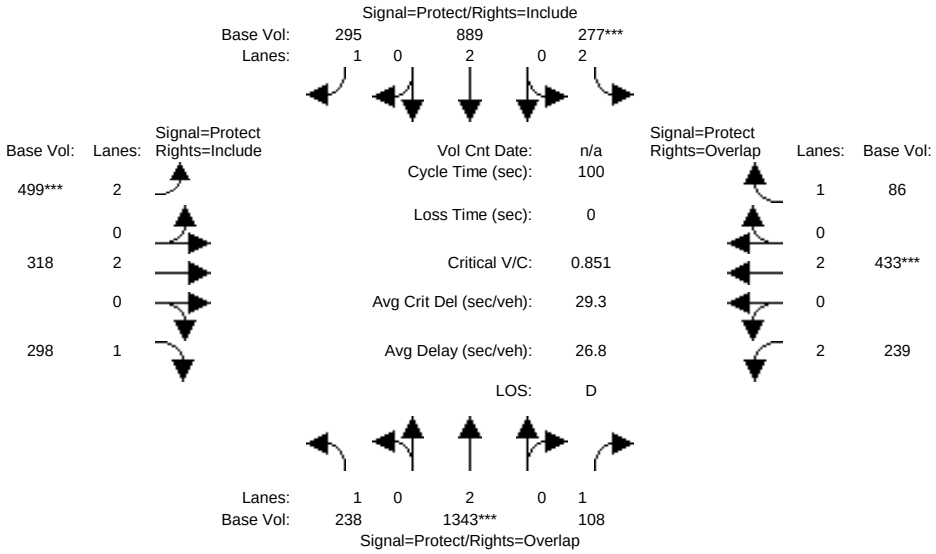
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	238	1343	108	277	889	295	499	318	298	239	433	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	238	1343	108	277	889	295	499	318	298	239	433	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	238	1343	108	277	889	295	499	318	298	239	433	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	238	1343	108	277	889	295	499	318	298	239	433	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	238	1343	108	277	889	295	499	318	298	239	433	86
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.16	0.45	0.07	0.09	0.30	0.20	0.17	0.11	0.20	0.08	0.14	0.06
Crit Volume:		672			139			250			217	
Crit Moves:		****			****			****			****	

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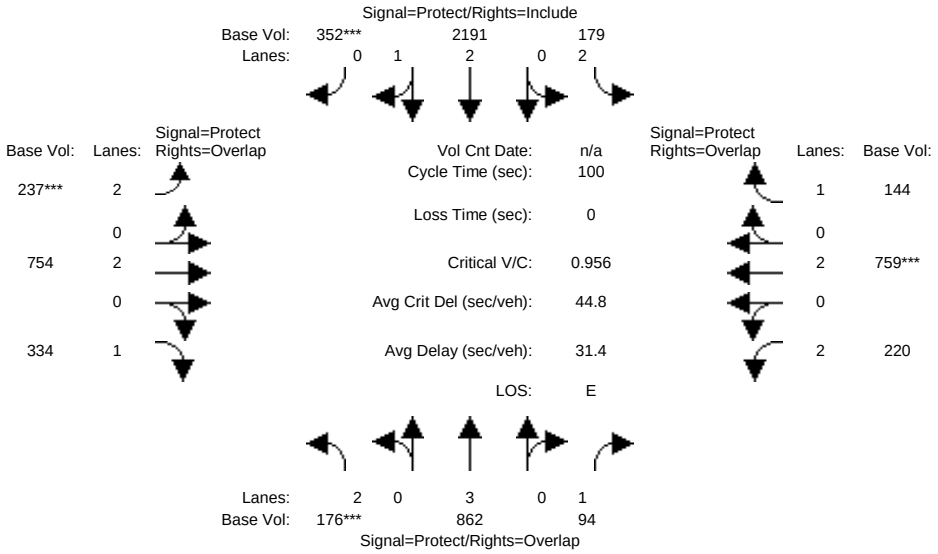
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	176	862	94	179	2191	352	237	754	334	220	759	144
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	176	862	94	179	2191	352	237	754	334	220	759	144
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	176	862	94	179	2191	352	237	754	334	220	759	144
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	862	94	179	2191	352	237	754	334	220	759	144
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	176	862	94	179	2191	352	237	754	334	220	759	144
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.58	0.42	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3877	623	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.06	0.06	0.57	0.57	0.08	0.25	0.22	0.07	0.25	0.10
Crit Volume:	88					848	119				380	
Crit Moves:	****					****	****				****	

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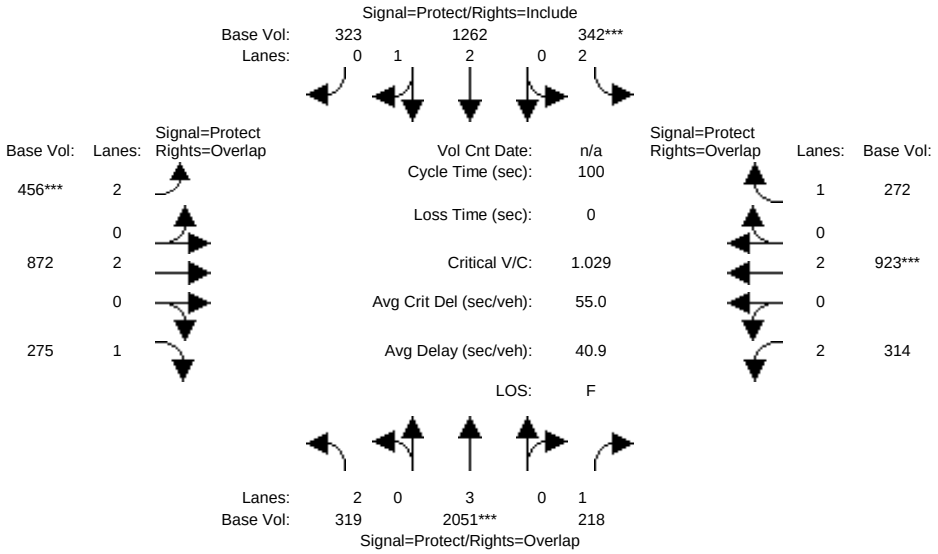
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	319	2051	218	342	1262	323	456	872	275	314	923	272
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	319	2051	218	342	1262	323	456	872	275	314	923	272
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	319	2051	218	342	1262	323	456	872	275	314	923	272
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	319	2051	218	342	1262	323	456	872	275	314	923	272
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	319	2051	218	342	1262	323	456	872	275	314	923	272
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.39	0.61	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3583	917	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.11	0.46	0.15	0.11	0.35	0.35	0.15	0.29	0.18	0.10	0.31	0.18
Crit Volume:		684			171			228			461	
Crit Moves:		****			****			****			****	

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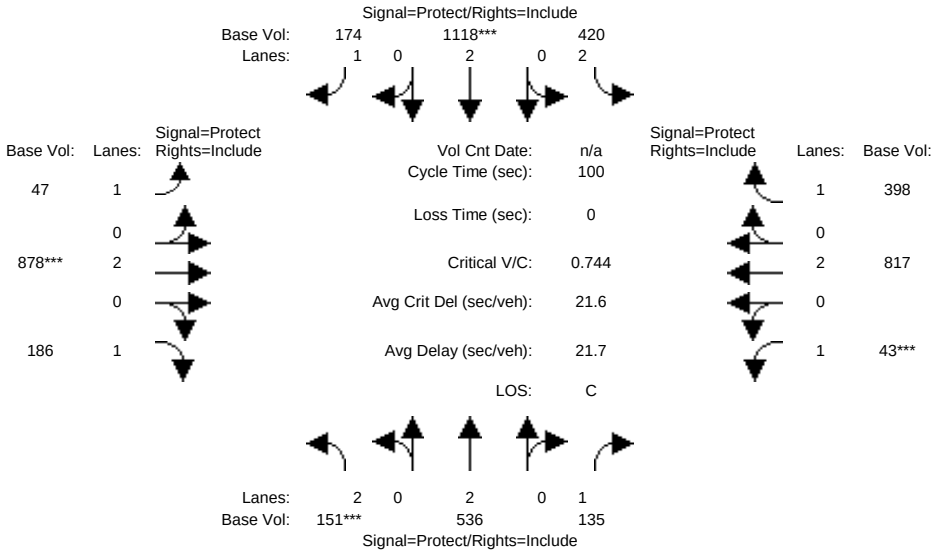
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #320: Walerga and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	151	536	135	420	1118	174	47	878	186	43	817	398
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	151	536	135	420	1118	174	47	878	186	43	817	398
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	151	536	135	420	1118	174	47	878	186	43	817	398
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	151	536	135	420	1118	174	47	878	186	43	817	398
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	151	536	135	420	1118	174	47	878	186	43	817	398
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.05	0.18	0.09	0.14	0.37	0.12	0.03	0.29	0.12	0.03	0.27	0.27
Crit Volume:	76				559			439		43		
Crit Moves:	****				****			****		****		

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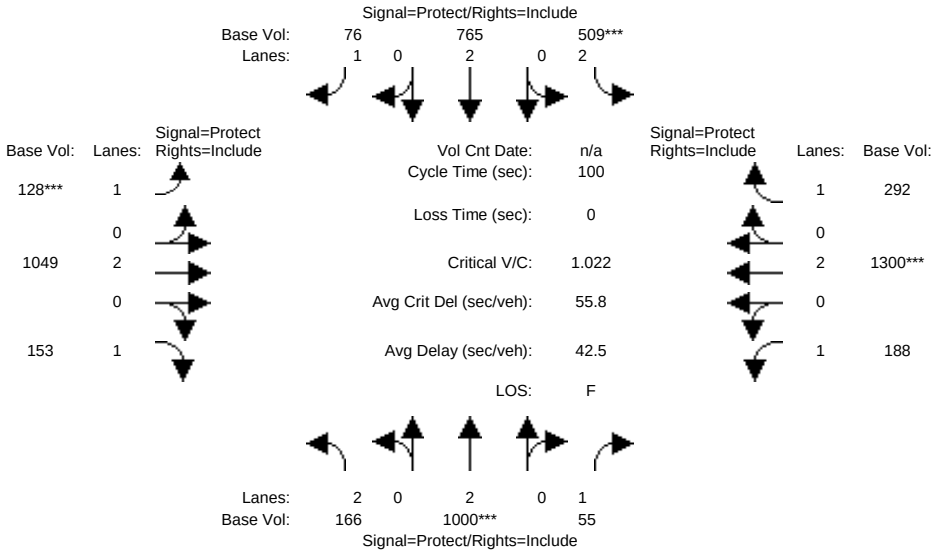
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #320: Walerga and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	166	1000	55	509	765	76	128	1049	153	188	1300	292
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	1000	55	509	765	76	128	1049	153	188	1300	292
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	166	1000	55	509	765	76	128	1049	153	188	1300	292
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	166	1000	55	509	765	76	128	1049	153	188	1300	292
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	166	1000	55	509	765	76	128	1049	153	188	1300	292
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.33	0.04	0.17	0.26	0.05	0.09	0.35	0.10	0.13	0.43	0.19
Crit Volume:		500			255			128			650	
Crit Moves:		****			****			****			****	

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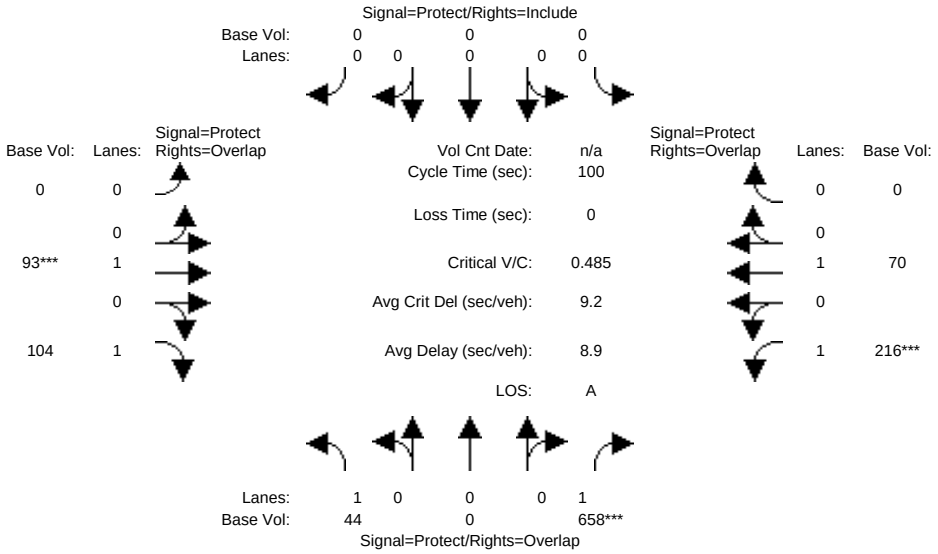
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #321: Westbrook Blvd/Sunset Blvd



Street Name:	Westbrook Boulevard						Sunset Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	44	0	658	0	0	0	0	93	104	216	70	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	0	658	0	0	0	0	93	104	216	70	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	44	0	658	0	0	0	0	93	104	216	70	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	0	658	0	0	0	0	93	104	216	70	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	0	658	0	0	0	0	93	104	216	70	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1550	0	1550	0	0	0	0	1550	1550	1550	1550	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.42	0.00	0.00	0.00	0.00	0.06	0.07	0.14	0.05	0.00
Crit Volume:			658	0				93		0		
Crit Moves:			****					****		****		

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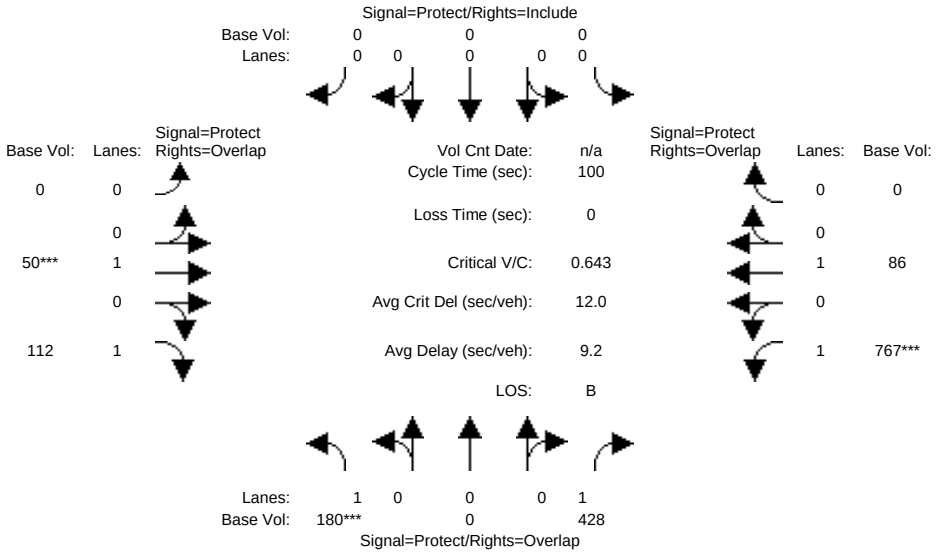
City of Roseville
CIP Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #321: Westbrook Blvd/Sunset Blvd



Street Name:	Westbrook Boulevard						Sunset Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	180	0	428	0	0	0	0	50	112	767	86	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	0	428	0	0	0	0	50	112	767	86	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	180	0	428	0	0	0	0	50	112	767	86	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	0	428	0	0	0	0	50	112	767	86	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	180	0	428	0	0	0	0	50	112	767	86	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1550	0	1550	0	0	0	0	1550	1550	1550	1550	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.28	0.00	0.00	0.00	0.00	0.03	0.07	0.49	0.06	0.00
Crit Volume:	180				0			50		767		
Crit Moves:	****							****		****		

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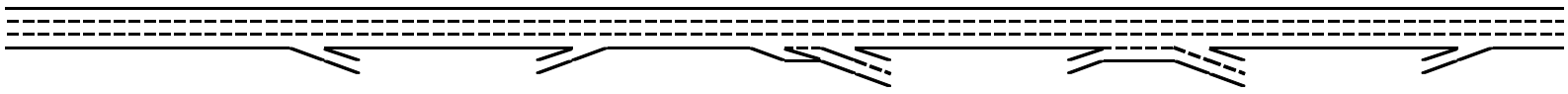
FREEWAY FACILITIES

Location	1	2	3	4	5	6	7	8	9



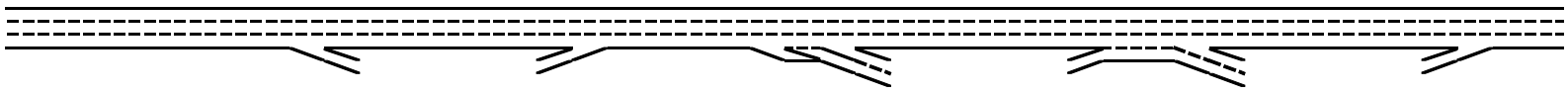
Key
<> Express Lane (HOV)
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Define Freeway Segment									
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	Weave	Basic	Merge
Length (ft)	1,780	1,500	2,960	1,500	1,500	1,250	3,370	1,920	1,500
Accel Length				270					375
Decel Length		120			1,500				
Mainline Volume	6,310	6,310	5,550	5,550	6,060	5,030	5,030	3,680	3,680
On Ramp Volume				510			430		740
Off Ramp Volume		760			1,030		1,780		
Express Lane Volume									
EL On Ramp Volume									
EL Off Ramp Volume									
Calculate Flow Rate in General Purpose Lanes (GP)									
GP Volume (vph)	6,310	6,310	5,550	6,060	6,060	5,030	5,460	3,680	4,420
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	3	3	3	4	3	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	6,792	6,792	5,974	6,522	6,522	5,414	5,877	3,961	4,757
GP Flow (pcphpl)	2,264	2,264	1,991	2,174	2,174	1,805	1,469	1,320	1,586
Calculate Speed in General Purpose Lanes									
Lane Width (ft)									
Shoulder Width									
TRD									
f_{LW}									
f_{LC}									
Calculated FFS									
Measured FFS									
FFS Curve	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes									
v/c ratio	0.96	0.96	0.85	0.93	0.93	0.77	0.63	0.56	0.67
Speed (mph)	54.4	54.4	60.0	56.5	56.5	62.7	64.9	65.0	64.5
Density (pcphpl)	41.6	41.6	33.2	38.5	38.5	28.8	22.6	20.3	24.6
LOS	E	E	D	E	E	D	C	C	C
Calculate Operations for Entering GP Lanes									
GP_{IN} Vol (pcph)		6,792		5,980	6,522		5,420		3,971
GP_{IN} Cap (pcph)		7,050		7,050	7,050		7,050		7,050
GP_{IN} v/c ratio		0.96		0.85	0.93		0.77		0.56
Calculate Operations for Exiting GP Lanes									
GP_{OUT} Vol (pcph)		6,008		6,522	5,422		3,975		4,757
GP_{OUT} Cap (pcph)		7,050		7,050	7,050		7,050		7,050
GP_{OUT} v/c ratio		0.85		0.93	0.77		0.56		0.67

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP Plus Project Conditions
Timee Period: 2014 AM Peak Hour

Location	1	2	3	4	5	6	7	8	9



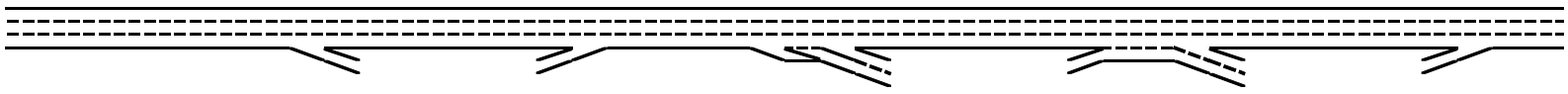
Key
<> Express Lane (HOV)
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Calculate Flow Rate in Express Lanes (EL)									
Calculate Speed in Express Lanes									
Calculate Operations in Express Lanes									
Calculate On Ramp Flow Rate									
On Volume (vph)				510			430		740
PHF				0.95			0.95		0.95
Total Lanes				1			1		1
Terrain				Level			Level		Level
Grade %				0.0%			0.0%		0.0%
Grade Length (mi)				0.00			0.00		0.00
Truck & Bus %				2.0%			2.0%		2.0%
RV %				0.0%			0.0%		0.0%
E_T				1.5			1.5		1.5
E_R				1.2			1.2		1.2
f_{HV}				0.990			0.990		0.990
f_P				1.00			1.00		1.00
On Flow (pcph)				542			457		787
On Flow (pcphpl)				542			457		787
Calculate On Ramp Roadway Operations									
On Ramp Type				Right			Right		Right
On Ramp Speed (mph)				45			25		25
On Ramp Cap (pcph)				2,100			1,900		1,900
On Ramp v/c ratio				0.26			0.24		0.41

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP Plus Project Conditions
Timee Period: 2014 AM Peak Hour

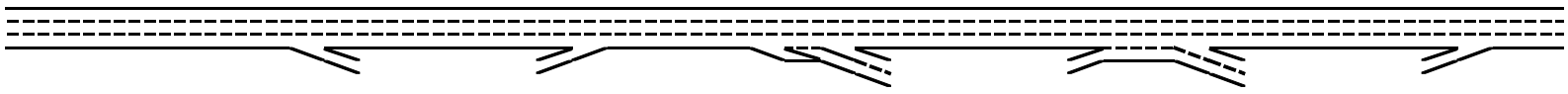
Location	1	2	3	4	5	6	7	8	9



Key
<> Express Lane (HOV)
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Calculate Off Ramp Flow Rate									
Off Volume (vph)		760			1,030		1,780		
PHF		0.98			0.95		0.95		
Total Lanes		1			2		2		
Terrain		Level			Level		Level		
Grade %		0.0%			0.0%		0.0%		
Grade Length (mi)		0.00			0.00		0.00		
Truck & Bus %		2.0%			3.0%		3.0%		
RV %		0.0%			0.0%		0.0%		
E_T		1.5			1.5		1.5		
E_R		1.2			1.2		1.2		
f_{HV}		0.990			0.985		0.985		
f_P		1.00			1.00		1.00		
Off Flow (pcph)		783			1,100		1,902		
Off Flow (pcphpl)		783			550		951		
Calculate Off Ramp Roadway Operations									
Off Ramp Type		Right			Right		Right		
Off Ramp Speed		45			45		45		
Off Ramp Cap (pcph)		2,100			4,200		4,200		
Off Ramp v/c ratio		0.37			0.26		0.45		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps									
Up Type		No		Off					No
Up Distance				2,960					
Up Flow (pcph)				783					
Down Type		On		No					No
Down Distance		2,960							
Down Flow (pcph)		542							
Calculate Merge Influence Area Operations									
Effective v_P (pcph)				5,980					3,971
Up Ramp L_{EQ}				1,467					
Down Ramp L_{EQ}									
P_{FM} (Eqn 13-3)				0.585					0.588
P_{FM} (Eqn 13-4)				0.679					
P_{FM} (Eqn 13-5)									
P_{FM}				0.585					0.588
v_{12} (pcph)				3,499					2,335
v_3 (pcph)				2,481					1,636
v_{34} (pcph)									
v_{12a} (pcph)				3,499					2,335
v_{R12a} (pcph)				4,041					3,121
Merge Speed Index				0.52					0.39
Merge Area Speed				53.1					56.0
Outer Lanes Volume				2,481					1,636
Outer Lanes Speed				57.4					60.9
Segment Speed				54.6					57.6
Merge v/c ratio				0.88					0.68
Merge Density				35.1					27.1
Merge LOS				E					C

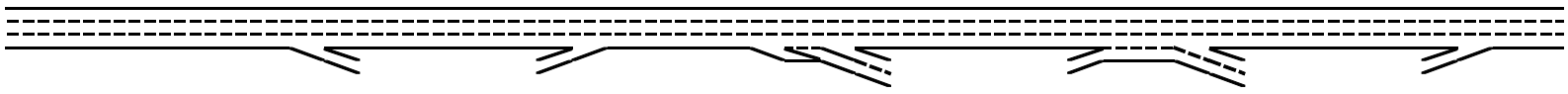
Location	1	2	3	4	5	6	7	8	9



Key
<> Express Lane (HOV)
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Calculate Diverge Influence Area Operations									
Effective v_P (pcph)		6,792			6,522				
Up Ramp L_{EQ}									
Down Ramp L_{EQ}		842							
P_{FD} (Eqn 13-9)		0.554			0.546				
P_{FD} (Eqn 13-10)									
P_{FD} (Eqn 13-11)									
P_{FD}		0.554			0.450				
v_{12} (pcph)		4,113			3,540				
v_3 (pcph)		2,679			2,982				
v_{34} (pcph)									
v_{12a} (pcph)		4,113			3,822				
Diverge Speed Index		0.37			0.40				
Diverge Area Speed		56.5			55.9				
Outer Lanes Volume		2,679			2,700				
Outer Lanes Speed		64.8			64.7				
Segment Speed		59.5			59.2				
Diverge v/c ratio		0.93			0.87				
Diverge Density		38.5			23.6				
Diverge LOS		E			C				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments									
On to Off Volume (vph)							50		
PHF							0.95		
Terrain							Level		
Grade %							0.0%		
Grade Length (mi)							0.00		
Truck & Bus %							3.0%		
RV %							0.0%		
E_T							1.5		
E_R							1.2		
f_{HV}							0.985		
f_P							1.00		
On to Off Flow (pcph)							53		
Calculate On Ramp to Mainline Flow Rate for Weave Segments									
On to ML Volume (vph)							380		
PHF							0.95		
Terrain							Level		
Grade %							0.0%		
Grade Length (mi)							0.00		
Truck & Bus %							3.0%		
RV %							0.0%		
E_T							1.5		
E_R							1.2		
f_{HV}							0.985		
f_P							1.00		
On to ML Flow (pcph)							406		

Location	1	2	3	4	5	6	7	8	9



Key

<> Express Lane (HOV)

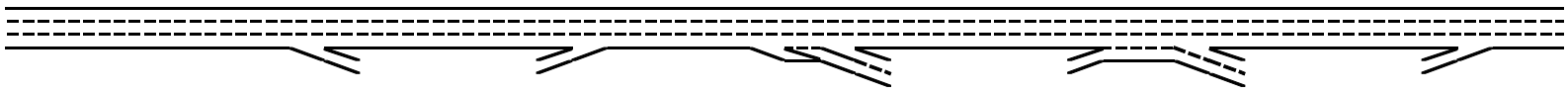
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Calculate Mainline to Off Ramp Flow Rate for Weave Segments									
ML to Off Volume (vph)							1,730		
PHF							0.95		
Terrain							Level		
Grade %							0.0%		
Grade Length (mi)							0.00		
Truck & Bus %							3.0%		
RV %							0.0%		
E_T							1.5		
E_R							1.2		
f_{HV}							0.985		
f_P							1.00		
ML to Off Flow (pcph)							1,848		
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments									
GP to GP Volume (vph)							3,300		
PHF							0.95		
Terrain							Level		
Grade %							0.0%		
Grade Length (mi)							0.00		
Truck & Bus %							3.0%		
RV %							0.0%		
E_T							1.5		
E_R							1.2		
f_{HV}							0.985		
f_P							1.00		
GP to GP Flow (pcph)							3,526		

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP Plus Project Conditions
Timee Period: 2014 AM Peak Hour

Location	1	2	3	4	5	6	7	8	9



Key
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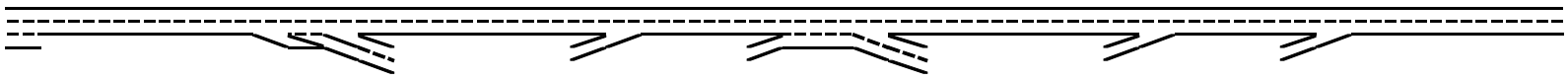
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Calculate Weave Segment Operations									
Weave Type							One-sided		
Weave Length							2,370		
Segment Lanes							4		
Weave Lanes							2		
Weave Flow (pcph)							2,254		
Non-Weave Flow							3,579		
Segment Flow							5,834		
Max Weave Length							6,530		
Length Check							OK		
Ideal Weave Capacity							2,032		
f_{HV}							0.985		
f_P							0.999		
Capacity Condition 1							7,999		
Capacity Condition 2							6,112		
Weave v/c ratio							0.94		
Interchange Density									
Lane Changes On to ML									
Lane Changes ML to Off									
Lane Changes On to Off									
Min Lane Change Rate									
Weave LC Rate									
Non-Weave LC Rate 1									
Non-Weave LC Rate 2									
Non-Weave LC Rate 3									
Segment LC Rate									
Weave Intensity Factor									
Weave Speed									
Non-Weave Speed									
Segment Speed									
Weave Density									
Weave LOS									
Summarize Segment Operations									
Segment v/c ratio	0.96	0.93	0.85	0.88	0.87	0.77	0.94	0.56	0.68
Segment Density	41.6	38.5	33.2	35.1	23.6	28.8		20.3	27.1
Segment LOS	E	E	D	E	C	D		C	C
Over Capacity									

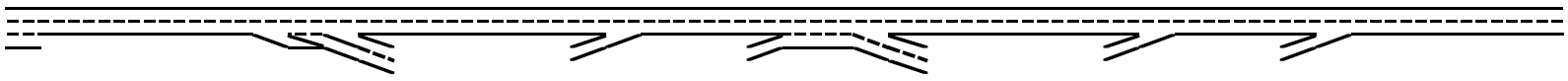
Location		10	11	12	13	14	15	16	17	18



Key
<> Express Lane (HOV)
No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Define Freeway Segment										
Type		Basic	Diverge	Basic	Merge	Weave	Basic	Merge	Merge	Basic
Length (ft)		3,300	1,500	1,800	1,000	2,770	1,420	1,150	1,500	1,020
Accel Length					620			340	1,260	
Decel Length			1,500							
Mainline Volume		4,420	4,420	2,890	2,890	3,060	2,580	2,580	2,610	2,980
On Ramp Volume					170	380		30	370	
Off Ramp Volume			1,530			860				
Express Lane Volume										
EL On Ramp Volume										
EL Off Ramp Volume										
Calculate Flow Rate in General Purpose Lanes										
GP Volume (vph)		4,420	4,420	2,890	3,060	3,440	2,580	2,610	2,980	2,980
PHF		0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes		2	2	2	2	3	2	2	2	2
Terrain		Level	Level	Level	Level	Level	Level	Level	Level	Level
Grade %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %		4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
RV %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}		0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978
f_P		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)		4,757	4,757	3,111	3,294	3,703	2,777	2,809	3,207	3,207
GP Flow (pcphpl)		2,379	2,379	1,555	1,647	1,234	1,388	1,405	1,604	1,604
Calculate Speed in General Purpose Lanes										
Lane Width (ft)										
Shoulder Width										
TRD										
f_{LW}										
f_{LC}										
Calculated FFS										
Measured FFS										
FFS Curve		65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes										
v/c ratio		1.01	1.01	0.66	0.70	0.53	0.59	0.60	0.68	0.68
Speed (mph)		-	-	64.7	64.1	65.0	65.0	65.0	64.4	64.4
Density (pcphpl)		-	-	24.1	25.7	19.0	21.4	21.6	24.9	24.9
LOS		F	F	C	C	C	C	C	C	C
Calculate Operations for Entering GP Lanes										
GP_{IN} Vol (pcph)			4,757		3,113	3,299		2,777	2,814	
GP_{IN} Cap (pcph)			4,700		4,700	4,700		4,700	4,700	
GP_{IN} v/c ratio			1.01		0.66	0.70		0.59	0.60	
Calculate Operations for Exiting GP Lanes										
GP_{OUT} Vol (pcph)			3,131		3,294	2,788		2,809	3,207	
GP_{OUT} Cap (pcph)			4,700		4,700	4,700		4,700	4,700	
GP_{OUT} v/c ratio			0.67		0.70	0.59		0.60	0.68	

Location		10	11	12	13	14	15	16	17	18



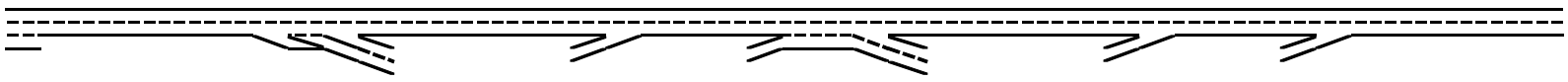
Key
<> Express Lane (HOV)
No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Calculate Flow Rate in Express Lanes (EL)										
Calculate Speed in Express Lanes										
Calculate Operations in Express Lanes										
Calculate On Ramp Flow Rate										
On Volume (vph)					170	380		30	370	
PHF					0.95	0.95		0.95	0.95	
Total Lanes					1	1		1	1	
Terrain					Level	Level		Level	Level	
Grade %					0.0%	0.0%		0.0%	0.0%	
Grade Length (mi)					0.00	0.00		0.00	0.00	
Truck & Bus %					2.0%	2.0%		2.0%	2.0%	
RV %					0.0%	0.0%		0.0%	0.0%	
E_T					1.5	1.5		1.5	1.5	
E_R					1.2	1.2		1.2	1.2	
f_{HV}					0.990	0.990		0.990	0.990	
f_P					1.00	1.00		1.00	1.00	
On Flow (pcph)					181	404		32	393	
On Flow (pcphpl)					181	404		32	393	
Calculate On Ramp Roadway Operations										
On Ramp Type					Right	Right		Right	Right	
On Ramp Speed (mph)					25	45		25	45	
On Ramp Cap (pcph)					1,900	2,100		1,900	2,100	
On Ramp v/c ratio					0.10	0.19		0.02	0.19	

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP Plus Project Conditions
Timee Period: 2014 AM Peak Hour

Location		10	11	12	13	14	15	16	17	18



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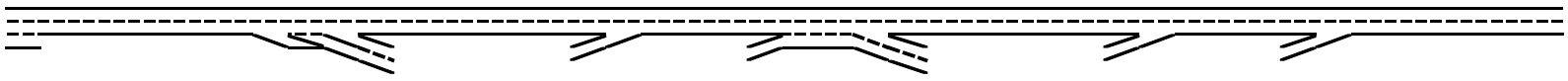
No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Calculate Off Ramp Flow Rate										
Off Volume (vph)			1,530			860				
PHF			0.95			0.95				
Total Lanes			2			2				
Terrain			Level			Level				
Grade %			0.0%			0.0%				
Grade Length (mi)			0.00			0.00				
Truck & Bus %			2.0%			2.0%				
RV %			0.0%			0.0%				
E_T			1.5			1.5				
E_R			1.2			1.2				
f_{HV}			0.990			0.990				
f_P			1.00			1.00				
Off Flow (pcph)			1,627			914				
Off Flow (pcphpl)			813			457				
Calculate Off Ramp Roadway Operations										
Off Ramp Type			Right							
Off Ramp Speed			45							
Off Ramp Cap (pcph)			4,200							
Off Ramp v/c ratio			0.39							
Determine Adjacent Ramp for Three-Lane Main										
Up Type										
Up Distance										
Up Flow (pcph)										
Down Type										
Down Distance										
Down Flow (pcph)										
Calculate Merge Influence Area Operations										
Effective v_P (pcph)					3,113			2,777	2,814	
Up Ramp L_{EQ}										
Down Ramp L_{EQ}										
P_{FM} (Eqn 13-3)					0.595			0.587	0.613	
P_{FM} (Eqn 13-4)										
P_{FM} (Eqn 13-5)										
P_{FM}					1.000			1.000	1.000	
v_{12} (pcph)					3,113			2,777	2,814	
v_3 (pcph)										
v_{34} (pcph)										
v_{12a} (pcph)					3,113			2,777	2,814	
v_{R12a} (pcph)					3,294			2,809	3,207	
Merge Speed Index					0.40			0.37	0.30	
Merge Area Speed					55.9			56.5	58.0	
Outer Lanes Volume										
Outer Lanes Speed										
Segment Speed					55.9			56.5	58.0	
Merge v/c ratio					0.72			0.61	0.70	
Merge Density					27.2			25.2	22.4	
Merge LOS					C			C	C	

Location		10	11	12	13	14	15	16	17	18



Key
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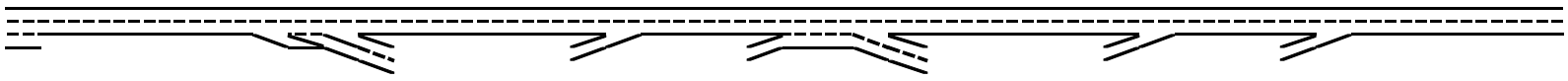
No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Calculate Diverge Influence Area Operations										
Effective v_P (pcph)			4,757							
Up Ramp L_{EQ}										
Down Ramp L_{EQ}										
P_{FD} (Eqn 13-9)			0.566							
P_{FD} (Eqn 13-10)										
P_{FD} (Eqn 13-11)										
P_{FD}			1.000							
v_{12} (pcph)			4,757							
v_3 (pcph)										
v_{34} (pcph)										
v_{12a} (pcph)			4,757							
Diverge Speed Index			-							
Diverge Area Speed			-							
Outer Lanes Volume										
Outer Lanes Speed										
Segment Speed										
Diverge v/c ratio			1.08							
Diverge Density			-							
Diverge LOS			F							
Calculate On Ramp to Off Ramp Flow Rate for										
On to Off Volume (vph)						95				
PHF						0.95				
Terrain						Level				
Grade %						0.0%				
Grade Length (mi)						0.00				
Truck & Bus %						3.0%				
RV %						0.0%				
E_T						1.5				
E_R						1.2				
f_{HV}						0.985				
f_P						1.00				
On to Off Flow (pcph)						102				
Calculate On Ramp to Mainline Flow Rate for W										
On to ML Volume (vph)						285				
PHF						0.95				
Terrain						Level				
Grade %						0.0%				
Grade Length (mi)						0.00				
Truck & Bus %						3.0%				
RV %						0.0%				
E_T						1.5				
E_R						1.2				
f_{HV}						0.985				
f_P						1.00				
On to ML Flow (pcph)						305				

Location		10	11	12	13	14	15	16	17	18



Key
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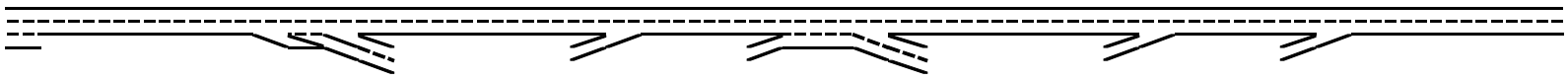
No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Calculate Mainline to Off Ramp Flow Rate for W										
ML to Off Volume (vph)						765				
PHF						0.95				
Terrain						Level				
Grade %						0.0%				
Grade Length (mi)						0.00				
Truck & Bus %						6.0%				
RV %						0.0%				
E_T						1.5				
E_R						1.2				
f_{HV}						0.971				
f_P						1.00				
ML to Off Flow (pcph)						829				
Calculate General Purpose Lanes to General Pu										
GP to GP Volume (vph)						2,295				
PHF						0.95				
Terrain						Level				
Grade %						0.0%				
Grade Length (mi)						0.00				
Truck & Bus %						6.0%				
RV %						0.0%				
E_T						1.5				
E_R						1.2				
f_{HV}						0.971				
f_P						1.00				
GP to GP Flow (pcph)						2,488				

Location		10	11	12	13	14	15	16	17	18



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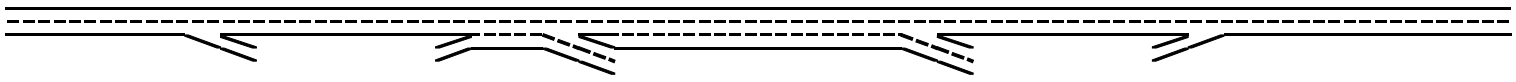
No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Calculate Weave Segment Operations										
Weave Type						One-sided				
Weave Length						1,770				
Segment Lanes						3				
Weave Lanes						2				
Weave Flow (pcph)						1,134				
Non-Weave Flow						2,590				
Segment Flow						3,724				
Max Weave Length						5,632				
Length Check						OK				
Ideal Weave Capacity						2,055				
f_{HV}						0.972				
f_P						0.999				
Capacity Condition 1						5,986				
Capacity Condition 2						7,655				
Weave v/c ratio						0.60				
Interchange Density										
Lane Changes On to ML										
Lane Changes ML to Off										
Lane Changes On to Off										
Min Lane Change Rate										
Weave LC Rate										
Non-Weave LC Rate 1										
Non-Weave LC Rate 2										
Non-Weave LC Rate 3										
Segment LC Rate										
Weave Intensity Factor										
Weave Speed										
Non-Weave Speed										
Segment Speed										
Weave Density										
Weave LOS										
Summarize Segment Operations										
Segment v/c ratio		1.01	1.08	0.66	0.72	0.60	0.59	0.61	0.70	0.68
Segment Density		-	-	24.1	27.2		21.4	25.2	22.4	24.9
Segment LOS		F	F	C	C		C	C	C	C
Over Capacity		Segment GP Lanes	Segment GP Lanes In GP Lanes Diverge							

Location		19	20	21	22	23	24	25	26



Key
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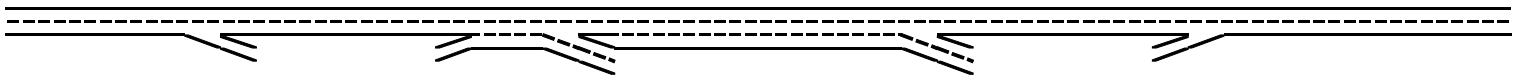
No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segment									
Type		Diverge	Basic	Weave	Basic	Basic	Basic	Merge	Basic
Length (ft)		1,500	2,590	2,680	900	1,500	2,870	1,500	8,600
Accel Length								600	
Decel Length		175							
Mainline Volume		2,980	2,060	2,060	1,910	1,910	940	940	1,320
On Ramp Volume				570				380	
Off Ramp Volume		920		720		970			
Express Lane Volume									
EL On Ramp Volume									
EL Off Ramp Volume									
Calculate Flow Rate in General Purpose Lanes									
GP Volume (vph)		2,980	2,060	2,630	1,910	1,910	940	1,320	1,320
PHF		0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes		2	2	3	3	3	2	2	2
Terrain		Level	Level	Level	Level	Level	Level	Level	Level
Grade %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %		4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
RV %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}		0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978
f_P		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)		3,207	2,217	2,831	2,056	2,056	1,012	1,421	1,421
GP Flow (pcphpl)		1,604	1,109	944	685	685	506	710	710
Calculate Speed in General Purpose Lanes									
Lane Width (ft)									
Shoulder Width									
TRD									
f_{LW}									
f_{LC}									
Calculated FFS									
Measured FFS									
FFS Curve		65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes									
v/c ratio		0.68	0.47	0.40	0.29	0.29	0.22	0.30	0.30
Speed (mph)		64.4	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)		24.9	17.1	14.5	10.5	10.5	7.8	10.9	10.9
LOS		C	B	B	A	A	A	A	A
Calculate Operations for Entering GP Lanes									
GP_{IN} Vol (pcph)		3,207		2,210				1,013	
GP_{IN} Cap (pcph)		4,700		4,700				4,700	
GP_{IN} v/c ratio		0.68		0.47				0.22	
Calculate Operations for Exiting GP Lanes									
GP_{OUT} Vol (pcph)		2,229		2,061		1,014		1,421	
GP_{OUT} Cap (pcph)		4,700		4,700		4,700		4,700	
GP_{OUT} v/c ratio		0.47		0.44		0.22		0.30	

Location		19	20	21	22	23	24	25	26



Key
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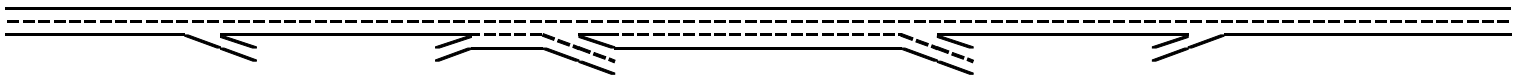
No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in Express Lanes (EL)									
Calculate Speed in Express Lanes									
Calculate Operations in Express Lanes									
Calculate On Ramp Flow Rate									
On Volume (vph)				570				380	
PHF				0.95				0.95	
Total Lanes				1				1	
Terrain				Level				Level	
Grade %				0.0%				0.0%	
Grade Length (mi)				0.00				0.00	
Truck & Bus %				7.0%				4.0%	
RV %				0.0%				0.0%	
E_T				1.5				1.5	
E_R				1.2				1.2	
f_{HV}				0.966				0.980	
f_P				1.00				1.00	
On Flow (pcph)				621				408	
On Flow (pcphpl)				621				408	
Calculate On Ramp Roadway Operations									
On Ramp Type				Right				Right	
On Ramp Speed (mph)				45				45	
On Ramp Cap (pcph)				2,100				2,100	
On Ramp v/c ratio				0.30				0.19	

Location		19	20	21	22	23	24	25	26



Key
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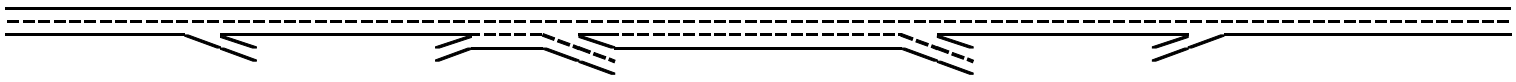
No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flow Rate									
Off Volume (vph)		920		720		970			
PHF		0.95		0.95		0.95			
Total Lanes		1		2		2			
Terrain		Level		Level		Level			
Grade %		0.0%		0.0%		0.0%			
Grade Length (mi)		0.00		0.00		0.00			
Truck & Bus %		2.0%		3.0%		4.0%			
RV %		0.0%		0.0%		0.0%			
E_T		1.5		1.5		1.5			
E_R		1.2		1.2		1.2			
f_{HV}		0.990		0.985		0.980			
f_P		1.00		1.00		1.00			
Off Flow (pcph)		978		769		1,041			
Off Flow (pcphpl)		978		385		521			
Calculate Off Ramp Roadway Operations									
Off Ramp Type		Right		Right		Right			
Off Ramp Speed		45		45		45			
Off Ramp Cap (pcph)		2,100		4,200		4,200			
Off Ramp v/c ratio		0.47		0.18		0.25			
Determine Adjacent Ramp for Three-Lane Main									
Up Type									
Up Distance									
Up Flow (pcph)									
Down Type									
Down Distance									
Down Flow (pcph)									
Calculate Merge Influence Area Operations									
Effective v_P (pcph)								1,013	
Up Ramp L_{EQ}									
Down Ramp L_{EQ}									
P_{FM} (Eqn 13-3)								0.594	
P_{FM} (Eqn 13-4)									
P_{FM} (Eqn 13-5)									
P_{FM}								1.000	
v_{12} (pcph)								1,013	
v_3 (pcph)									
v_{34} (pcph)									
v_{12a} (pcph)								1,013	
v_{R12a} (pcph)								1,421	
Merge Speed Index								0.28	
Merge Area Speed								58.5	
Outer Lanes Volume									
Outer Lanes Speed									
Segment Speed								58.5	
Merge v/c ratio								0.31	
Merge Density								12.6	
Merge LOS								B	

Location		19	20	21	22	23	24	25	26



Key

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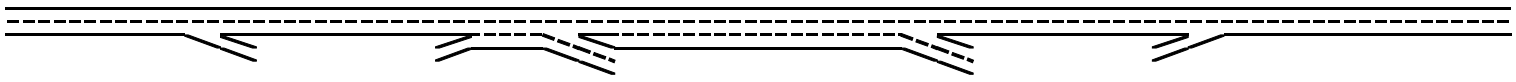
No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influence Area Operations									
Effective v_P (pcph)		3,207							
Up Ramp L_{EQ}									
Down Ramp L_{EQ}									
P_{FD} (Eqn 13-9)		0.635							
P_{FD} (Eqn 13-10)									
P_{FD} (Eqn 13-11)									
P_{FD}		1.000							
v_{12} (pcph)		3,207							
v_3 (pcph)									
v_{34} (pcph)									
v_{12a} (pcph)		3,207							
Diverge Speed Index		0.39							
Diverge Area Speed		56.1							
Outer Lanes Volume									
Outer Lanes Speed									
Segment Speed		56.1							
Diverge v/c ratio		0.73							
Diverge Density		30.3							
Diverge LOS		D							
Calculate On Ramp to Off Ramp Flow Rate for V									
On to Off Volume (vph)				57					
PHF				0.8					
Terrain				Level					
Grade %				0.0%					
Grade Length (mi)				0.00					
Truck & Bus %				7.0%					
RV %				0.0%					
E_T				1.5					
E_R				1.2					
f_{HV}				0.966					
f_P				1.00					
On to Off Flow (pcph)				74					
Calculate On Ramp to Mainline Flow Rate for W									
On to ML Volume (vph)				513					
PHF				0.8					
Terrain				Level					
Grade %				0.0%					
Grade Length (mi)				0.00					
Truck & Bus %				3.0%					
RV %				0.0%					
E_T				1.5					
E_R				1.2					
f_{HV}				0.985					
f_P				1.00					
On to ML Flow (pcph)				651					

Location		19	20	21	22	23	24	25	26



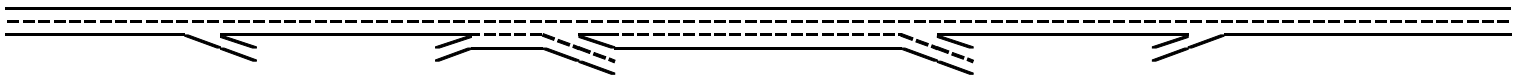
Key

<> Express Lane (HOV)

No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to Off Ramp Flow Rate for W									
ML to Off Volume (vph)				663					
PHF				0.83					
Terrain				Level					
Grade %				0.0%					
Grade Length (mi)				0.00					
Truck & Bus %				3.0%					
RV %				0.0%					
E_T				1.5					
E_R				1.2					
f_{HV}				0.985					
f_P				1.00					
ML to Off Flow (pcph)				811					
Calculate General Purpose Lanes to General Pu									
GP to GP Volume (vph)				1,397					
PHF				0.825					
Terrain				Level					
Grade %				0.0%					
Grade Length (mi)				0.00					
Truck & Bus %				3.0%					
RV %				0.0%					
E_T				1.5					
E_R				1.2					
f_{HV}				0.985					
f_P				1.00					
GP to GP Flow (pcph)				1,719					

Location		19	20	21	22	23	24	25	26



Key

<> Express Lane (HOV)

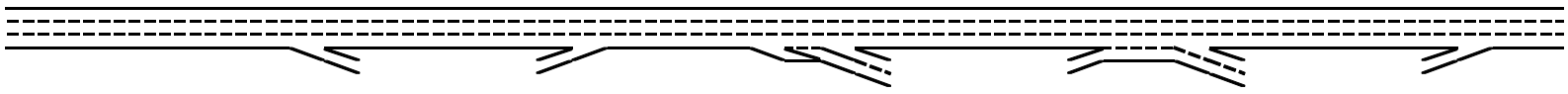
No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segment Operations									
Weave Type				One-sided					
Weave Length				1,680					
Segment Lanes				3					
Weave Lanes				3					
Weave Flow (pcph)				1,462					
Non-Weave Flow				1,792					
Segment Flow				3,254					
Max Weave Length				5,672					
Length Check				OK					
Ideal Weave Capacity				2,045					
f_{HV}				0.985					
f_P				0.997					
Capacity Condition 1				6,023					
Capacity Condition 2				7,651					
Weave v/c ratio				0.53					
Interchange Density				0.666666667					
Lane Changes On to ML									
Lane Changes ML to Off									
Lane Changes On to Off									
Min Lane Change Rate				0					
Weave LC Rate				564					
Non-Weave LC Rate 1				702					
Non-Weave LC Rate 2				2,089					
Non-Weave LC Rate 3				-1,643					
Segment LC Rate				1,266					
Weave Intensity Factor				0.181					
Weave Speed				57.3					
Non-Weave Speed				59.8					
Segment Speed				58.7					
Weave Density				18.5					
Weave LOS				B					
Summarize Segment Operations									
Segment v/c ratio		0.73	0.47	0.53	0.29	0.29	0.22	0.31	0.30
Segment Density		30.3	17.1	18.5	10.5	10.5	7.8	12.6	10.9
Segment LOS		D	B	B	A	A	A	B	A
Over Capacity									

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP Plus Project Conditions
Timee Period: 2035 PM Peak Hour

Location	1	2	3	4	5	6	7	8	9



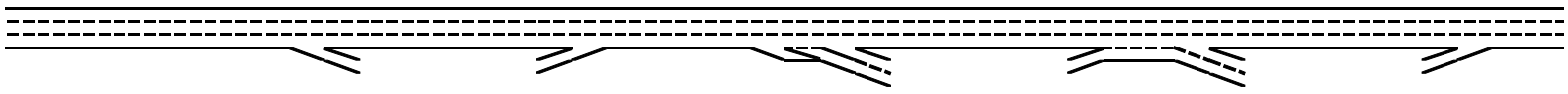
Key
<> Express Lane (HOV)
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Define Freeway Segment									
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	Weave	Basic	Merge
Length (ft)	1,780	1,500	2,960	1,500	1,500	1,250	3,370	1,920	1,500
Accel Length				270					375
Decel Length		120			1,500				
Mainline Volume	6,190	6,190	4,960	4,960	5,990	4,700	4,700	3,870	3,870
On Ramp Volume				1,030			910		320
Off Ramp Volume		1,230			1,290		1,740		
Express Lane Volume									
EL On Ramp Volume									
EL Off Ramp Volume									
Calculate Flow Rate in General Purpose Lanes (GP)									
GP Volume (vph)	6,190	6,190	4,960	5,990	5,990	4,700	5,610	3,870	4,190
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	3	3	3	4	3	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	6,594	6,594	5,284	6,381	6,381	5,007	5,976	4,123	4,463
GP Flow (pcphpl)	2,198	2,198	1,761	2,127	2,127	1,669	1,494	1,374	1,488
Calculate Speed in General Purpose Lanes									
Lane Width (ft)									
Shoulder Width									
TRD									
f_{LW}									
f_{LC}									
Calculated FFS									
Measured FFS									
FFS Curve	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes									
v/c ratio	0.94	0.94	0.75	0.91	0.91	0.71	0.64	0.58	0.63
Speed (mph)	56.0	56.0	63.1	57.5	57.5	64.0	64.9	65.0	64.9
Density (pcphpl)	39.3	39.3	27.9	37.0	37.0	26.1	23.0	21.1	22.9
LOS	E	E	D	E	E	D	C	C	C
Calculate Operations for Entering GP Lanes									
GP_{IN} Vol (pcph)		6,594		5,286	6,381		5,004		4,123
GP_{IN} Cap (pcph)		7,050		7,050	7,050		7,050		7,050
GP_{IN} v/c ratio		0.94		0.75	0.91		0.71		0.58
Calculate Operations for Exiting GP Lanes									
GP_{OUT} Vol (pcph)		5,326		6,381	5,003		4,117		4,463
GP_{OUT} Cap (pcph)		7,050		7,050	7,050		7,050		7,050
GP_{OUT} v/c ratio		0.76		0.91	0.71		0.58		0.63

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP Plus Project Conditions
Timee Period: 2035 PM Peak Hour

Location	1	2	3	4	5	6	7	8	9



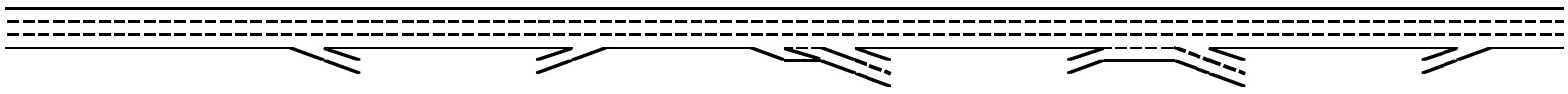
Key
<> Express Lane (HOV)
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Calculate Flow Rate in Express Lanes (EL)									
Calculate Speed in Express Lanes									
Calculate Operations in Express Lanes									
Calculate On Ramp Flow Rate									
On Volume (vph)				1,030			910		320
PHF				0.95			0.95		0.95
Total Lanes				1			1		1
Terrain				Level			Level		Level
Grade %				0.0%			0.0%		0.0%
Grade Length (mi)				0.00			0.00		0.00
Truck & Bus %				2.0%			3.0%		2.0%
RV %				0.0%			0.0%		0.0%
E_T				1.5			1.5		1.5
E_R				1.2			1.2		1.2
f_{HV}				0.990			0.985		0.990
f_P				1.00			1.00		1.00
On Flow (pcph)				1,095			972		340
On Flow (pcphpl)				1,095			972		340
Calculate On Ramp Roadway Operations									
On Ramp Type				Right			Right		Right
On Ramp Speed (mph)				45			25		25
On Ramp Cap (pcph)				2,100			1,900		1,900
On Ramp v/c ratio				0.52			0.51		0.18

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP Plus Project Conditions
Timee Period: 2035 PM Peak Hour

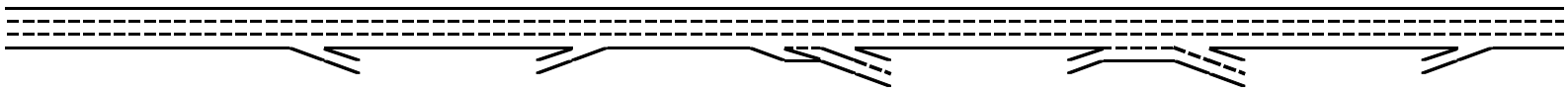
Location	1	2	3	4	5	6	7	8	9



Key
<> Express Lane (HOV)
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Calculate Off Ramp Flow Rate									
Off Volume (vph)		1,230			1,290		1,740		
PHF		0.98			0.95		0.95		
Total Lanes		1			2		2		
Terrain		Level			Level		Level		
Grade %		0.0%			0.0%		0.0%		
Grade Length (mi)		0.00			0.00		0.00		
Truck & Bus %		2.0%			3.0%		3.0%		
RV %		0.0%			0.0%		0.0%		
E_T		1.5			1.5		1.5		
E_R		1.2			1.2		1.2		
f_{HV}		0.990			0.985		0.985		
f_P		1.00			1.00		1.00		
Off Flow (pcph)		1,268			1,378		1,859		
Off Flow (pcphpl)		1,268			689		930		
Calculate Off Ramp Roadway Operations									
Off Ramp Type		Right			Right		Right		
Off Ramp Speed		45			45		45		
Off Ramp Cap (pcph)		2,100			4,200		4,200		
Off Ramp v/c ratio		0.60			0.33		0.44		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps									
Up Type		No		Off					No
Up Distance				2,960					
Up Flow (pcph)				1,268					
Down Type		On		No					No
Down Distance		2,960							
Down Flow (pcph)		1,095							
Calculate Merge Influence Area Operations									
Effective v_P (pcph)				5,286					4,123
Up Ramp L_{EQ}				1,437					
Down Ramp L_{EQ}									
P_{FM} (Eqn 13-3)				0.585					0.588
P_{FM} (Eqn 13-4)				0.681					
P_{FM} (Eqn 13-5)									
P_{FM}				0.585					0.588
v_{12} (pcph)				3,093					2,424
v_3 (pcph)				2,193					1,699
v_{34} (pcph)									
v_{12a} (pcph)				3,093					2,424
v_{R12a} (pcph)				4,188					2,765
Merge Speed Index				0.55					0.36
Merge Area Speed				52.3					56.6
Outer Lanes Volume				2,193					1,699
Outer Lanes Speed				58.9					60.7
Segment Speed				54.4					58.1
Merge v/c ratio				0.91					0.60
Merge Density				35.9					24.5
Merge LOS				E					C

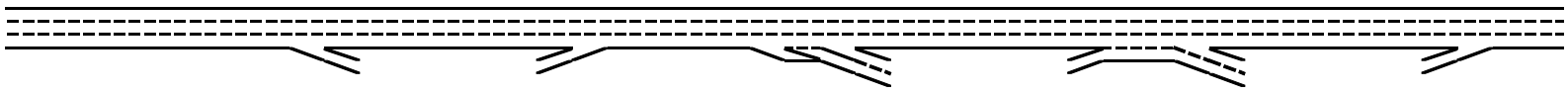
Location	1	2	3	4	5	6	7	8	9



Key
<> Express Lane (HOV)
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Calculate Diverge Influence Area Operations									
Effective v_P (pcph)		6,594			6,381				
Up Ramp L_{EQ}									
Down Ramp L_{EQ}		2,324							
P_{FD} (Eqn 13-9)		0.537			0.537				
P_{FD} (Eqn 13-10)									
P_{FD} (Eqn 13-11)									
P_{FD}		0.537			0.450				
v_{12} (pcph)		4,127			3,629				
v_3 (pcph)		2,467			2,751				
v_{34} (pcph)									
v_{12a} (pcph)		4,127			3,681				
Diverge Speed Index		0.41			0.42				
Diverge Area Speed		55.5			55.3				
Outer Lanes Volume		2,467			2,700				
Outer Lanes Speed		65.6			64.7				
Segment Speed		58.9			58.9				
Diverge v/c ratio		0.94			0.84				
Diverge Density		38.7			22.4				
Diverge LOS		E			C				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments									
On to Off Volume (vph)							50		
PHF							0.95		
Terrain							Level		
Grade %							0.0%		
Grade Length (mi)							0.00		
Truck & Bus %							3.0%		
RV %							0.0%		
E_T							1.5		
E_R							1.2		
f_{HV}							0.985		
f_P							1.00		
On to Off Flow (pcph)							53		
Calculate On Ramp to Mainline Flow Rate for Weave Segments									
On to ML Volume (vph)							860		
PHF							0.95		
Terrain							Level		
Grade %							0.0%		
Grade Length (mi)							0.00		
Truck & Bus %							3.0%		
RV %							0.0%		
E_T							1.5		
E_R							1.2		
f_{HV}							0.985		
f_P							1.00		
On to ML Flow (pcph)							919		

Location	1	2	3	4	5	6	7	8	9



Key

<> Express Lane (HOV)

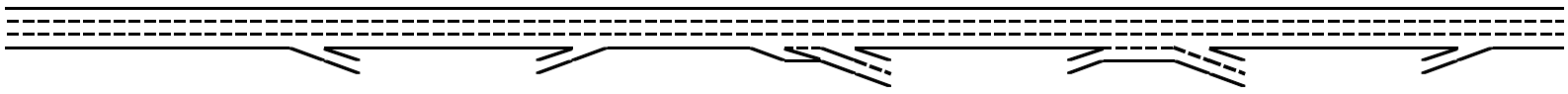
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Calculate Mainline to Off Ramp Flow Rate for Weave Segments									
ML to Off Volume (vph)							1,690		
PHF							0.95		
Terrain							Level		
Grade %							0.0%		
Grade Length (mi)							0.00		
Truck & Bus %							3.0%		
RV %							0.0%		
E_T							1.5		
E_R							1.2		
f_{HV}							0.985		
f_P							1.00		
ML to Off Flow (pcph)							1,806		
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments									
GP to GP Volume (vph)							3,010		
PHF							0.95		
Terrain							Level		
Grade %							0.0%		
Grade Length (mi)							0.00		
Truck & Bus %							3.0%		
RV %							0.0%		
E_T							1.5		
E_R							1.2		
f_{HV}							0.985		
f_P							1.00		
GP to GP Flow (pcph)							3,216		

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 CIP Plus Project Conditions
Timee Period: 2035 PM Peak Hour

Location	1	2	3	4	5	6	7	8	9



Key
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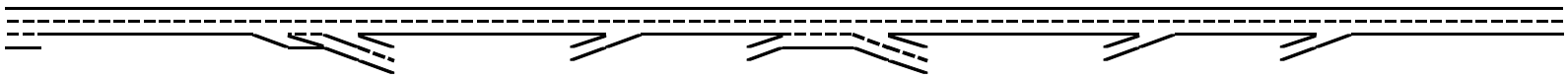
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop Ramp
Calculate Weave Segment Operations									
Weave Type							One-sided		
Weave Length							2,370		
Segment Lanes							4		
Weave Lanes							2		
Weave Flow (pcph)							2,724		
Non-Weave Flow							3,269		
Segment Flow							5,994		
Max Weave Length							7,300		
Length Check							OK		
Ideal Weave Capacity							1,973		
f_{HV}							0.985		
f_P							0.998		
Capacity Condition 1							7,757		
Capacity Condition 2							5,190		
Weave v/c ratio							1.14		
Interchange Density									
Lane Changes On to ML									
Lane Changes ML to Off									
Lane Changes On to Off									
Min Lane Change Rate									
Weave LC Rate									
Non-Weave LC Rate 1									
Non-Weave LC Rate 2									
Non-Weave LC Rate 3									
Segment LC Rate									
Weave Intensity Factor									
Weave Speed									
Non-Weave Speed									
Segment Speed									
Weave Density									
Weave LOS									
Summarize Segment Operations									
Segment v/c ratio	0.94	0.94	0.75	0.91	0.84	0.71	1.14	0.58	0.60
Segment Density	39.3	38.7	27.9	35.9	22.4	26.1	-	21.1	24.5
Segment LOS	E	E	D	E	C	D	F	C	C
Over Capacity							Weave		

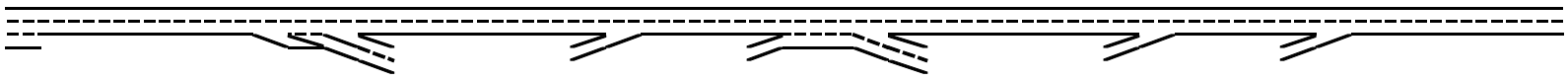
Location		10	11	12	13	14	15	16	17	18



Key
<> Express Lane (HOV)
No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Define Freeway Segment										
Type		Basic	Diverge	Basic	Merge	Weave	Basic	Merge	Merge	Basic
Length (ft)		3,300	1,500	1,800	1,000	2,770	1,420	1,150	1,500	1,020
Accel Length					620			340	1,260	
Decel Length			1,500							
Mainline Volume		4,190	4,190	3,180	3,180	3,830	3,950	3,950	4,570	4,810
On Ramp Volume					650	440		620	240	
Off Ramp Volume			1,010			320				
Express Lane Volume										
EL On Ramp Volume										
EL Off Ramp Volume										
Calculate Flow Rate in General Purpose Lanes										
GP Volume (vph)		4,190	4,190	3,180	3,830	4,270	3,950	4,570	4,810	4,810
PHF		0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes		2	2	2	2	3	2	2	2	2
Terrain		Level	Level	Level	Level	Level	Level	Level	Level	Level
Grade %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %		2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
RV %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}		0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
f_P		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)		4,463	4,463	3,388	4,080	4,549	4,208	4,868	5,124	5,124
GP Flow (pcphpl)		2,232	2,232	1,694	2,040	1,516	2,104	2,434	2,562	2,562
Calculate Speed in General Purpose Lanes										
Lane Width (ft)										
Shoulder Width										
TRD										
f_{LW}										
f_{LC}										
Calculated FFS										
Measured FFS										
FFS Curve		65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes										
v/c ratio		0.95	0.95	0.72	0.87	0.65	0.90	1.04	1.09	1.09
Speed (mph)		55.2	55.2	63.8	59.2	64.8	58.0	-	-	-
Density (pcphpl)		40.4	40.4	26.6	34.5	23.4	36.3	-	-	-
LOS		E	E	D	D	C	E	F	F	F
Calculate Operations for Entering GP Lanes										
GP_{IN} Vol (pcph)			4,463		3,389	4,081		4,209	4,869	
GP_{IN} Cap (pcph)			4,700		4,700	4,700		4,700	4,700	
GP_{IN} v/c ratio			0.95		0.72	0.87		0.90	1.04	
Calculate Operations for Exiting GP Lanes										
GP_{OUT} Vol (pcph)			3,390		4,080	4,208		4,868	5,124	
GP_{OUT} Cap (pcph)			4,700		4,700	4,700		4,700	4,700	
GP_{OUT} v/c ratio			0.72		0.87	0.90		1.04	1.09	

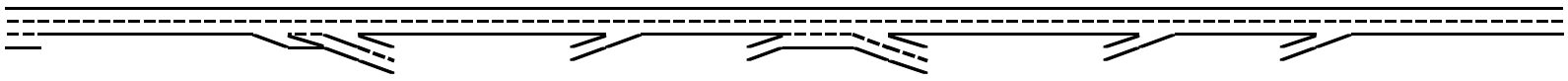
Location		10	11	12	13	14	15	16	17	18



Key
<> Express Lane (HOV)
No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Calculate Flow Rate in Express Lanes (EL)										
Calculate Speed in Express Lanes										
Calculate Operations in Express Lanes										
Calculate On Ramp Flow Rate										
On Volume (vph)					650	440		620	240	
PHF					0.95	0.95		0.95	0.95	
Total Lanes					1	1		1	1	
Terrain					Level	Level		Level	Level	
Grade %					0.0%	0.0%		0.0%	0.0%	
Grade Length (mi)					0.00	0.00		0.00	0.00	
Truck & Bus %					2.0%	2.0%		2.0%	2.0%	
RV %					0.0%	0.0%		0.0%	0.0%	
E_T					1.5	1.5		1.5	1.5	
E_R					1.2	1.2		1.2	1.2	
f_{HV}					0.990	0.990		0.990	0.990	
f_P					1.00	1.00		1.00	1.00	
On Flow (pcph)					691	468		659	255	
On Flow (pcphpl)					691	468		659	255	
Calculate On Ramp Roadway Operations										
On Ramp Type					Right	Right		Right	Right	
On Ramp Speed (mph)					25	45		25	45	
On Ramp Cap (pcph)					1,900	2,100		1,900	2,100	
On Ramp v/c ratio					0.36	0.22		0.35	0.12	

Location		10	11	12	13	14	15	16	17	18



Key
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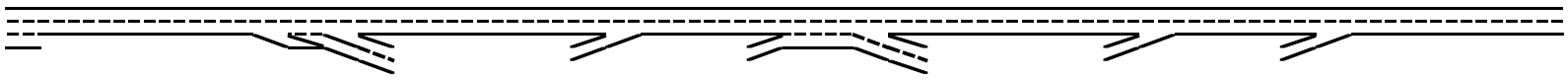
No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Calculate Off Ramp Flow Rate										
Off Volume (vph)			1,010			320				
PHF			0.95			0.95				
Total Lanes			2			2				
Terrain			Level			Level				
Grade %			0.0%			0.0%				
Grade Length (mi)			0.00			0.00				
Truck & Bus %			2.0%			2.0%				
RV %			0.0%			0.0%				
E_T			1.5			1.5				
E_R			1.2			1.2				
f_{HV}			0.990			0.990				
f_P			1.00			1.00				
Off Flow (pcph)			1,074			340				
Off Flow (pcphpl)			537			170				
Calculate Off Ramp Roadway Operations										
Off Ramp Type			Right							
Off Ramp Speed			45							
Off Ramp Cap (pcph)			4,200							
Off Ramp v/c ratio			0.26							
Determine Adjacent Ramp for Three-Lane Main										
Up Type										
Up Distance										
Up Flow (pcph)										
Down Type										
Down Distance										
Down Flow (pcph)										
Calculate Merge Influence Area Operations										
Effective v_P (pcph)					3,389			4,209	4,869	
Up Ramp L_{EQ}										
Down Ramp L_{EQ}										
P_{FM} (Eqn 13-3)					0.595			0.587	0.613	
P_{FM} (Eqn 13-4)										
P_{FM} (Eqn 13-5)										
P_{FM}					1.000			1.000	1.000	
v_{12} (pcph)					3,389			4,209	4,869	
v_3 (pcph)										
v_{34} (pcph)										
v_{12a} (pcph)					3,389			4,209	4,869	
v_{R12a} (pcph)					4,080			4,868	5,124	
Merge Speed Index					0.52			-	-	
Merge Area Speed					53.0			-	-	
Outer Lanes Volume										
Outer Lanes Speed										
Segment Speed					53.0					
Merge v/c ratio					0.89			1.06	1.11	
Merge Density					33.1			-	-	
Merge LOS					D			F	F	

Location		10	11	12	13	14	15	16	17	18



Key
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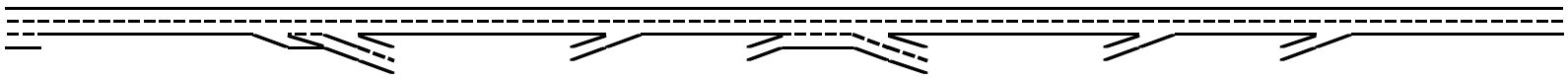
No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Calculate Diverge Influence Area Operations										
Effective v_P (pcph)			4,463							
Up Ramp L_{EQ}										
Down Ramp L_{EQ}										
P_{FD} (Eqn 13-9)			0.599							
P_{FD} (Eqn 13-10)										
P_{FD} (Eqn 13-11)										
P_{FD}			1.000							
v_{12} (pcph)			4,463							
v_3 (pcph)										
v_{34} (pcph)										
v_{12a} (pcph)			4,463							
Diverge Speed Index			0.39							
Diverge Area Speed			55.9							
Outer Lanes Volume										
Outer Lanes Speed										
Segment Speed			55.9							
Diverge v/c ratio			1.01							
Diverge Density			29.1							
Diverge LOS			F							
Calculate On Ramp to Off Ramp Flow Rate for V										
On to Off Volume (vph)						110				
PHF						0.95				
Terrain						Level				
Grade %						0.0%				
Grade Length (mi)						0.00				
Truck & Bus %						3.0%				
RV %						0.0%				
E_T						1.5				
E_R						1.2				
f_{HV}						0.985				
f_P						1.00				
On to Off Flow (pcph)						118				
Calculate On Ramp to Mainline Flow Rate for W										
On to ML Volume (vph)						330				
PHF						0.95				
Terrain						Level				
Grade %						0.0%				
Grade Length (mi)						0.00				
Truck & Bus %						3.0%				
RV %						0.0%				
E_T						1.5				
E_R						1.2				
f_{HV}						0.985				
f_P						1.00				
On to ML Flow (pcph)						353				

Location		10	11	12	13	14	15	16	17	18



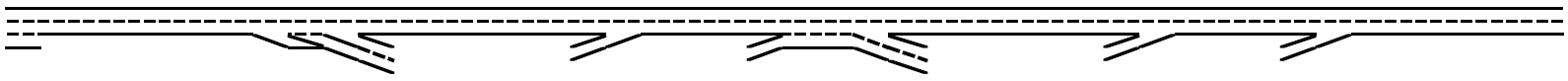
Key

<> Express Lane (HOV)

No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Calculate Mainline to Off Ramp Flow Rate for W										
ML to Off Volume (vph)						210				
PHF						0.95				
Terrain						Level				
Grade %						0.0%				
Grade Length (mi)						0.00				
Truck & Bus %						3.0%				
RV %						0.0%				
E_T						1.5				
E_R						1.2				
f_{HV}						0.985				
f_P						1.00				
ML to Off Flow (pcph)						224				
Calculate General Purpose Lanes to General Pu										
GP to GP Volume (vph)						3,620				
PHF						0.95				
Terrain						Level				
Grade %						0.0%				
Grade Length (mi)						0.00				
Truck & Bus %						3.0%				
RV %						0.0%				
E_T						1.5				
E_R						1.2				
f_{HV}						0.985				
f_P						1.00				
GP to GP Flow (pcph)						3,868				

Location		10	11	12	13	14	15	16	17	18



Key
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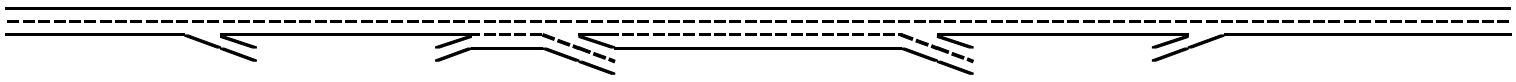
No Trucks

Name	On-	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Twelve Bri
Calculate Weave Segment Operations										
Weave Type						One-sided				
Weave Length						1,770				
Segment Lanes						3				
Weave Lanes						2				
Weave Flow (pcph)						577				
Non-Weave Flow						3,985				
Segment Flow						4,562				
Max Weave Length						3,798				
Length Check						OK				
Ideal Weave Capacity						2,195				
f_{HV}						0.985				
f_P						0.999				
Capacity Condition 1						6,480				
Capacity Condition 2						18,676				
Weave v/c ratio						0.69				
Interchange Density										
Lane Changes On to ML										
Lane Changes ML to Off										
Lane Changes On to Off										
Min Lane Change Rate										
Weave LC Rate										
Non-Weave LC Rate 1										
Non-Weave LC Rate 2										
Non-Weave LC Rate 3										
Segment LC Rate										
Weave Intensity Factor										
Weave Speed										
Non-Weave Speed										
Segment Speed										
Weave Density										
Weave LOS										
Summarize Segment Operations										
Segment v/c ratio		0.95	1.01	0.72	0.89	0.69	0.90	1.06	1.11	1.09
Segment Density		40.4	-	26.6	33.1		36.3	-	-	-
Segment LOS		E	F	D	D		E	F	F	F
Over Capacity			Diverge					Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes In GP Lanes Out GP Lanes Merge	Segment GP

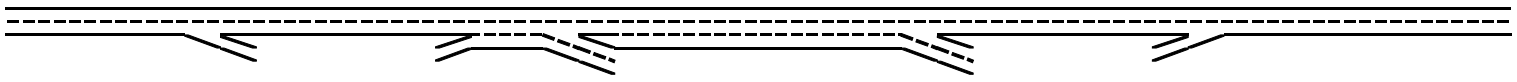
Location		19	20	21	22	23	24	25	26



Key
<> Express Lane (HOV)
No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segment									
Type		Diverge	Basic	Weave	Basic	Basic	Basic	Merge	Basic
Length (ft)		1,500	2,590	2,680	900	1,500	2,870	1,500	8,600
Accel Length								600	
Decel Length		175							
Mainline Volume		4,810	4,440	4,440	4,640	4,640	2,530	2,530	3,100
On Ramp Volume				1,040				570	
Off Ramp Volume		370		840		2,110			
Express Lane Volume									
EL On Ramp Volume									
EL Off Ramp Volume									
Calculate Flow Rate in General Purpose Lanes									
GP Volume (vph)		4,810	4,440	5,480	4,640	4,640	2,530	3,100	3,100
PHF		0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes		2	2	3	3	3	2	2	2
Terrain		Level	Level	Level	Level	Level	Level	Level	Level
Grade %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %		2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
RV %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}		0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
f_P		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)		5,124	4,730	5,838	4,943	4,943	2,695	3,302	3,302
GP Flow (pcphpl)		2,562	2,365	1,946	1,648	1,648	1,348	1,651	1,651
Calculate Speed in General Purpose Lanes									
Lane Width (ft)									
Shoulder Width									
TRD									
f_{LW}									
f_{LC}									
Calculated FFS									
Measured FFS									
FFS Curve		65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes									
v/c ratio		1.09	1.01	0.83	0.70	0.70	0.57	0.70	0.70
Speed (mph)		-	-	60.8	64.1	64.1	65.0	64.1	64.1
Density (pcphpl)		-	-	32.0	25.7	25.7	20.7	25.8	25.8
LOS		F	F	D	C	C	C	C	C
Calculate Operations for Entering GP Lanes									
GP_{IN} Vol (pcph)		5,124		4,726				2,696	
GP_{IN} Cap (pcph)		4,700		4,700				4,700	
GP_{IN} v/c ratio		1.09		1.01				0.57	
Calculate Operations for Exiting GP Lanes									
GP_{OUT} Vol (pcph)		4,731		4,945		2,700		3,302	
GP_{OUT} Cap (pcph)		4,700		4,700		4,700		4,700	
GP_{OUT} v/c ratio		1.01		1.05		0.57		0.70	

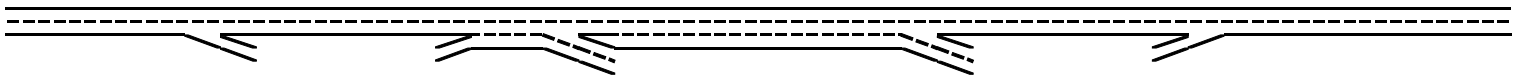
Location		19	20	21	22	23	24	25	26



Key
<> Express Lane (HOV)
No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in Express Lanes (EL)									
Calculate Speed in Express Lanes									
Calculate Operations in Express Lanes									
Calculate On Ramp Flow Rate									
On Volume (vph)				1,040				570	
PHF				0.95				0.95	
Total Lanes				1				1	
Terrain				Level				Level	
Grade %				0.0%				0.0%	
Grade Length (mi)				0.00				0.00	
Truck & Bus %				3.0%				2.0%	
RV %				0.0%				0.0%	
E_T				1.5				1.5	
E_R				1.2				1.2	
f_{HV}				0.985				0.990	
f_P				1.00				1.00	
On Flow (pcph)				1,111				606	
On Flow (pcphpl)				1,111				606	
Calculate On Ramp Roadway Operations									
On Ramp Type				Right				Right	
On Ramp Speed (mph)				45				45	
On Ramp Cap (pcph)				2,100				2,100	
On Ramp v/c ratio				0.53				0.29	

Location		19	20	21	22	23	24	25	26



Key
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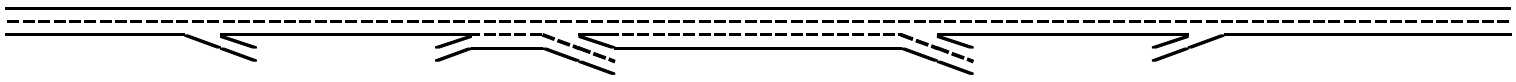
No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flow Rate									
Off Volume (vph)		370		840		2,110			
PHF		0.95		0.95		0.95			
Total Lanes		1		2		2			
Terrain		Level		Level		Level			
Grade %		0.0%		0.0%		0.0%			
Grade Length (mi)		0.00		0.00		0.00			
Truck & Bus %		2.0%		2.0%		2.0%			
RV %		0.0%		0.0%		0.0%			
E_T		1.5		1.5		1.5			
E_R		1.2		1.2		1.2			
f_{HV}		0.990		0.990		0.990			
f_P		1.00		1.00		1.00			
Off Flow (pcph)		393		893		2,243			
Off Flow (pcphpl)		393		447		1,122			
Calculate Off Ramp Roadway Operations									
Off Ramp Type		Right		Right		Right			
Off Ramp Speed		45		45		45			
Off Ramp Cap (pcph)		2,100		4,200		4,200			
Off Ramp v/c ratio		0.19		0.21		0.53			
Determine Adjacent Ramp for Three-Lane Main									
Up Type									
Up Distance									
Up Flow (pcph)									
Down Type									
Down Distance									
Down Flow (pcph)									
Calculate Merge Influence Area Operations									
Effective v_P (pcph)								2,696	
Up Ramp L_{EQ}									
Down Ramp L_{EQ}									
P_{FM} (Eqn 13-3)								0.594	
P_{FM} (Eqn 13-4)									
P_{FM} (Eqn 13-5)									
P_{FM}								1.000	
v_{12} (pcph)								2,696	
v_3 (pcph)									
v_{34} (pcph)									
v_{12a} (pcph)								2,696	
v_{R12a} (pcph)								3,302	
Merge Speed Index								0.37	
Merge Area Speed								56.4	
Outer Lanes Volume									
Outer Lanes Speed									
Segment Speed								56.4	
Merge v/c ratio								0.72	
Merge Density								27.2	
Merge LOS								C	

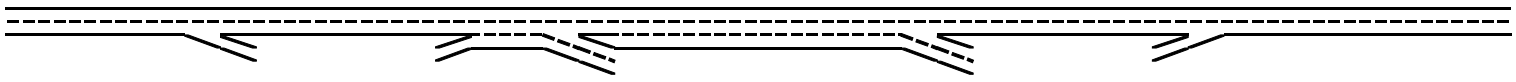
Location		19	20	21	22	23	24	25	26



Key
<> Express Lane (HOV)
No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influence Area Operations									
Effective v_P (pcph)		5,124							
Up Ramp L_{EQ}									
Down Ramp L_{EQ}									
P_{FD} (Eqn 13-9)		0.614							
P_{FD} (Eqn 13-10)									
P_{FD} (Eqn 13-11)									
P_{FD}		1.000							
v_{12} (pcph)		5,124							
v_3 (pcph)									
v_{34} (pcph)									
v_{12a} (pcph)		5,124							
Diverge Speed Index		-							
Diverge Area Speed		-							
Outer Lanes Volume									
Outer Lanes Speed									
Segment Speed									
Diverge v/c ratio		1.16							
Diverge Density		-							
Diverge LOS		F							
Calculate On Ramp to Off Ramp Flow Rate for W									
On to Off Volume (vph)				104					
PHF				0.8					
Terrain				Level					
Grade %				0.0%					
Grade Length (mi)				0.00					
Truck & Bus %				7.0%					
RV %				0.0%					
E_T				1.5					
E_R				1.2					
f_{HV}				0.966					
f_P				1.00					
On to Off Flow (pcph)				135					
Calculate On Ramp to Mainline Flow Rate for W									
On to ML Volume (vph)				936					
PHF				0.8					
Terrain				Level					
Grade %				0.0%					
Grade Length (mi)				0.00					
Truck & Bus %				3.0%					
RV %				0.0%					
E_T				1.5					
E_R				1.2					
f_{HV}				0.985					
f_P				1.00					
On to ML Flow (pcph)				1,188					

Location		19	20	21	22	23	24	25	26



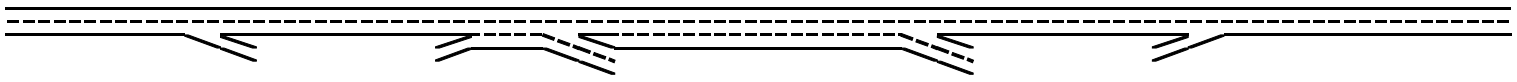
Key

<> Express Lane (HOV)

No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to Off Ramp Flow Rate for W									
ML to Off Volume (vph)				736					
PHF				0.83					
Terrain				Level					
Grade %				0.0%					
Grade Length (mi)				0.00					
Truck & Bus %				3.0%					
RV %				0.0%					
E_T				1.5					
E_R				1.2					
f_{HV}				0.985					
f_P				1.00					
ML to Off Flow (pcph)				900					
Calculate General Purpose Lanes to General Pu									
GP to GP Volume (vph)				3,704					
PHF				0.825					
Terrain				Level					
Grade %				0.0%					
Grade Length (mi)				0.00					
Truck & Bus %				3.0%					
RV %				0.0%					
E_T				1.5					
E_R				1.2					
f_{HV}				0.985					
f_P				1.00					
GP to GP Flow (pcph)				4,557					

Location		19	20	21	22	23	24	25	26



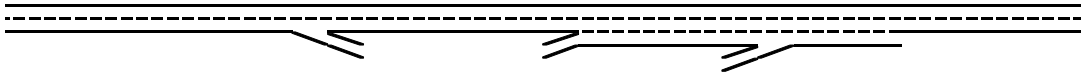
Key

<> Express Lane (HOV)

No Trucks

Name	Pkwy to dges	Twelve Bridges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segment Operations									
Weave Type				One-sided					
Weave Length				1,680					
Segment Lanes				3					
Weave Lanes				3					
Weave Flow (pcph)				2,088					
Non-Weave Flow				4,692					
Segment Flow				6,779					
Max Weave Length				4,103					
Length Check				OK					
Ideal Weave Capacity				2,165					
f_{HV}				0.985					
f_P				0.997					
Capacity Condition 1				6,379					
Capacity Condition 2				11,165					
Weave v/c ratio				1.04					
Interchange Density				0.666666667					
Lane Changes On to ML									
Lane Changes ML to Off									
Lane Changes On to Off									
Min Lane Change Rate				0					
Weave LC Rate				564					
Non-Weave LC Rate 1				1,299					
Non-Weave LC Rate 2				2,735					
Non-Weave LC Rate 3				-412					
Segment LC Rate				1,863					
Weave Intensity Factor				0.245					
Weave Speed				55.2					
Non-Weave Speed				54.2					
Segment Speed				54.5					
Weave Density				-					
Weave LOS				F					
Summarize Segment Operations									
Segment v/c ratio		1.16	1.01	1.04	0.70	0.70	0.57	0.72	0.70
Segment Density		-	-	-	25.7	25.7	20.7	27.2	25.8
Segment LOS		F	F	F	C	C	C	C	C
Over Capacity	Lanes	Segment GP Lanes In GP Lanes Out GP Lanes Diverge	Segment GP Lanes	In GP Lanes Out GP Lanes Weave					

Location	1	2	3	4	5	6



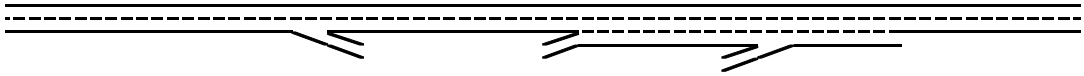
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Define Freeway Segment						
Type	Basic	Diverge	Basic	Basic	Merge	Basic
Length (ft)	8,330	1,500	1,800	1,000	1,500	870
Accel Length					720	
Decel Length		150				
Mainline Volume	2,830	2,830	2,370	2,370	3,710	4,700
On Ramp Volume				1,340	990	
Off Ramp Volume		460				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	2,830	2,830	2,370	3,710	4,700	4,700
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	3	3	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,009	3,009	2,520	3,944	4,997	4,997
GP Flow (pcphpl)	1,504	1,504	1,260	1,315	1,666	2,498
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.64	0.64	0.54	0.56	0.71	1.06
Speed (mph)	64.8	64.8	65.0	65.0	64.0	-
Density (pcphpl)	23.2	23.2	19.4	20.2	26.0	-
LOS	C	C	C	C	D	F
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)		3,009		2,520	3,944	
GP_{IN} Cap (pcph)		4,700		4,700	7,050	
GP_{IN} v/c ratio		0.64		0.54	0.56	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)		2,517			4,997	
GP_{OUT} Cap (pcph)		4,700			7,050	
GP_{OUT} v/c ratio		0.54			0.71	

Location	1	2	3	4	5	6



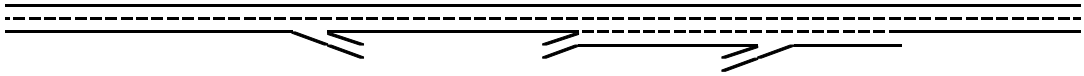
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)				1,340	990	
PHF				0.95	0.95	
Total Lanes				1	1	
Terrain				Level	Level	
Grade %				0.0%	0.0%	
Grade Length (mi)				0.00	0.00	
Truck & Bus %				2.0%	2.0%	
RV %				0.0%	0.0%	
E_T				1.5	1.5	
E_R				1.2	1.2	
f_{HV}				0.990	0.990	
f_P				1.00	1.00	
On Flow (pcph)				1,425	1,053	
On Flow (pcphpl)				1,425	1,053	
Calculate On Ramp Roadway Operations						
On Ramp Type				Right	Right	
On Ramp Speed (mph)				25	45	
On Ramp Cap (pcph)				1,900	2,100	
On Ramp v/c ratio				0.75	0.50	

Location	1	2	3	4	5	6



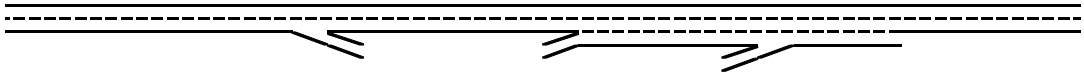
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Off Ramp Flow Rate						
Off Volume (vph)		460				
PHF		0.95				
Total Lanes		1				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
Off Flow (pcph)		491				
Off Flow (pcphpl)		491				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		2,100				
Off Ramp v/c ratio		0.23				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type					On	
Up Distance					1,000	
Up Flow (pcph)					1,425	
Down Type					No	
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)					3,944	
Up Ramp L_{EQ}					1,340	
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)					0.598	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}					0.598	
v_{12} (pcph)					2,357	
v_3 (pcph)					1,587	
v_{34} (pcph)						
v_{12a} (pcph)					2,357	
v_{R12a} (pcph)					3,410	
Merge Speed Index					0.37	
Merge Area Speed					56.4	
Outer Lanes Volume					1,587	
Outer Lanes Speed					61.1	
Segment Speed					57.8	
Merge v/c ratio					0.74	
Merge Density					27.1	
Merge LOS					C	

Location	1	2	3	4	5	6



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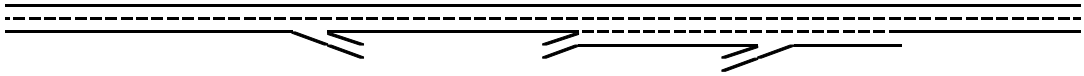
<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)		3,009				
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)		0.662				
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}		1.000				
v_{12} (pcph)		3,009				
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)		3,009				
Diverge Speed Index		0.34				
Diverge Area Speed		57.1				
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed		57.1				
Diverge v/c ratio		0.68				
Diverge Density		28.8				
Diverge LOS		D				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	1	2	3	4	5	6



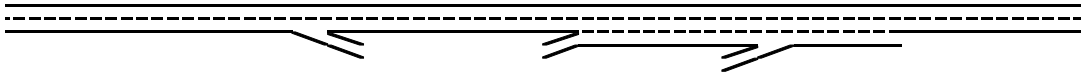
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Location	1	2	3	4	5	6



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<> Express Lane (HOV)

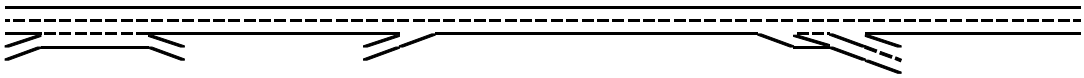
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.64	0.68	0.54	0.56	0.74	1.06
Segment Density	23.2	28.8	19.4	20.2	27.1	-
Segment LOS	C	D	C	C	C	F
Over Capacity						Segment GP Lanes

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 CIP Plus Project
Time Period: 2035 AM Peak Hour

Location	7	8	9	10	11	12



Key
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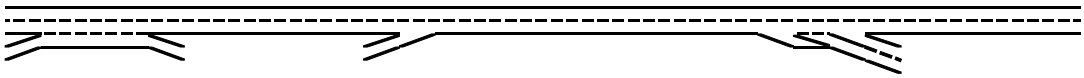
No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Basic	Diverge	Basic
Length (ft)	3,050	1,120	1,500	2,210	1,500	1,830
Accel Length			450			
Decel Length					1,500	
Mainline Volume	4,700	4,160	4,160	4,550	4,550	3,840
On Ramp Volume	810		390			
Off Ramp Volume	1,350				710	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	5,510	4,160	4,550	4,550	4,550	3,840
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,858	4,423	4,837	4,837	4,837	4,083
GP Flow (pcphpl)	1,953	2,211	2,419	2,419	2,419	2,041
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.83	0.94	1.03	1.03	1.03	0.87
Speed (mph)	60.7	55.7	-	-	-	59.2
Density (pcphpl)	32.2	39.7	-	-	-	34.5
LOS	D	E	F	F	F	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,997		4,423		4,837	
GP_{IN} Cap (pcph)	4,700		4,700		4,700	
GP_{IN} v/c ratio	1.06		0.94		1.03	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	4,409		4,837		4,083	
GP_{OUT} Cap (pcph)	4,700		4,700		4,700	
GP_{OUT} v/c ratio	0.94		1.03		0.87	

Location	7	8	9	10	11	12



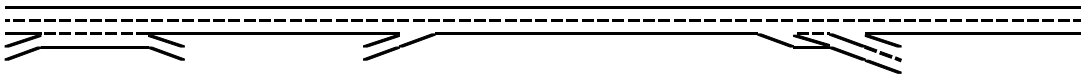
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5			
E_R	1.2	1.2	1.2			
f_{HV}	0.990	0.990	0.990			
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	810		390			
PHF	0.95		0.95			
Total Lanes	1		1			
Terrain	Level		Level			
Grade %	0.0%		0.0%			
Grade Length (mi)	0.00		0.00			
Truck & Bus %	2.0%		2.0%			
RV %	0.0%		0.0%			
E_T	1.5		1.5			
E_R	1.2		1.2			
f_{HV}	0.990		0.990			
f_P	1.00		1.00			
On Flow (pcph)	861		415			
On Flow (pcphpl)	861		415			
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right			
On Ramp Speed (mph)	45		25			
On Ramp Cap (pcph)	2,100		1,900			
On Ramp v/c ratio	0.41		0.22			

Location	7	8	9	10	11	12



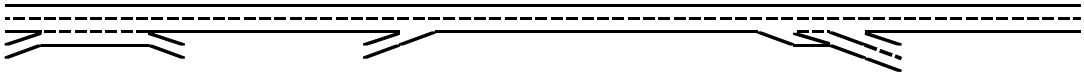
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	1,350				710	
PHF	0.95				0.95	
Total Lanes	1				2	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	4.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.980				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	1,449				755	
Off Flow (pcphpl)	1,449				377	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				4,200	
Off Ramp v/c ratio	0.69				0.18	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			4,423			
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.590			
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000			
v_{12} (pcph)			4,423			
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			4,423			
v_{R12a} (pcph)			4,837			
Merge Speed Index			-			
Merge Area Speed			-			
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Merge v/c ratio			1.05			
Merge Density			-			
Merge LOS			F			

Location	7	8	9	10	11	12



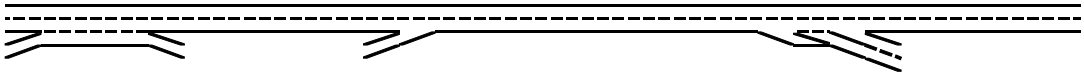
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					4,837	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.604	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					4,837	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					4,837	
Diverge Speed Index					-	
Diverge Area Speed					-	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio					1.10	
Diverge Density					-	
Diverge LOS					F	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	81					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	87					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	729					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	779					

Location	7	8	9	10	11	12



Key

<> Express Lane (HOV)

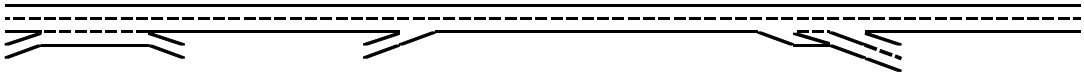
No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	1,269					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
ML to Off Flow (pcph)	1,508					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	3,431					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
GP to GP Flow (pcph)	4,077					

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 CIP Plus Project
Time Period: 2035 AM Peak Hour

Location	7	8	9	10	11	12



Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,050					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	2,287					
Non-Weave Flow	4,163					
Segment Flow	6,450					
Max Weave Length	6,176					
Length Check	OK					
Ideal Weave Capacity	2,034					
f_{HV}	0.989					
f_P	0.998					
Capacity Condition 1	6,028					
Capacity Condition 2	6,686					
Weave v/c ratio	1.06					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	1.06	0.94	1.05	1.03	1.10	0.87
Segment Density	-	39.7	-	-	-	34.5
Segment LOS	F	E	F	F	F	D
Over Capacity	In GP Lanes Weave		Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes	Segment GP Lanes In GP Lanes Diverge	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Define Freeway Segment						
Type	Merge	Weave	Basic	Merge	Merge	Basic
Length (ft)	690	3,344	1,280	1,310	1,500	770
Accel Length	400			500	1,450	
Decel Length						
Mainline Volume	3,840	4,320	3,560	3,560	4,100	4,460
On Ramp Volume	480	10		540	360	
Off Ramp Volume		770				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,320	4,330	3,560	4,100	4,460	4,460
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	3	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,593	4,603	3,785	4,359	4,742	4,742
GP Flow (pcphpl)	2,296	1,534	1,892	2,179	2,371	2,371
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.98	0.65	0.81	0.93	1.01	1.01
Speed (mph)	53.6	64.7	61.6	56.4	-	-
Density (pcphpl)	42.8	23.7	30.7	38.7	-	-
LOS	E	C	D	E	F	F
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,083	4,593		3,785	4,359	
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{IN} v/c ratio	0.87	0.98		0.81	0.93	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	4,593	3,785		4,359	4,742	
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{OUT} v/c ratio	0.98	0.81		0.93	1.01	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T		1.5	1.5	1.5	1.5	
E_R		1.2	1.2	1.2	1.2	
f_{HV}		0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	480	10		540	360	
PHF	0.95	0.95		0.95	0.95	
Total Lanes	1	1		1	1	
Terrain	Level	Level		Level	Level	
Grade %	0.0%	0.0%		0.0%	0.0%	
Grade Length (mi)	0.00	0.00		0.00	0.00	
Truck & Bus %	2.0%	3.0%		2.0%	2.0%	
RV %	0.0%	0.0%		0.0%	0.0%	
E_T	1.5	1.5		1.5	1.5	
E_R	1.2	1.2		1.2	1.2	
f_{HV}	0.990	0.985		0.990	0.990	
f_P	1.00	1.00		1.00	1.00	
On Flow (pcph)	510	11		574	383	
On Flow (pcphpl)	510	11		574	383	
Calculate On Ramp Roadway Operations						
On Ramp Type	Right	Right		Right	Right	
On Ramp Speed (mph)	25	45		25	45	
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100	
On Ramp v/c ratio	0.27	0.01		0.30	0.18	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)		770				
PHF		0.95				
Total Lanes		2				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		819				
Off Flow (pcphpl)		409				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		4,200				
Off Ramp v/c ratio		0.19				
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)	4,083			3,785	4,359	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)	0.589			0.592	0.618	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}	1.000			1.000	1.000	
v_{12} (pcph)	4,083			3,785	4,359	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)	4,083			3,785	4,359	
v_{R12a} (pcph)	4,593			4,359	4,742	
Merge Speed Index	0.69			0.60	-	
Merge Area Speed	49.2			51.2	-	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed	49.2			51.2		
Merge v/c ratio	1.00			0.95	1.03	
Merge Density	38.6			36.1	-	
Merge LOS	E			E	F	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)						
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)						
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}						
v_{12} (pcph)						
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)						
Diverge Speed Index						
Diverge Area Speed						
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio						
Diverge Density						
Diverge LOS						
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)		50				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to Off Flow (pcph)		53				
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)		-40				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to ML Flow (pcph)		-43				

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)		720				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
ML to Off Flow (pcph)		781				
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)		3,600				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
GP to GP Flow (pcph)		3,903				

Location	13	14	15	16	17	18

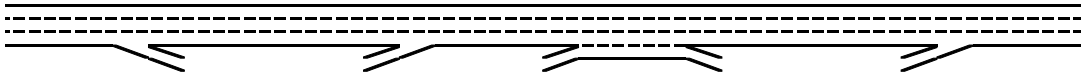
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Weave Segment Operations						
Weave Type		One-sided				
Weave Length		2,344				
Segment Lanes		3				
Weave Lanes		2				
Weave Flow (pcph)		738				
Non-Weave Flow		3,957				
Segment Flow		4,694				
Max Weave Length		4,103				
Length Check		OK				
Ideal Weave Capacity		2,215				
f_{HV}		0.971				
f_P		1.000				
Capacity Condition 1		6,454				
Capacity Condition 2		14,827				
Weave v/c ratio		0.71				
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	1.00	0.71	0.81	0.95	1.03	1.01
Segment Density	38.6		30.7	36.1	-	-
Segment LOS	E		D	E	F	F
Over Capacity					Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes

Location	19	20	21	22	23	24



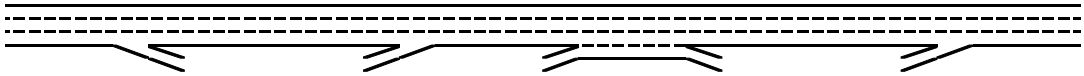
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Define Freeway Segment						
Type	Diverge	Basic	Merge	Weave	Basic	Merge
Length (ft)	1,500	1,680	1,000	3,140	1,610	1,180
Accel Length			380			550
Decel Length	200					
Mainline Volume	4,460	3,690	3,690	4,090	4,390	4,390
On Ramp Volume			400	1,410		550
Off Ramp Volume	770			1,110		
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,460	3,690	4,090	5,500	4,390	4,940
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	4	3	3
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	4.2%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.979	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,742	3,923	4,348	5,911	4,667	5,252
GP Flow (pcphpl)	1,581	1,308	1,449	1,478	1,556	1,751
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.67	0.56	0.62	0.63	0.66	0.74
Speed (mph)	64.5	65.0	65.0	64.9	64.7	63.3
Density (pcphpl)	24.5	20.1	22.3	22.8	24.1	27.7
LOS	C	C	C	C	C	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,742		3,923	4,393		4,667
GP_{IN} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{IN} v/c ratio	0.67		0.56	0.62		0.66
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,914		4,348	4,731		5,252
GP_{OUT} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{OUT} v/c ratio	0.56		0.62	0.67		0.74

Location	19	20	21	22	23	24



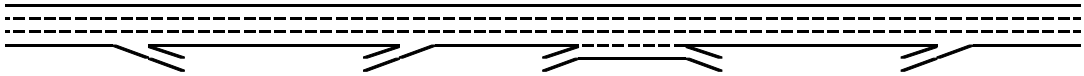
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)			400	1,410		550
PHF			0.95	0.95		0.95
Total Lanes			1	1		1
Terrain			Level	Level		Level
Grade %			0.0%	0.0%		0.0%
Grade Length (mi)			0.00	0.00		0.00
Truck & Bus %			2.0%	4.6%		2.0%
RV %			0.0%	0.0%		0.0%
E_T			1.5	1.5		1.5
E_R			1.2	1.2		1.2
f_{HV}			0.990	0.978		0.990
f_P			1.00	1.00		1.00
On Flow (pcph)			425	1,518		585
On Flow (pcphpl)			425	1,518		585
Calculate On Ramp Roadway Operations						
On Ramp Type			Right	Right		Right
On Ramp Speed (mph)			25	45		25
On Ramp Cap (pcph)			1,900	2,100		1,900
On Ramp v/c ratio			0.22	0.72		0.31

Location	19	20	21	22	23	24



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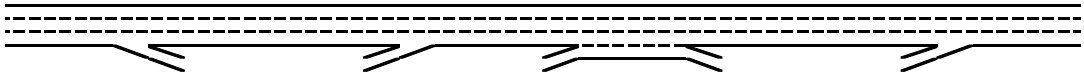
<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	770			1,110		
PHF	0.95			0.95		
Total Lanes	1			1		
Terrain	Level			Level		
Grade %	0.0%			0.0%		
Grade Length (mi)	0.00			0.00		
Truck & Bus %	4.2%			2.0%		
RV %	0.0%			0.0%		
E_T	1.5			1.5		
E_R	1.2			1.2		
f_{HV}	0.979			0.990		
f_P	1.00			1.00		
Off Flow (pcph)	828			1,180		
Off Flow (pcphpl)	828			1,180		
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right			Right		
Off Ramp Speed	45			45		
Off Ramp Cap (pcph)	2,100			2,100		
Off Ramp v/c ratio	0.39			0.56		
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type	No		Off			No
Up Distance			1,680			
Up Flow (pcph)			828			
Down Type	On		No			On
Down Distance	1,500					1,180
Down Flow (pcph)	425					861
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,923			4,667
Up Ramp L_{EQ}			4			
Down Ramp L_{EQ}						5,112
P_{FM} (Eqn 13-3)			0.588			0.593
P_{FM} (Eqn 13-4)			0.694			
P_{FM} (Eqn 13-5)						
P_{FM}			0.588			0.593
v_{12} (pcph)			2,307			2,767
v_3 (pcph)			1,616			1,900
v_{34} (pcph)						
v_{12a} (pcph)			2,307			2,767
v_{R12a} (pcph)			2,733			3,352
Merge Speed Index			0.36			0.40
Merge Area Speed			56.7			55.7
Outer Lanes Volume			1,616			1,900
Outer Lanes Speed			61.0			60.0
Segment Speed			58.2			57.2
Merge v/c ratio			0.59			0.73
Merge Density			24.2			27.9
Merge LOS			C			C

Location	19	20	21	22	23	24



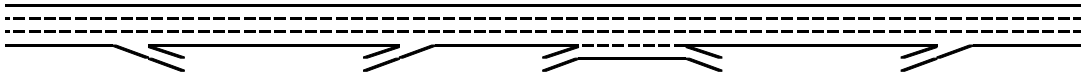
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)	4,742					
Up Ramp L_{EQ}						
Down Ramp L_{EQ}	614					
P_{FD} (Eqn 13-9)	0.603					
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}	0.603					
v_{12} (pcph)	3,189					
v_3 (pcph)	1,552					
v_{34} (pcph)						
v_{12a} (pcph)	3,189					
Diverge Speed Index	0.37					
Diverge Area Speed	56.4					
Outer Lanes Volume	1,552					
Outer Lanes Speed	69.2					
Segment Speed	60.0					
Diverge v/c ratio	0.72					
Diverge Density	29.9					
Diverge LOS	D					
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)				141		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to Off Flow (pcph)				151		
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)				1,269		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to ML Flow (pcph)				1,356		

Location	19	20	21	22	23	24



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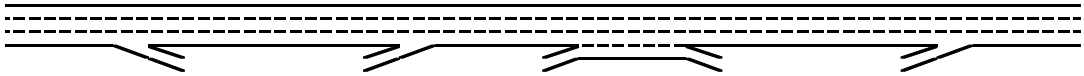
<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)				969		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
ML to Off Flow (pcph)				1,051		
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)				3,121		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
GP to GP Flow (pcph)				3,384		

Location	19	20	21	22	23	24



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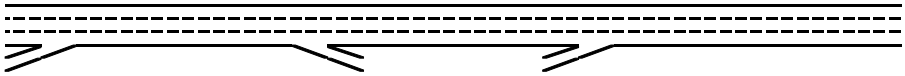
<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Weave Segment Operations						
Weave Type				One-sided		
Weave Length				2,140		
Segment Lanes				4		
Weave Lanes				2		
Weave Flow (pcph)				2,406		
Non-Weave Flow				3,534		
Segment Flow				5,941		
Max Weave Length				6,738		
Length Check				OK		
Ideal Weave Capacity				1,998		
f_{HV}				0.975		
f_P				0.997		
Capacity Condition 1				7,763		
Capacity Condition 2				5,755		
Weave v/c ratio				1.00		
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.72	0.56	0.59	1.00	0.66	0.73
Segment Density	29.9	20.1	24.2	-	24.1	27.9
Segment LOS	D	C	C	F	C	C
Over Capacity				Weave		

Location	25	26	27	28	29



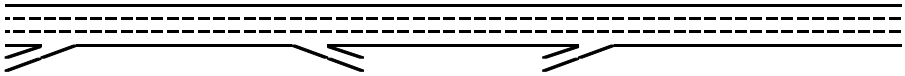
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segment					
Type	Merge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	1,500	2,830	1,500	750
Accel Length	580			590	
Decel Length		140			
Mainline Volume	4,940	5,750	4,720	4,720	5,470
On Ramp Volume	810			750	
Off Ramp Volume		1,030			
Express Lane Volume					
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP					
GP Volume (vph)	5,750	5,750	4,720	5,470	5,470
PHF	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	6,113	6,113	5,018	5,815	5,815
GP Flow (pcphpl)	2,038	2,038	1,673	1,938	1,938
Calculate Speed in General Purpose Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calculated FFS					
Measured FFS					
FFS Curve	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.87	0.87	0.71	0.82	0.82
Speed (mph)	59.2	59.2	63.9	60.9	60.9
Density (pcphpl)	34.4	34.4	26.2	31.8	31.8
LOS	D	D	D	D	D
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)	5,252	6,113		5,018	
GP_{IN} Cap (pcph)	7,050	7,050		7,050	
GP_{IN} v/c ratio	0.74	0.87		0.71	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	6,113	5,018		5,815	
GP_{OUT} Cap (pcph)	7,050	7,050		7,050	
GP_{OUT} v/c ratio	0.87	0.71		0.82	

Location	25	26	27	28	29



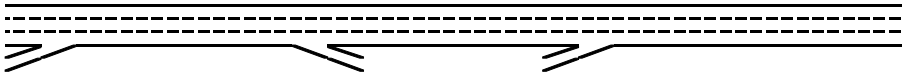
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)					
PHF					
Express Lanes	0	0	0	0	0
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P					
EL Flow (pcph)					
EL Flow (pcphpl)					
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS					
FFS					
	io				
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio					
Calculate On Ramp Flow Rate					
On Volume (vph)	810			750	
PHF	0.95			0.95	
Total Lanes	1			1	
Terrain	Level			Level	
Grade %	0.0%			0.0%	
Grade Length (mi)	0.00			0.00	
Truck & Bus %	2.0%			2.0%	
RV %	0.0%			0.0%	
E_T	1.5			1.5	
E_R	1.2			1.2	
f_{HV}	0.990			0.990	
f_P	1.00			1.00	
On Flow (pcph)	861			797	
On Flow (pcphpl)	861			797	
Calculate On Ramp Roadway Operations					
On Ramp Type	Right			Right	
On Ramp Speed (mph)	45			45	
On Ramp Cap (pcph)	2,100			2,100	
On Ramp v/c ratio	0.41			0.38	

Location	25	26	27	28	29



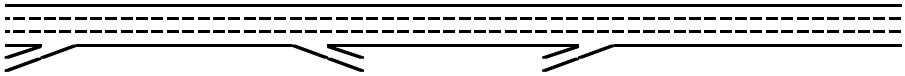
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flow Rate					
Off Volume (vph)		1,030			
PHF		0.95			
Total Lanes		1			
Terrain		Level			
Grade %		0.0%			
Grade Length (mi)		0.00			
Truck & Bus %		2.0%			
RV %		0.0%			
E_T		1.5			
E_R		1.2			
f_{HV}		0.990			
f_P		1.00			
Off Flow (pcph)		1,095			
Off Flow (pcphpl)		1,095			
Calculate Off Ramp Roadway Operations					
Off Ramp Type		Right			
Off Ramp Speed		45			
Off Ramp Cap (pcph)		2,100			
Off Ramp v/c ratio		0.52			
Determine Adjacent Ramp for Three-Lane Mainline					
Up Type	On	On		Off	
Up Distance	1,180	3,000		2,830	
Up Flow (pcph)	585	861		1,095	
Down Type	Off	On		No	
Down Distance	3,000	2,830			
Down Flow (pcph)	1,095	797			
Calculate Merge Influence Area Operations					
Effective v_P (pcph)	5,252			5,018	
Up Ramp L_{EQ}	1,517			1,458	
Down Ramp L_{EQ}	6,379				
P_{FM} (Eqn 13-3)	0.594			0.594	
P_{FM} (Eqn 13-4)				0.680	
P_{FM} (Eqn 13-5)	0.645				
P_{FM}	0.645			0.594	
v_{12} (pcph)	3,386			2,981	
v_3 (pcph)	1,866			2,037	
v_{34} (pcph)					
v_{12a} (pcph)	3,386			2,981	
v_{R12a} (pcph)	4,247			3,778	
Merge Speed Index	0.54			0.44	
Merge Area Speed	52.5			54.9	
Outer Lanes Volume	1,866			2,037	
Outer Lanes Speed	60.1			59.5	
Segment Speed	54.6			56.4	
Merge v/c ratio	0.92			0.82	
Merge Density	34.6			30.9	
Merge LOS	D			D	

Location	25	26	27	28	29



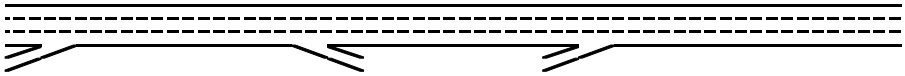
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)		6,113			
Up Ramp L_{EQ}		6,708			
Down Ramp L_{EQ}		1,449			
P_{FD} (Eqn 13-9)		0.557			
P_{FD} (Eqn 13-10)		0.557			
P_{FD} (Eqn 13-11)					
P_{FD}		0.557			
v_{12} (pcph)		3,889			
v_3 (pcph)		2,224			
v_{34} (pcph)					
v_{12a} (pcph)		3,889			
Diverge Speed Index		0.40			
Diverge Area Speed		55.9			
Outer Lanes Volume		2,224			
Outer Lanes Speed		66.5			
Segment Speed		59.3			
Diverge v/c ratio		0.88			
Diverge Density		36.4			
Diverge LOS		E			
Calculate On Ramp to Off Ramp Flow Rate for Wea					
On to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to Off Flow (pcph)					
Calculate On Ramp to Mainline Flow Rate for Weav					
On to ML Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to ML Flow (pcph)					

Location	25	26	27	28	29



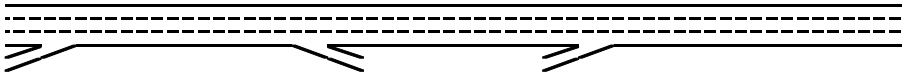
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to Off Ramp Flow Rate for Weav					
ML to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
ML to Off Flow (pcph)					
Calculate General Purpose Lanes to General Purpo					
GP to GP Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
GP to GP Flow (pcph)					

Location	25	26	27	28	29



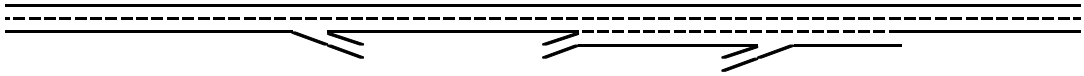
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segment Operations					
Weave Type					
Weave Length					
Segment Lanes					
Weave Lanes					
Weave Flow (pcph)					
Non-Weave Flow					
Segment Flow					
Max Weave Length					
Length Check					
Ideal Weave Capacity					
f_{HV}					
f_P					
Capacity Condition 1					
Capacity Condition 2					
Weave v/c ratio					
Interchange Density					
Lane Changes On to ML					
Lane Changes ML to Off					
Lane Changes On to Off					
Min Lane Change Rate					
Weave LC Rate					
Non-Weave LC Rate 1					
Non-Weave LC Rate 2					
Non-Weave LC Rate 3					
Segment LC Rate					
Weave Intensity Factor					
Weave Speed					
Non-Weave Speed					
Segment Speed					
Weave Density					
Weave LOS					
Summarize Segment Operations					
Segment v/c ratio	0.92	0.88	0.71	0.82	0.82
Segment Density	34.6	36.4	26.2	30.9	31.8
Segment LOS	D	E	D	D	D
Over Capacity					

Location	1	2	3	4	5	6



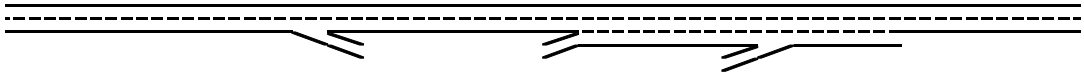
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Define Freeway Segment						
Type	Basic	Diverge	Basic	Basic	Merge	Basic
Length (ft)	8,330	1,500	1,800	1,000	1,500	870
Accel Length					720	
Decel Length		150				
Mainline Volume	1,830	1,830	1,380	1,380	2,380	2,590
On Ramp Volume				1,000	210	
Off Ramp Volume		450				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	1,830	1,830	1,380	2,380	2,590	2,590
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	3	3	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	1,946	1,946	1,467	2,530	2,754	2,754
GP Flow (pcphpl)	973	973	734	843	918	1,377
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.41	0.41	0.31	0.36	0.39	0.59
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	15.0	15.0	11.3	13.0	14.1	21.2
LOS	B	B	B	B	B	C
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)		1,946		1,467	2,530	
GP_{IN} Cap (pcph)		4,700		4,700	7,050	
GP_{IN} v/c ratio		0.41		0.31	0.36	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)		1,467			2,754	
GP_{OUT} Cap (pcph)		4,700			7,050	
GP_{OUT} v/c ratio		0.31			0.39	

Location	1	2	3	4	5	6



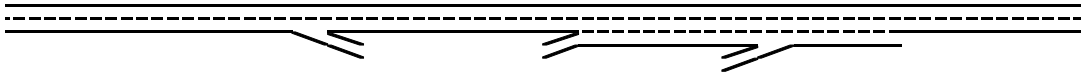
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)				1,000	210	
PHF				0.95	0.95	
Total Lanes				1	1	
Terrain				Level	Level	
Grade %				0.0%	0.0%	
Grade Length (mi)				0.00	0.00	
Truck & Bus %				2.0%	2.0%	
RV %				0.0%	0.0%	
E_T				1.5	1.5	
E_R				1.2	1.2	
f_{HV}				0.990	0.990	
f_P				1.00	1.00	
On Flow (pcph)				1,063	223	
On Flow (pcphpl)				1,063	223	
Calculate On Ramp Roadway Operations						
On Ramp Type				Right	Right	
On Ramp Speed (mph)				25	45	
On Ramp Cap (pcph)				1,900	2,100	
On Ramp v/c ratio				0.56	0.11	

Location	1	2	3	4	5	6



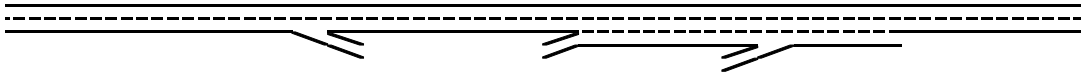
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Off Ramp Flow Rate						
Off Volume (vph)		450				
PHF		0.95				
Total Lanes		1				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		478				
Off Flow (pcphpl)		478				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		2,100				
Off Ramp v/c ratio		0.23				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type					On	
Up Distance					1,000	
Up Flow (pcph)					1,063	
Down Type					No	
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)					2,530	
Up Ramp L_{EQ}					860	
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)					0.598	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}					0.598	
v_{12} (pcph)					1,512	
v_3 (pcph)					1,018	
v_{34} (pcph)						
v_{12a} (pcph)					1,512	
v_{R12a} (pcph)					1,736	
Merge Speed Index					0.28	
Merge Area Speed					58.6	
Outer Lanes Volume					1,018	
Outer Lanes Speed					63.1	
Segment Speed					60.2	
Merge v/c ratio					0.38	
Merge Density					14.4	
Merge LOS					B	

Location	1	2	3	4	5	6



Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)		1,946				
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)		0.689				
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}		1.000				
v_{12} (pcph)		1,946				
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)		1,946				
Diverge Speed Index		0.34				
Diverge Area Speed		57.2				
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed		57.2				
Diverge v/c ratio		0.44				
Diverge Density		19.6				
Diverge LOS		B				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	1	2	3	4	5	6

Key

<> Express Lane (HOV)

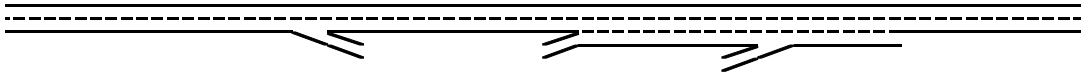
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 CIP Plus Project
Time Period: 2035 PM Peak Hour

Location	1	2	3	4	5	6



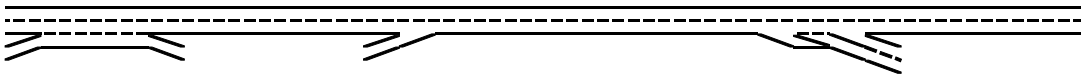
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.41	0.44	0.31	0.36	0.38	0.59
Segment Density	15.0	19.6	11.3	13.0	14.4	21.2
Segment LOS	B	B	B	B	B	C
Over Capacity						

Location	7	8	9	10	11	12



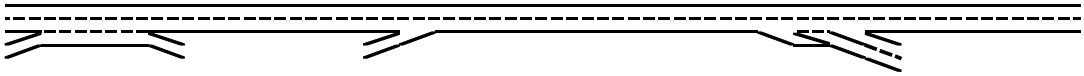
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Basic	Diverge	Basic
Length (ft)	3,050	1,120	1,500	2,210	1,500	1,830
Accel Length			450			
Decel Length					1,500	
Mainline Volume	2,590	2,980	2,980	3,790	3,790	3,280
On Ramp Volume	920		810			
Off Ramp Volume	530				510	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,510	2,980	3,790	3,790	3,790	3,280
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,732	3,168	4,029	4,029	4,029	3,487
GP Flow (pcphpl)	1,244	1,584	2,015	2,015	2,015	1,744
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.53	0.67	0.86	0.86	0.86	0.74
Speed (mph)	65.0	64.5	59.6	59.6	59.6	63.3
Density (pcphpl)	19.1	24.6	33.8	33.8	33.8	27.5
LOS	C	C	D	D	D	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	2,749		3,168		4,029	
GP_{IN} Cap (pcph)	4,700		4,700		4,700	
GP_{IN} v/c ratio	0.58		0.67		0.86	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,168		4,029		3,487	
GP_{OUT} Cap (pcph)	4,700		4,700		4,700	
GP_{OUT} v/c ratio	0.67		0.86		0.74	

Location	7	8	9	10	11	12



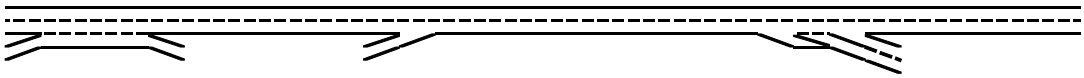
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5			
E_R	1.2	1.2	1.2			
f_{HV}	0.990	0.990	0.990			
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	920		810			
PHF	0.95		0.95			
Total Lanes	1		1			
Terrain	Level		Level			
Grade %	0.0%		0.0%			
Grade Length (mi)	0.00		0.00			
Truck & Bus %	3.0%		2.0%			
RV %	0.0%		0.0%			
E_T	1.5		1.5			
E_R	1.2		1.2			
f_{HV}	0.985		0.990			
f_P	1.00		1.00			
On Flow (pcph)	983		861			
On Flow (pcphpl)	983		861			
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right			
On Ramp Speed (mph)	45		25			
On Ramp Cap (pcph)	2,100		1,900			
On Ramp v/c ratio	0.47		0.45			

Location	7	8	9	10	11	12



Key

<> Express Lane (HOV)

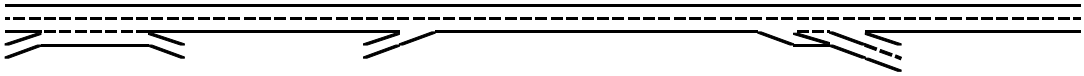
No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	530				510	
PHF	0.95				0.95	
Total Lanes	1				2	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	2.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.990				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	563				542	
Off Flow (pcphpl)	563				271	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				4,200	
Off Ramp v/c ratio	0.27				0.13	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,168			
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.590			
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000			
v_{12} (pcph)			3,168			
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			3,168			
v_{R12a} (pcph)			4,029			
Merge Speed Index			0.52			
Merge Area Speed			53.1			
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed			53.1			
Merge v/c ratio			0.88			
Merge Density			33.7			
Merge LOS			D			

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 CIP Plus Project
Time Period: 2035 PM Peak Hour

Location	7	8	9	10	11	12



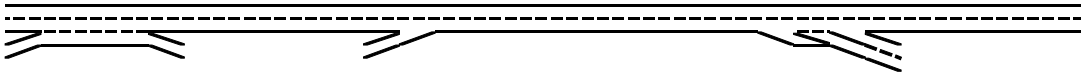
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					4,029	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.634	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					4,029	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					4,029	
Diverge Speed Index					0.35	
Diverge Area Speed					57.0	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed					57.0	
Diverge v/c ratio					0.92	
Diverge Density					25.4	
Diverge LOS					C	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	92					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	98					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	828					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	885					

Location	7	8	9	10	11	12



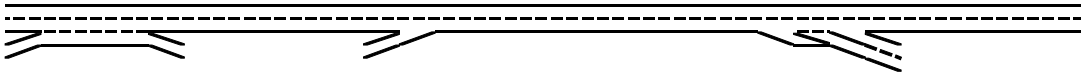
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	438					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
ML to Off Flow (pcph)	520					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	2,152					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
GP to GP Flow (pcph)	2,557					

Location	7	8	9	10	11	12



Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,050					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	1,405					
Non-Weave Flow	2,655					
Segment Flow	4,060					
Max Weave Length	6,083					
Length Check	OK					
Ideal Weave Capacity	2,041					
f_{HV}	0.989					
f_P	0.997					
Capacity Condition 1	6,037					
Capacity Condition 2	6,837					
Weave v/c ratio	0.66					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.66	0.67	0.88	0.86	0.92	0.74
Segment Density		24.6	33.7	33.8	25.4	27.5
Segment LOS		C	D	D	C	D
Over Capacity						

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Define Freeway Segment						
Type	Merge	Weave	Basic	Merge	Merge	Basic
Length (ft)	690	3,344	1,280	1,310	1,500	770
Accel Length	400			500	1,450	
Decel Length						
Mainline Volume	3,280	3,900	3,420	3,420	4,030	4,490
On Ramp Volume	620	330		610	460	
Off Ramp Volume		810				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,900	4,230	3,420	4,030	4,490	4,490
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	3	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,146	4,497	3,636	4,285	4,774	4,774
GP Flow (pcphpl)	2,073	1,499	1,818	2,142	2,387	2,387
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.88	0.64	0.77	0.91	1.02	1.02
Speed (mph)	58.6	64.9	62.5	57.2	-	-
Density (pcphpl)	35.4	23.1	29.1	37.5	-	-
LOS	E	C	D	E	F	F
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	3,487	4,146		3,636	4,285	
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{IN} v/c ratio	0.74	0.88		0.77	0.91	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	4,146	3,636		4,285	4,774	
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{OUT} v/c ratio	0.88	0.77		0.91	1.02	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T		1.5	1.5	1.5	1.5	
E_R		1.2	1.2	1.2	1.2	
f_{HV}		0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	620	330		610	460	
PHF	0.95	0.95		0.95	0.95	
Total Lanes	1	1		1	1	
Terrain	Level	Level		Level	Level	
Grade %	0.0%	0.0%		0.0%	0.0%	
Grade Length (mi)	0.00	0.00		0.00	0.00	
Truck & Bus %	2.0%	2.0%		2.0%	2.0%	
RV %	0.0%	0.0%		0.0%	0.0%	
E_T	1.5	1.5		1.5	1.5	
E_R	1.2	1.2		1.2	1.2	
f_{HV}	0.990	0.990		0.990	0.990	
f_P	1.00	1.00		1.00	1.00	
On Flow (pcph)	659	351		649	489	
On Flow (pcphpl)	659	351		649	489	
Calculate On Ramp Roadway Operations						
On Ramp Type	Right	Right		Right	Right	
On Ramp Speed (mph)	25	45		25	45	
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100	
On Ramp v/c ratio	0.35	0.17		0.34	0.23	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)		810				
PHF		0.95				
Total Lanes		2				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		861				
Off Flow (pcphpl)		431				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		4,200				
Off Ramp v/c ratio		0.21				
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)	3,487			3,636	4,285	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)	0.589			0.592	0.618	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}	1.000			1.000	1.000	
v_{12} (pcph)	3,487			3,636	4,285	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)	3,487			3,636	4,285	
v_{R12a} (pcph)	4,146			4,285	4,774	
Merge Speed Index	0.55			0.58	-	
Merge Area Speed	52.4			51.7	-	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed	52.4			51.7		
Merge v/c ratio	0.90			0.93	1.04	
Merge Density	35.0			35.5	-	
Merge LOS	E			E	F	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)						
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)						
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}						
v_{12} (pcph)						
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)						
Diverge Speed Index						
Diverge Area Speed						
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio						
Diverge Density						
Diverge LOS						
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)		50				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to Off Flow (pcph)		53				
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)		280				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to ML Flow (pcph)		299				

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)		760				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
ML to Off Flow (pcph)		824				
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)		3,140				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
GP to GP Flow (pcph)		3,404				

Location	13	14	15	16	17	18

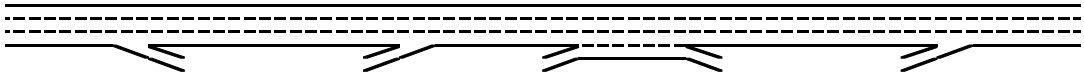
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Weave Segment Operations						
Weave Type		One-sided				
Weave Length		2,344				
Segment Lanes		3				
Weave Lanes		2				
Weave Flow (pcph)		1,123				
Non-Weave Flow		3,458				
Segment Flow		4,581				
Max Weave Length		5,003				
Length Check		OK				
Ideal Weave Capacity		2,147				
f_{HV}		0.972				
f_P		0.999				
Capacity Condition 1		6,253				
Capacity Condition 2		9,505				
Weave v/c ratio		0.71				
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.90	0.71	0.77	0.93	1.04	1.02
Segment Density	35.0		29.1	35.5	-	-
Segment LOS	E		D	E	F	F
Over Capacity					Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes

Location	19	20	21	22	23	24



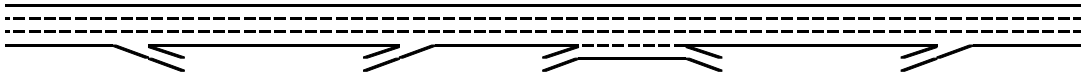
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Define Freeway Segment						
Type	Diverge	Basic	Merge	Weave	Basic	Merge
Length (ft)	1,500	1,680	1,000	3,140	1,610	1,180
Accel Length			380			550
Decel Length	200					
Mainline Volume	4,490	3,570	3,570	3,910	4,710	4,710
On Ramp Volume			340	1,680		620
Off Ramp Volume	920			880		
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,490	3,570	3,910	5,590	4,710	5,330
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	4	3	3
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	4.2%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.979	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,774	3,795	4,157	6,008	5,007	5,667
GP Flow (pcphpl)	1,591	1,265	1,386	1,502	1,669	1,889
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.68	0.54	0.59	0.64	0.71	0.80
Speed (mph)	64.5	65.0	65.0	64.9	64.0	61.6
Density (pcphpl)	24.7	19.5	21.3	23.2	26.1	30.7
LOS	C	C	C	C	D	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,774		3,795	4,222		5,004
GP_{IN} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{IN} v/c ratio	0.68		0.54	0.60		0.71
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,795		4,157	5,072		5,667
GP_{OUT} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{OUT} v/c ratio	0.54		0.59	0.72		0.80

Location	19	20	21	22	23	24



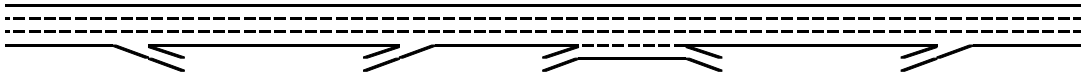
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)			340	1,680		620
PHF			0.95	0.95		0.95
Total Lanes			1	1		1
Terrain			Level	Level		Level
Grade %			0.0%	0.0%		0.0%
Grade Length (mi)			0.00	0.00		0.00
Truck & Bus %			2.0%	2.0%		3.0%
RV %			0.0%	0.0%		0.0%
E_T			1.5	1.5		1.5
E_R			1.2	1.2		1.2
f_{HV}			0.990	0.990		0.985
f_P			1.00	1.00		1.00
On Flow (pcph)			361	1,786		662
On Flow (pcphpl)			361	1,786		662
Calculate On Ramp Roadway Operations						
On Ramp Type			Right	Right		Right
On Ramp Speed (mph)			25	45		25
On Ramp Cap (pcph)			1,900	2,100		1,900
On Ramp v/c ratio			0.19	0.85		0.35

Location	19	20	21	22	23	24



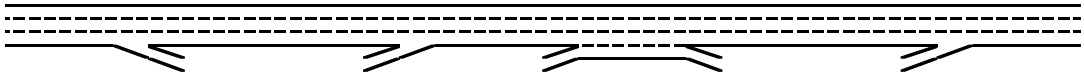
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	920			880		
PHF	0.95			0.95		
Total Lanes	1			1		
Terrain	Level			Level		
Grade %	0.0%			0.0%		
Grade Length (mi)	0.00			0.00		
Truck & Bus %	2.0%			2.0%		
RV %	0.0%			0.0%		
E_T	1.5			1.5		
E_R	1.2			1.2		
f_{HV}	0.990			0.990		
f_P	1.00			1.00		
Off Flow (pcph)	978			936		
Off Flow (pcphpl)	978			936		
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right			Right		
Off Ramp Speed	45			45		
Off Ramp Cap (pcph)	2,100			2,100		
Off Ramp v/c ratio	0.47			0.45		
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type	No		Off			No
Up Distance			1,680			
Up Flow (pcph)			978			
Down Type	On		No			On
Down Distance	1,500					1,180
Down Flow (pcph)	361					919
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,795			5,004
Up Ramp L_{EQ}			-37			
Down Ramp L_{EQ}						5,455
P_{FM} (Eqn 13-3)			0.588			0.593
P_{FM} (Eqn 13-4)			0.696			
P_{FM} (Eqn 13-5)						
P_{FM}			0.588			0.593
v_{12} (pcph)			2,232			2,967
v_3 (pcph)			1,563			2,037
v_{34} (pcph)						
v_{12a} (pcph)			2,232			2,967
v_{R12a} (pcph)			2,594			3,629
Merge Speed Index			0.35			0.44
Merge Area Speed			56.9			54.9
Outer Lanes Volume			1,563			2,037
Outer Lanes Speed			61.2			59.5
Segment Speed			58.4			56.4
Merge v/c ratio			0.56			0.79
Merge Density			23.2			30.0
Merge LOS			C			D

Location	19	20	21	22	23	24



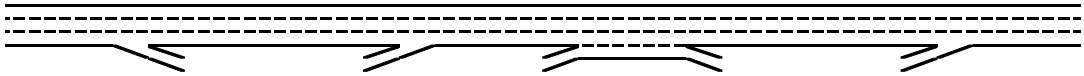
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)	4,774					
Up Ramp L_{EQ}						
Down Ramp L_{EQ}	568					
P_{FD} (Eqn 13-9)	0.596					
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}	0.596					
v_{12} (pcph)	3,239					
v_3 (pcph)	1,535					
v_{34} (pcph)						
v_{12a} (pcph)	3,239					
Diverge Speed Index	0.39					
Diverge Area Speed	56.1					
Outer Lanes Volume	1,535					
Outer Lanes Speed	69.2					
Segment Speed	59.8					
Diverge v/c ratio	0.74					
Diverge Density	30.3					
Diverge LOS	D					
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)				168		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to Off Flow (pcph)				179		
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)				1,512		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to ML Flow (pcph)				1,615		

Location	19	20	21	22	23	24



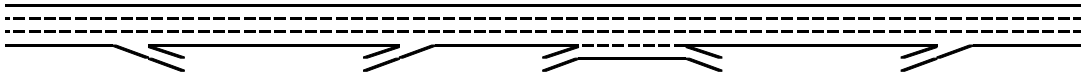
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)				712		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
ML to Off Flow (pcph)				772		
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)				3,198		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
GP to GP Flow (pcph)				3,467		

Location	19	20	21	22	23	24



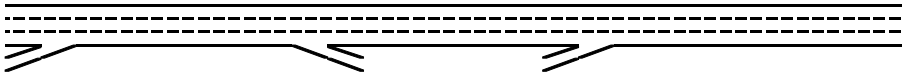
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Weave Segment Operations						
Weave Type				One-sided		
Weave Length				2,140		
Segment Lanes				4		
Weave Lanes				2		
Weave Flow (pcph)				2,387		
Non-Weave Flow				3,647		
Segment Flow				6,034		
Max Weave Length				6,632		
Length Check				OK		
Ideal Weave Capacity				2,006		
f_{HV}				0.975		
f_P				0.996		
Capacity Condition 1				7,795		
Capacity Condition 2				5,892		
Weave v/c ratio				0.99		
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.74	0.54	0.56	0.99	0.71	0.79
Segment Density	30.3	19.5	23.2		26.1	30.0
Segment LOS	D	C	C		D	D
Over Capacity						

Location	25	26	27	28	29



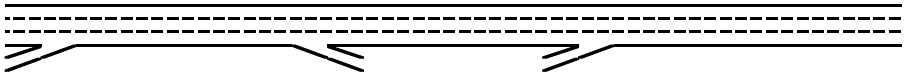
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segment					
Type	Merge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	1,500	2,830	1,500	750
Accel Length	580			590	
Decel Length		140			
Mainline Volume	5,330	6,190	5,350	5,350	6,530
On Ramp Volume	860			1,180	
Off Ramp Volume		840			
Express Lane Volume					
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP					
GP Volume (vph)	6,190	6,190	5,350	6,530	6,530
PHF	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	6,581	6,581	5,688	6,942	6,942
GP Flow (pcphpl)	2,194	2,194	1,896	2,314	2,314
Calculate Speed in General Purpose Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calculated FFS					
Measured FFS					
FFS Curve	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.93	0.93	0.81	0.98	0.98
Speed (mph)	56.1	56.1	61.5	53.2	53.2
Density (pcphpl)	39.1	39.1	30.8	43.5	43.5
LOS	E	E	D	E	E
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)	5,662	6,581		5,682	
GP_{IN} Cap (pcph)	7,050	7,050		7,050	
GP_{IN} v/c ratio	0.80	0.93		0.81	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	6,581	5,688		6,942	
GP_{OUT} Cap (pcph)	7,050	7,050		7,050	
GP_{OUT} v/c ratio	0.93	0.81		0.98	

Location	25	26	27	28	29



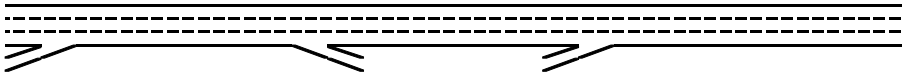
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)					
PHF					
Express Lanes	0	0	0	0	0
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P					
EL Flow (pcph)					
EL Flow (pcphpl)					
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS					
FFS					
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio					
Calculate On Ramp Flow Rate					
On Volume (vph)	860			1,180	
PHF	0.95			0.95	
Total Lanes	1			1	
Terrain	Level			Level	
Grade %	0.0%			0.0%	
Grade Length (mi)	0.00			0.00	
Truck & Bus %	3.0%			3.0%	
RV %	0.0%			0.0%	
E_T	1.5			1.5	
E_R	1.2			1.2	
f_{HV}	0.985			0.985	
f_P	1.00			1.00	
On Flow (pcph)	919			1,261	
On Flow (pcphpl)	919			1,261	
Calculate On Ramp Roadway Operations					
On Ramp Type	Right			Right	
On Ramp Speed (mph)	45			45	
On Ramp Cap (pcph)	2,100			2,100	
On Ramp v/c ratio	0.44			0.60	

Location	25	26	27	28	29



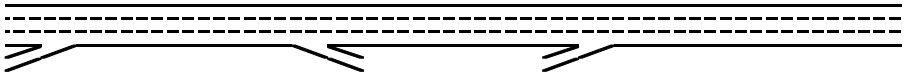
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flow Rate					
Off Volume (vph)		840			
PHF		0.95			
Total Lanes		1			
Terrain		Level			
Grade %		0.0%			
Grade Length (mi)		0.00			
Truck & Bus %		2.0%			
RV %		0.0%			
E_T		1.5			
E_R		1.2			
f_{HV}		0.990			
f_P		1.00			
Off Flow (pcph)		893			
Off Flow (pcphpl)		893			
Calculate Off Ramp Roadway Operations					
Off Ramp Type		Right			
Off Ramp Speed		45			
Off Ramp Cap (pcph)		2,100			
Off Ramp v/c ratio		0.43			
Determine Adjacent Ramp for Three-Lane Mainline					
Up Type	On	On		Off	
Up Distance	1,180	3,000		2,830	
Up Flow (pcph)	662	919		893	
Down Type	Off	On		No	
Down Distance	3,000	2,830			
Down Flow (pcph)	893	1,261			
Calculate Merge Influence Area Operations					
Effective v_P (pcph)	5,662			5,682	
Up Ramp L_{EQ}	1,617			1,699	
Down Ramp L_{EQ}	5,202				
P_{FM} (Eqn 13-3)	0.594			0.594	
P_{FM} (Eqn 13-4)				0.665	
P_{FM} (Eqn 13-5)	0.627				
P_{FM}	0.627			0.594	
v_{12} (pcph)	3,550			3,375	
v_3 (pcph)	2,112			2,307	
v_{34} (pcph)					
v_{12a} (pcph)	3,550			3,375	
v_{R12a} (pcph)	4,469			4,636	
Merge Speed Index	0.61			0.67	
Merge Area Speed	51.0			49.6	
Outer Lanes Volume	2,112			2,307	
Outer Lanes Speed	59.2			58.4	
Segment Speed	53.4			52.2	
Merge v/c ratio	0.97			1.01	
Merge Density	36.3			37.4	
Merge LOS	E			F	

Location	25	26	27	28	29



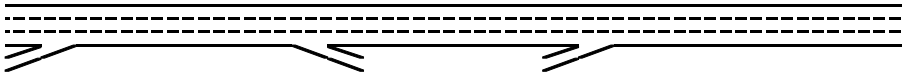
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)		6,581			
Up Ramp L_{EQ}		5,948			
Down Ramp L_{EQ}		2,067			
P_{FD} (Eqn 13-9)		0.554			
P_{FD} (Eqn 13-10)		0.554			
P_{FD} (Eqn 13-11)					
P_{FD}		0.554			
v_{12} (pcph)		4,046			
v_3 (pcph)		2,535			
v_{34} (pcph)					
v_{12a} (pcph)		4,046			
Diverge Speed Index		0.38			
Diverge Area Speed		56.3			
Outer Lanes Volume		2,535			
Outer Lanes Speed		65.3			
Segment Speed		59.5			
Diverge v/c ratio		0.92			
Diverge Density		37.8			
Diverge LOS		E			
Calculate On Ramp to Off Ramp Flow Rate for Wea					
On to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to Off Flow (pcph)					
Calculate On Ramp to Mainline Flow Rate for Weav					
On to ML Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to ML Flow (pcph)					

Location	25	26	27	28	29



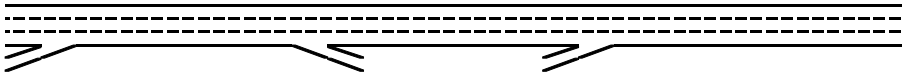
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to Off Ramp Flow Rate for Weav					
ML to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
ML to Off Flow (pcph)					
Calculate General Purpose Lanes to General Purpo					
GP to GP Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
GP to GP Flow (pcph)					

Location	25	26	27	28	29



Key

<> Express Lane (HOV)

No Trucks

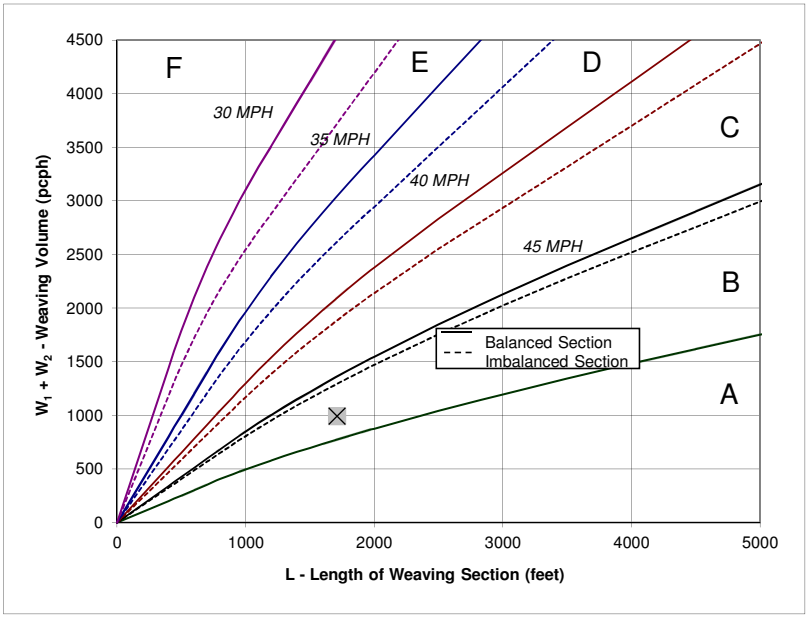
Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segment Operations					
Weave Type					
Weave Length					
Segment Lanes					
Weave Lanes					
Weave Flow (pcph)					
Non-Weave Flow					
Segment Flow					
Max Weave Length					
Length Check					
Ideal Weave Capacity					
f_{HV}					
f_P					
Capacity Condition 1					
Capacity Condition 2					
Weave v/c ratio					
Interchange Density					
Lane Changes On to ML					
Lane Changes ML to Off					
Lane Changes On to Off					
Min Lane Change Rate					
Weave LC Rate					
Non-Weave LC Rate 1					
Non-Weave LC Rate 2					
Non-Weave LC Rate 3					
Segment LC Rate					
Weave Intensity Factor					
Weave Speed					
Non-Weave Speed					
Segment Speed					
Weave Density					
Weave LOS					
Summarize Segment Operations					
Segment v/c ratio	0.97	0.92	0.81	1.01	0.98
Segment Density	36.3	37.8	30.8	-	43.5
Segment LOS	E	E	D	F	E
Over Capacity				Merge	

Leisch Method for Weaving Analysis

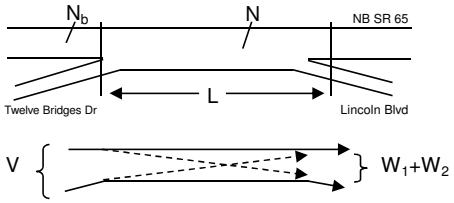
Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP Plus Project AM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	2,630	Volume (vph)*	410	Volume (vph)*	560
Truck Percentage	5%	Truck Percentage	7%	Truck Percentage	3%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	2,689	Volume (pcph)	425	Volume (pcph)	569



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**45 MPH** and **50 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	48.1
4. Weaving Intensity Factor (k)	1.50
5. Service Volume (SV, pcph) $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$	968
6. Level of Service (LOS)	B

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

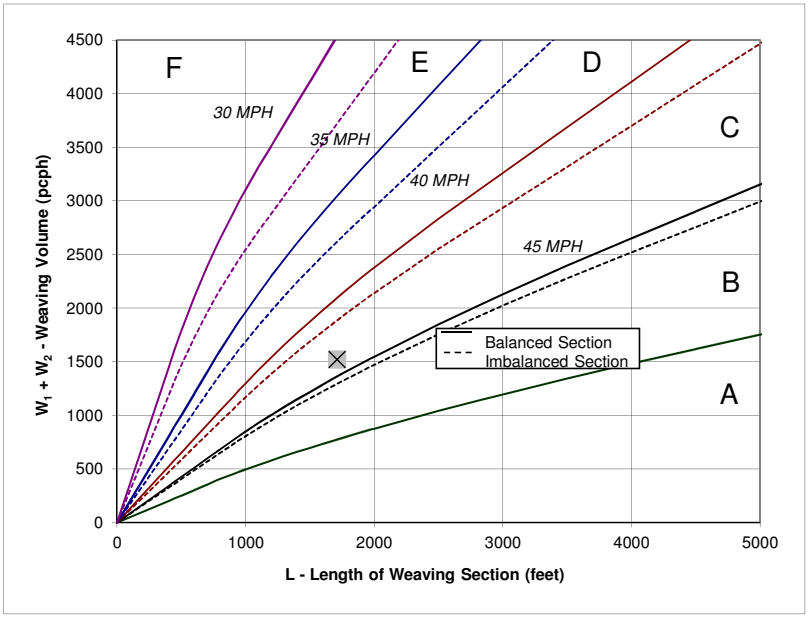
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

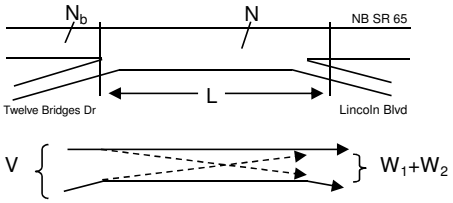
Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,480	Volume (vph)*	853	Volume (vph)*	653
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,546	Volume (pcph)	861	Volume (pcph)	659

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP Plus Project PM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **43.9**
4. Weaving Intensity Factor (k) **2.11**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **2,093**
6. Level of Service (LOS) **F**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

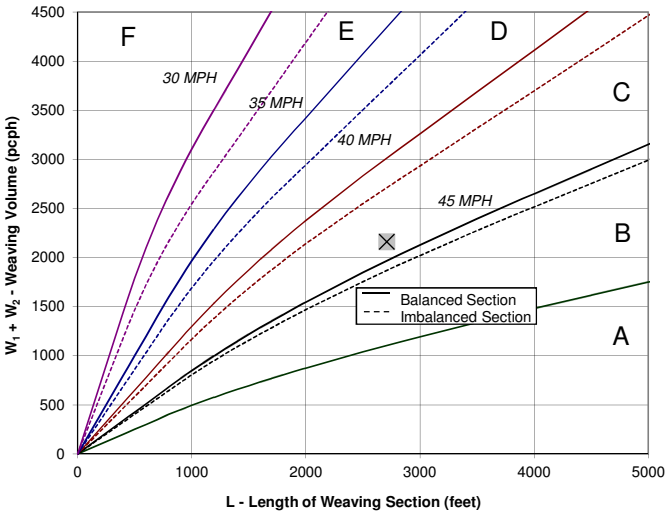
Data Input

Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,710

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,460	Volume (vph)*	396	Volume (vph)*	1,746
Truck Percentage	5%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,583	Volume (pcph)	400	Volume (pcph)	1,763

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP NPlus Project AM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd



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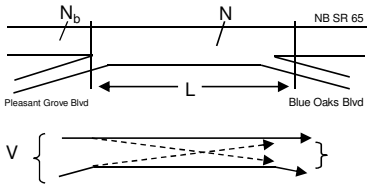


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 44.1
4. Weaving Intensity Factor (k) 2.83
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,579
6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

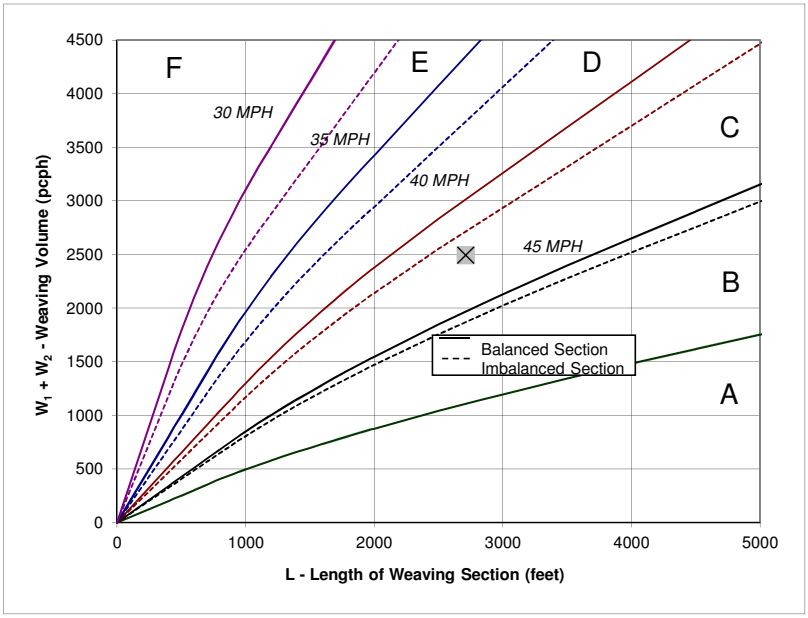
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,710

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP Plus Project PM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,610	Volume (vph)*	819	Volume (vph)*	1,649
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,677	Volume (pcph)	827	Volume (pcph)	1,665



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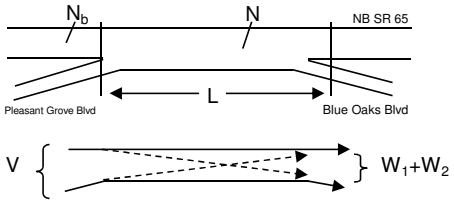


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 42.5
4. Weaving Intensity Factor (k) 2.28
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,684
6. Level of Service (LOS) E

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

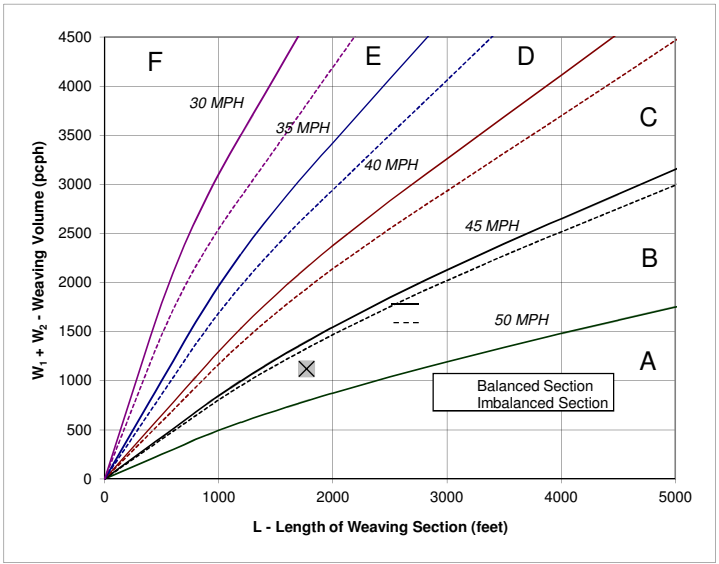
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,770

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,440	Volume (vph)*	315	Volume (vph)*	795
Truck Percentage	5%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,517	Volume (pcph)	319	Volume (pcph)	803

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP Plus Project AM
Freeway	NB SR 65
On-ramp	Sunset Blvd
Off-ramp	Placer Pkwy



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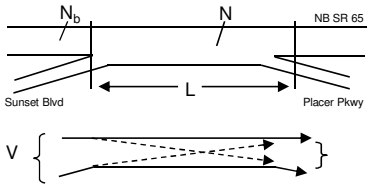


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **47.3**
4. Weaving Intensity Factor (k) **1.63**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,239**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

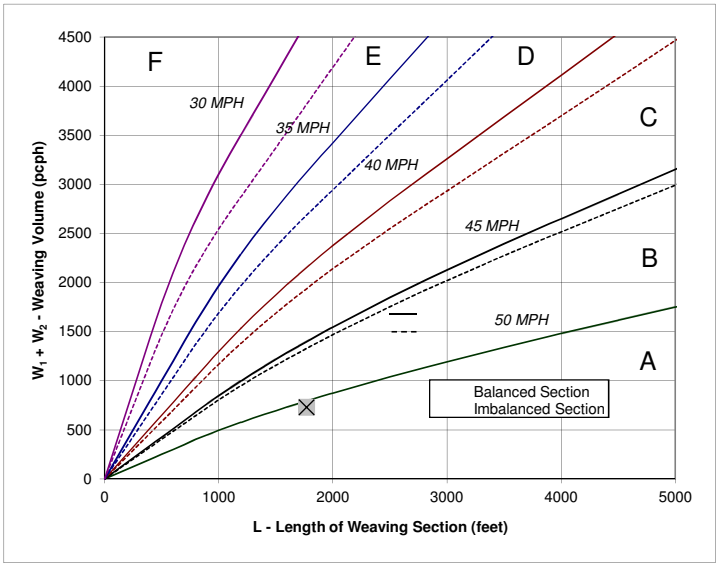
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,770

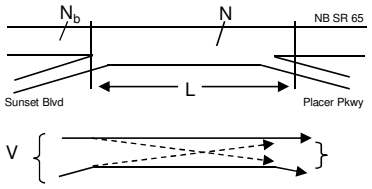
Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,270	Volume (vph)*	422	Volume (vph)*	302
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,321	Volume (pcph)	427	Volume (pcph)	305

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP Plus Project PM
Freeway	NB SR 65
On-ramp	Sunset Blvd
Off-ramp	Placer Pkwy



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 49.4
4. Weaving Intensity Factor (k) 1.28
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,469
6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

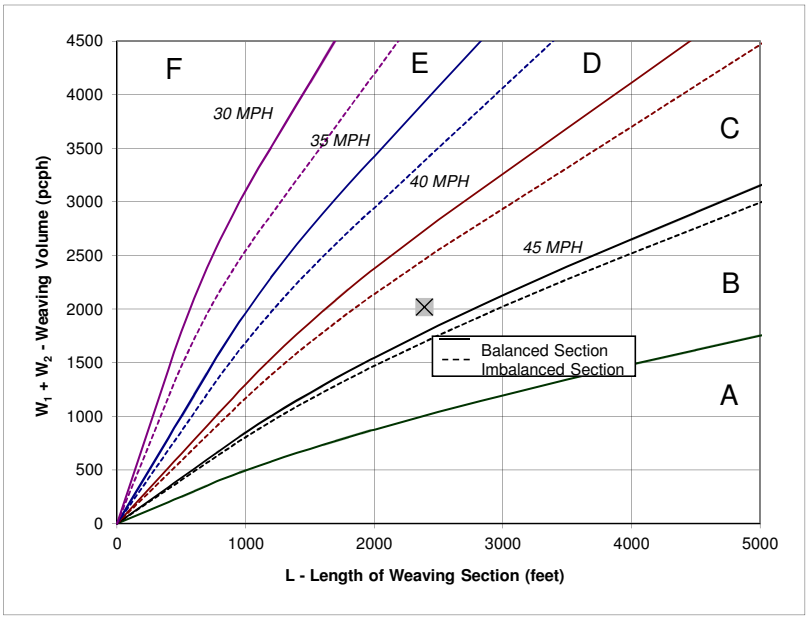
Data Input

Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,390

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP Plus Project AM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,500	Volume (vph)*	1,142	Volume (vph)*	842
Truck Percentage	2%	Truck Percentage	5%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,555	Volume (pcph)	1,168	Volume (pcph)	851



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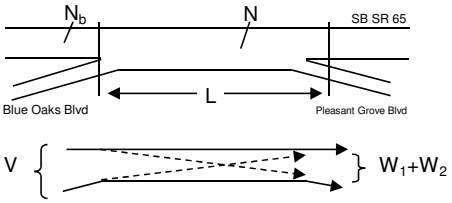


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **43.8**
4. Weaving Intensity Factor (k) **2.12**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,628**
6. Level of Service (LOS) **E**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

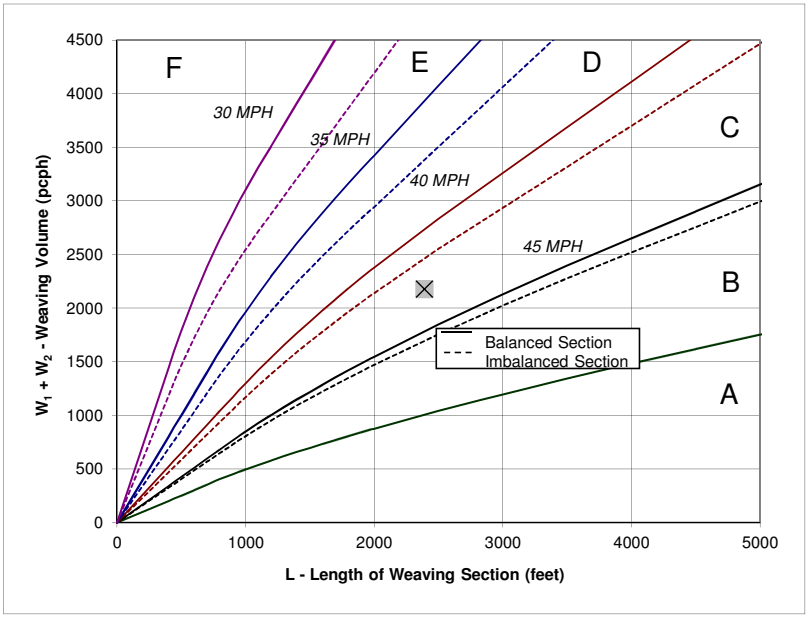
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,390

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP Plus Project PM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,590	Volume (vph)*	1,478	Volume (vph)*	678
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,646	Volume (pcph)	1,493	Volume (pcph)	685



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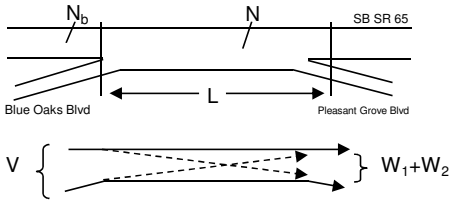


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **42.9**
4. Weaving Intensity Factor (k) **2.23**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,623**
6. Level of Service (LOS) **E**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

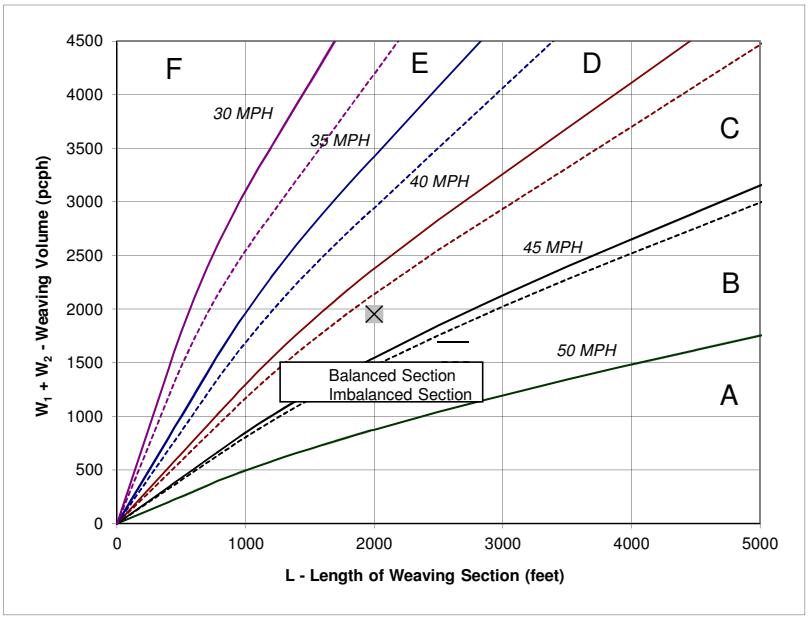
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP Plus Project AM
Freeway	SB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,510	Volume (vph)*	697	Volume (vph)*	1,237
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,565	Volume (pcph)	704	Volume (pcph)	1,249



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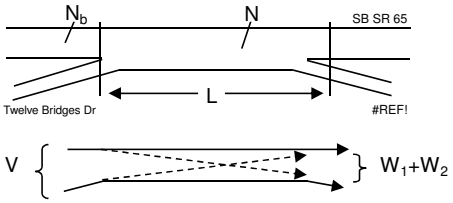


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**40 MPH** and **45 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	42.6
4. Weaving Intensity Factor (k)	2.27
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	2,152
6. Level of Service (LOS)	F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

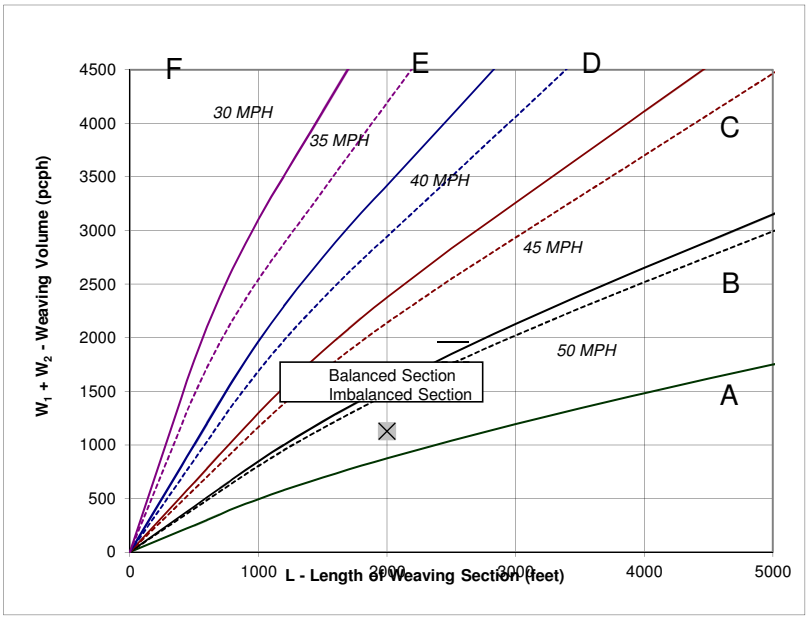
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,510	Volume (vph)*	754	Volume (vph)*	364
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,545	Volume (pcph)	762	Volume (pcph)	368

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP Plus Project PM
Freeway	SB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr



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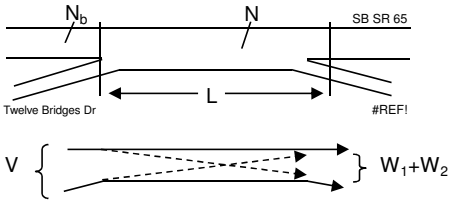


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **48.1**
4. Weaving Intensity Factor (k) **1.50**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,243**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

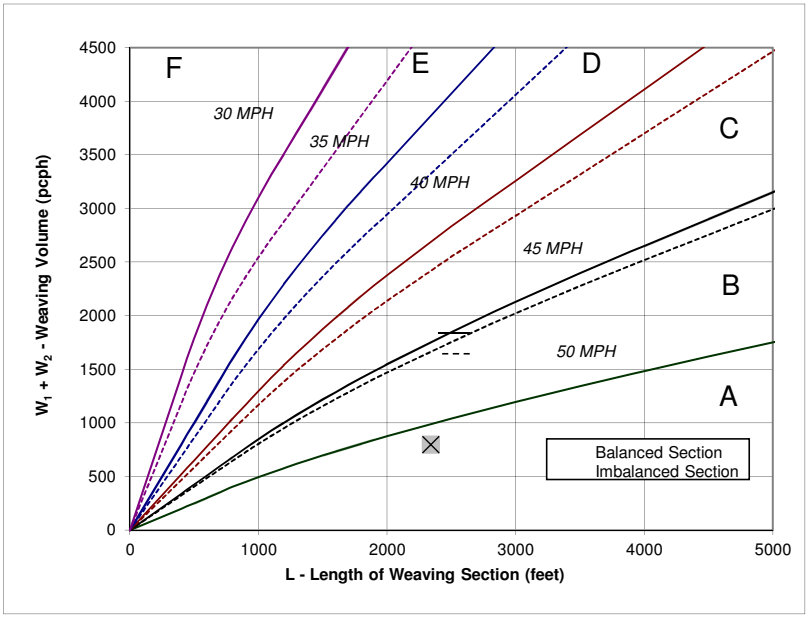
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,340

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,330	Volume (vph)*	20	Volume (vph)*	770
Truck Percentage	2%	Truck Percentage	3%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,373	Volume (pcph)	20	Volume (pcph)	778

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP Plus Project AM
Freeway	SB SR 65
On-ramp	Placer Pkwy
Off-ramp	Sunset Blvd



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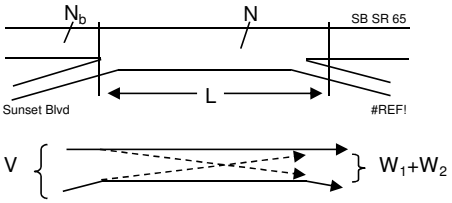


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **51.2**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,458**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

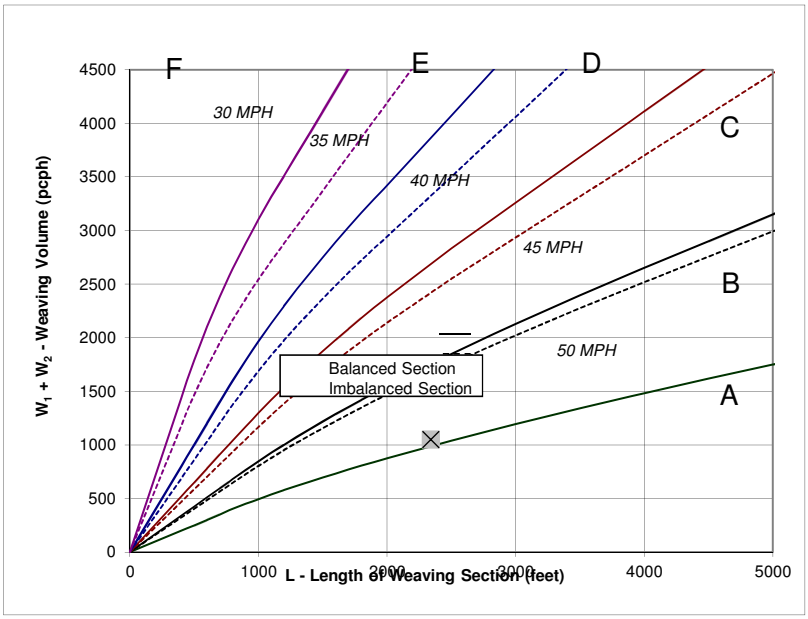
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,340

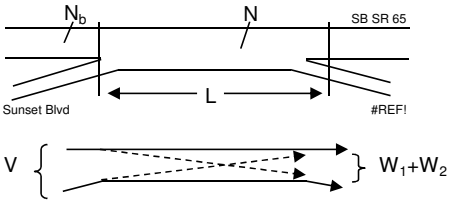
Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,230	Volume (vph)*	281	Volume (vph)*	761
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,272	Volume (pcph)	283	Volume (pcph)	768

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CIP Plus Project PM
Freeway	SB SR 65
On-ramp	Placer Pkwy
Off-ramp	Sunset Blvd



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **49.6**
4. Weaving Intensity Factor (k) **1.25**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,448**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

APPENDIX D:

2035 CUMULATIVE CONDITIONS TECHNICAL CALCULATIONS

2035 CUMULATIVE NO PROJECT CONDITIONS

CITY OF ROSEVILLE INTERSECTIONS

N:\2011Projects\2923_AmorusoRanchEIR_TDM\Graphics\Draft\GIS\MXD_Nov2015\FigC3_StudyIntersection_Cumu.mxd

1 Existing Study Intersection

P1 Existing Study Intersection in Pedestrian Overlay Zone

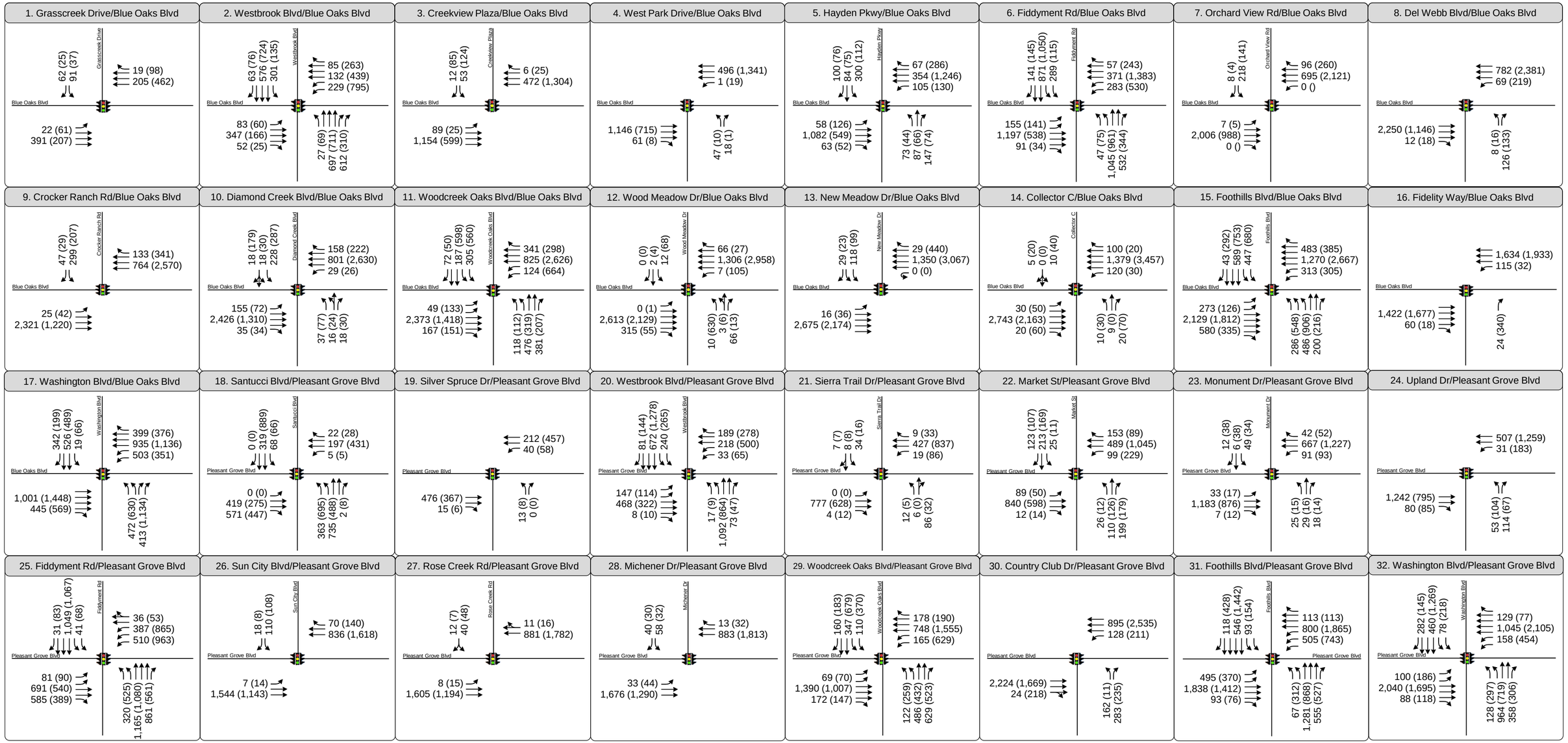
1 Future Study Intersections by 2035

N Not to Scale

Note: Additional intersections outside City of Roseville also being studied.

Figure C-3

Signalized Study Intersections in Roseville - 2035 Conditions



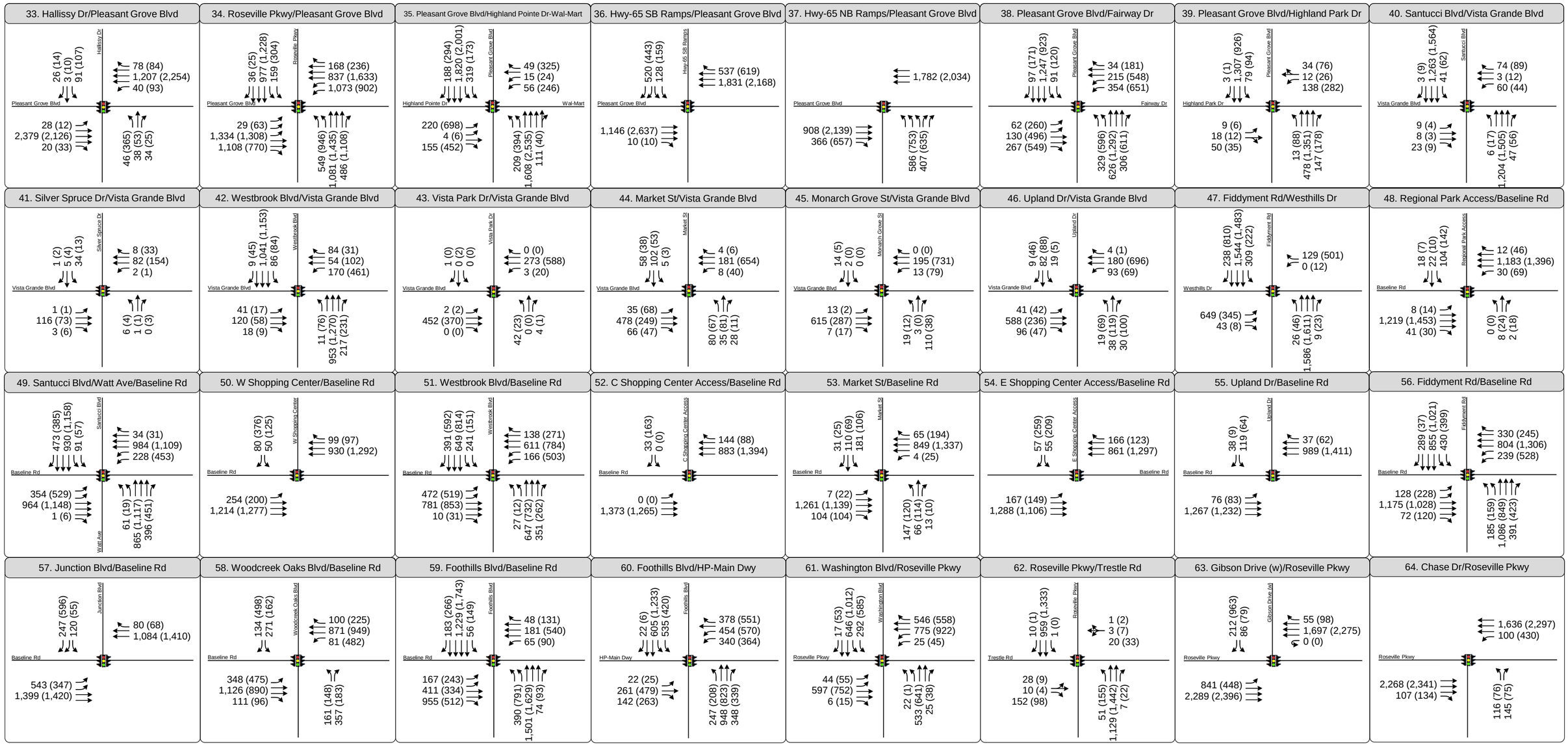
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure D-1a

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative No Project Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure D-1b

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative No Project Conditions

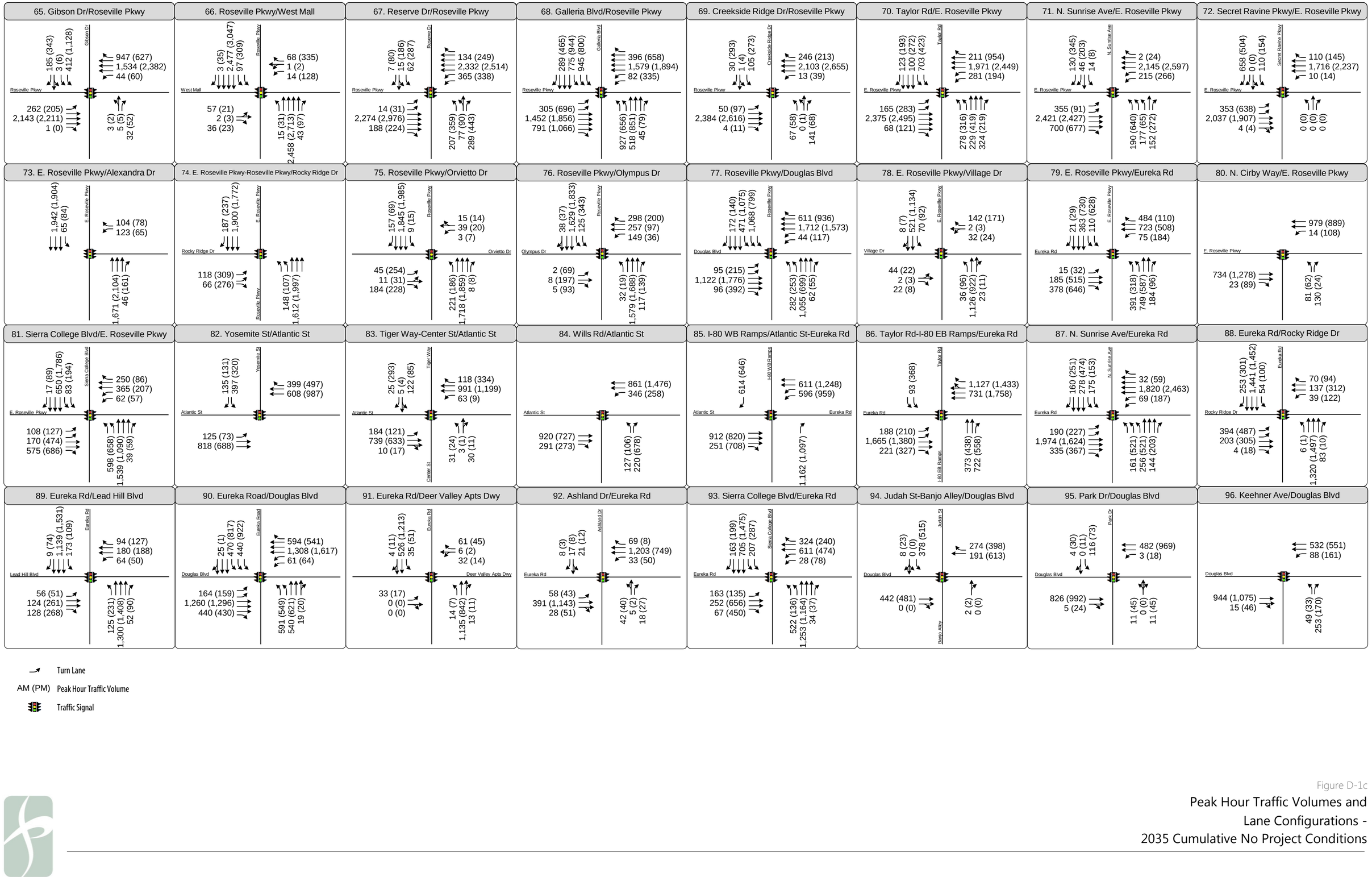


Figure D-1c

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative No Project Conditions

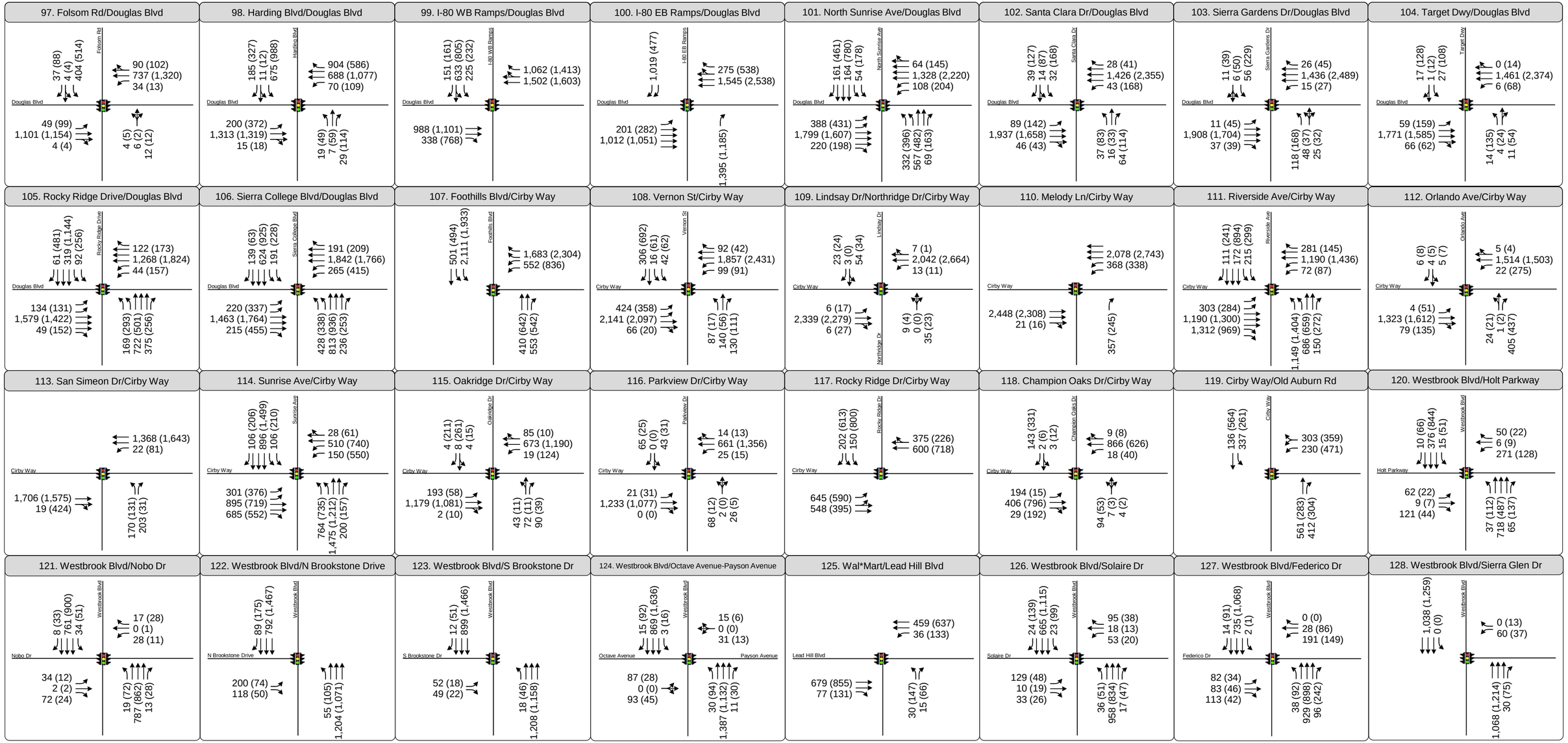


Figure D-1d

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative No Project Conditions

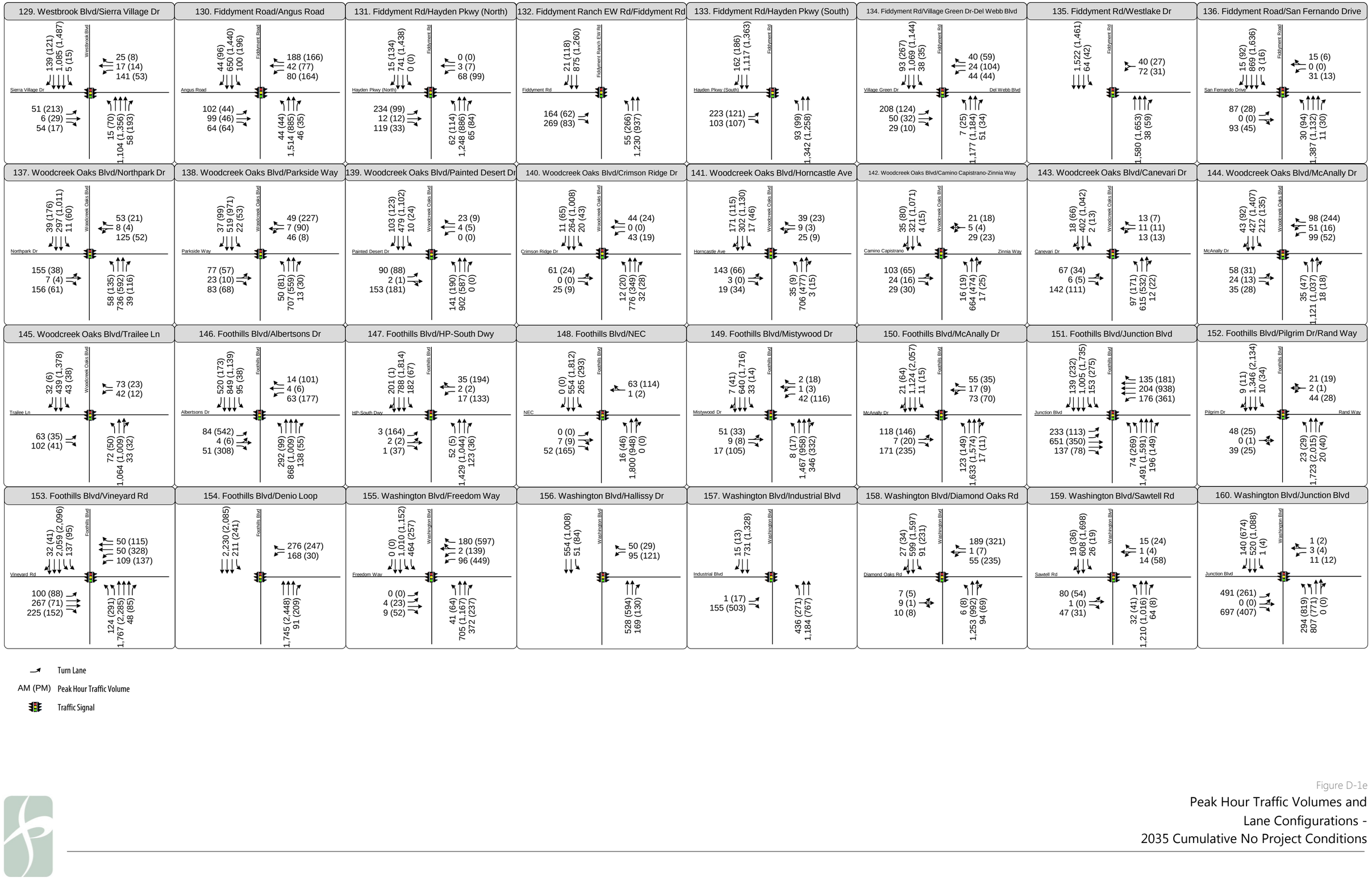
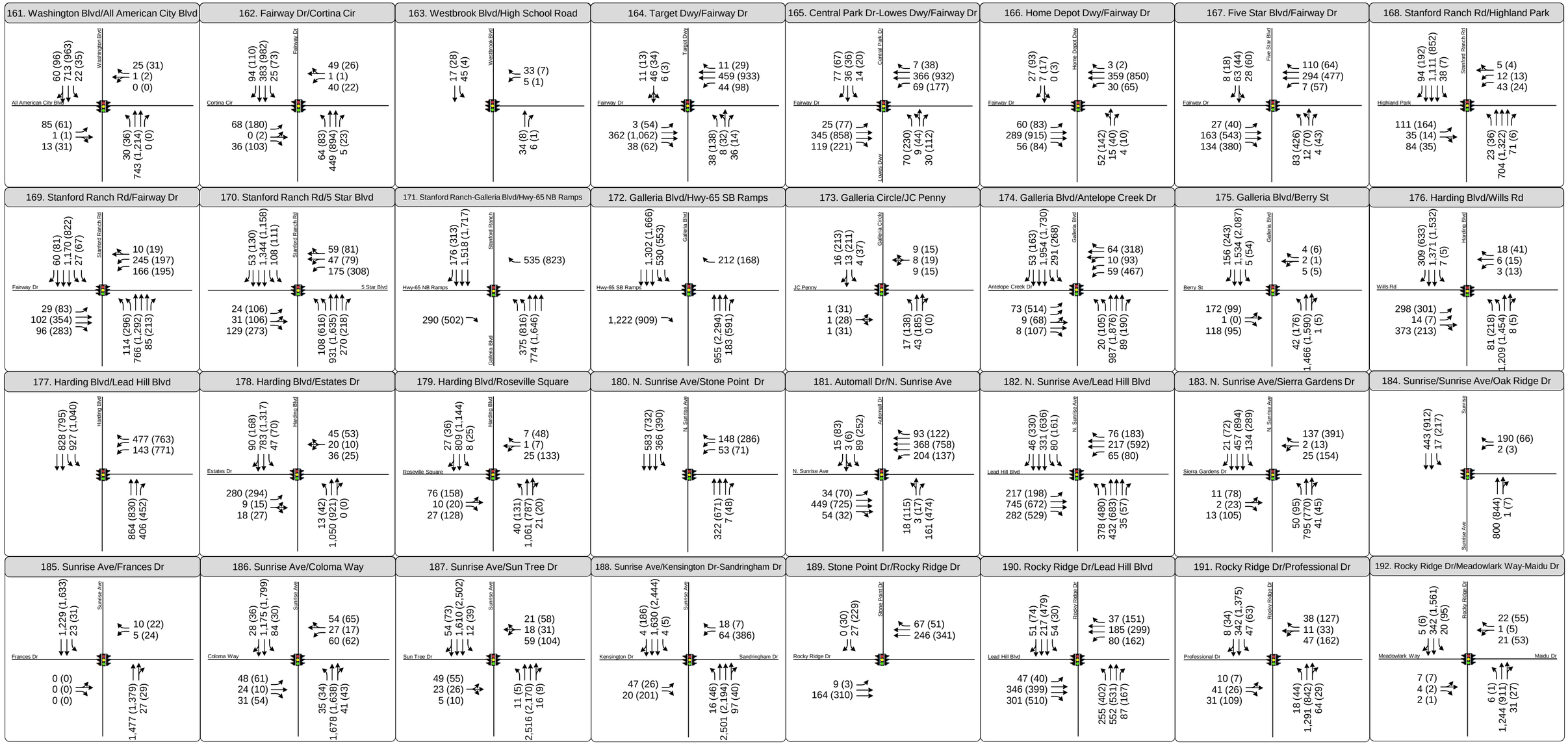


Figure D-1e

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative No Project Conditions



Turn Lane

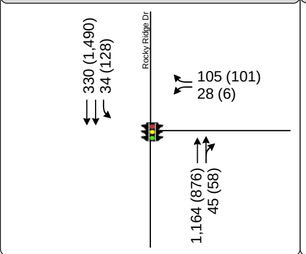
AM (PM) Peak Hour Traffic Volume

Traffic Signal

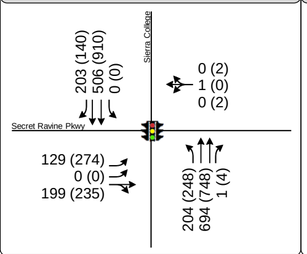
Figure D-1f

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative No Project Conditions

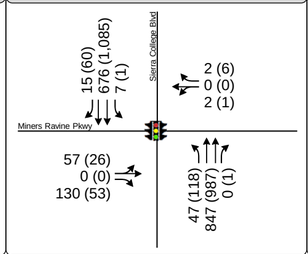
193. Rocky Ridge Dr/McLaren Dr



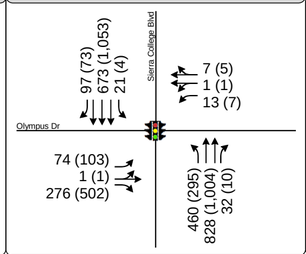
194. Sierra College/Secret Ravine Pkwy



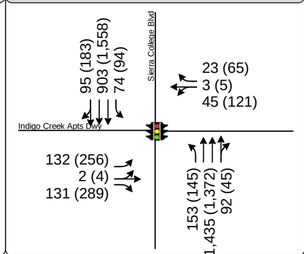
195. Sierra College Blvd/Miners Ravine Pkwy



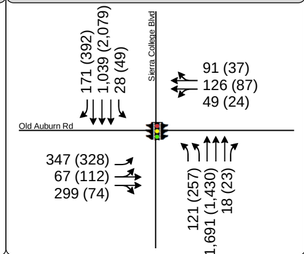
196. Sierra College Blvd/Olympus Dr



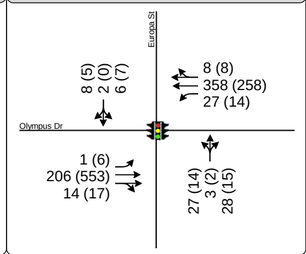
197. Sierra College Blvd/Indigo Creek Apts Dwy



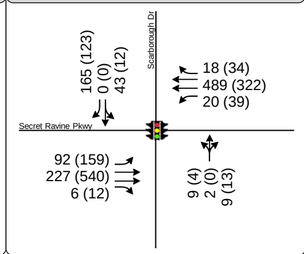
198. Sierra College Blvd/Old Auburn Rd



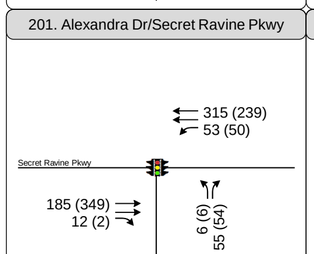
199. Europa St/Olympus Dr



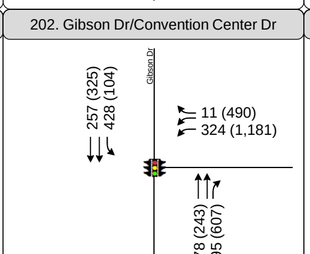
200. Scarborough Dr/Secret Ravine Pkwy



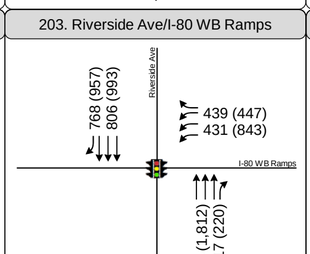
201. Alexandra Dr/Secret Ravine Pkwy



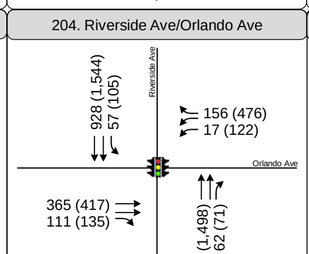
202. Gibson Dr/Convention Center Dr



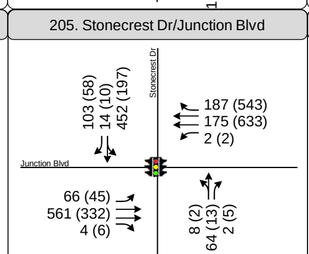
203. Riverside Ave/I-80 WB Ramps



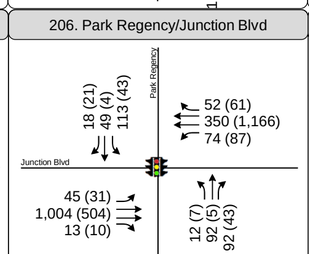
204. Riverside Ave/Orlando Ave



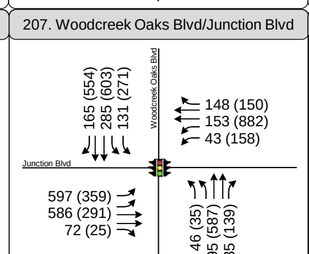
205. Stonecrest Dr/Junction Blvd



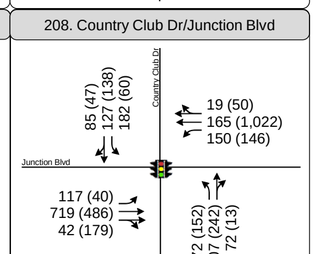
206. Park Regency/Junction Blvd



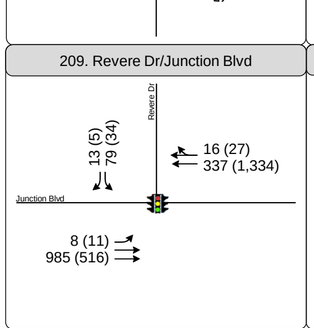
207. Woodcreek Oaks Blvd/Junction Blvd



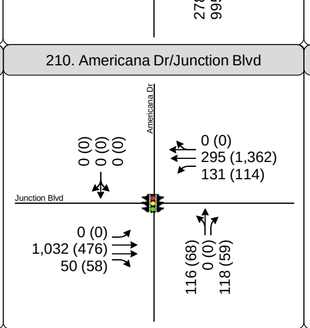
208. Country Club Dr/Junction Blvd



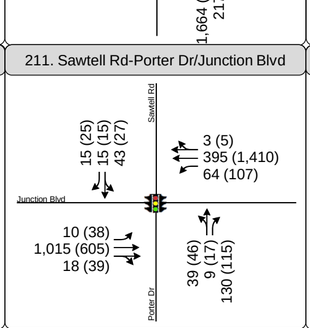
209. Revere Dr/Junction Blvd



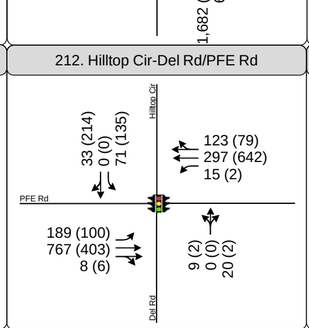
210. Americana Dr/Junction Blvd



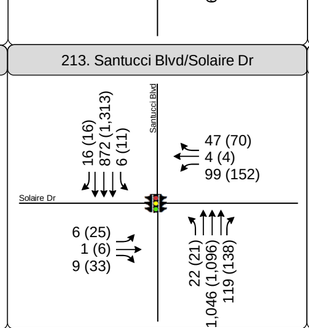
211. Sawtell Rd-Porter Dr/Junction Blvd



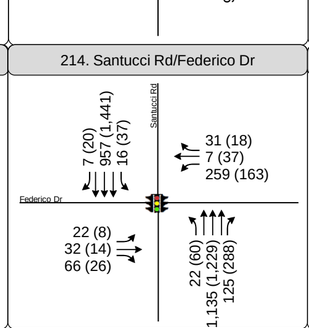
212. Hilltop Cir-Del Rd/PFE Rd



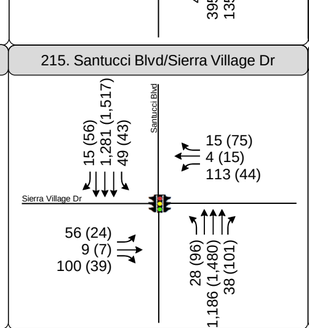
213. Santucci Blvd/Solaire Dr



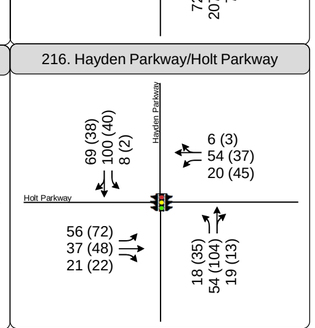
214. Santucci Rd/Federico Dr



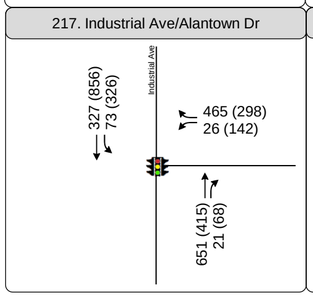
215. Santucci Blvd/Sierra Village Dr



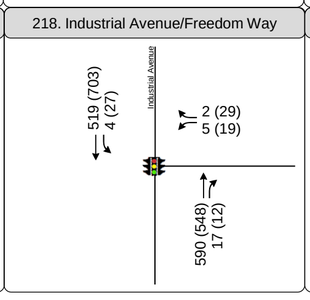
216. Hayden Parkway/Holt Parkway



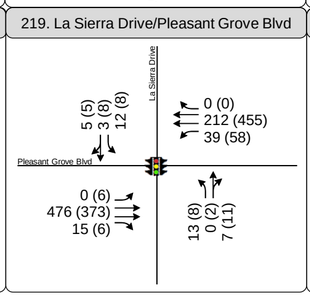
217. Industrial Ave/Alantown Dr



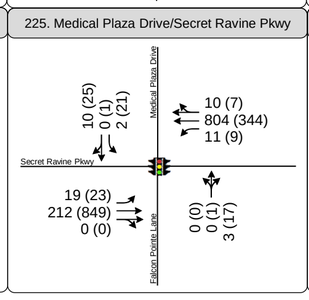
218. Industrial Avenue/Freedom Way



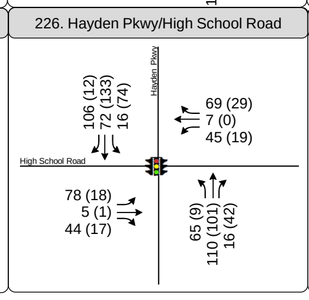
219. La Sierra Drive/Pleasant Grove Blvd



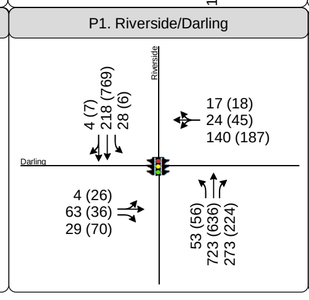
225. Medical Plaza Drive/Secret Ravine Pkwy



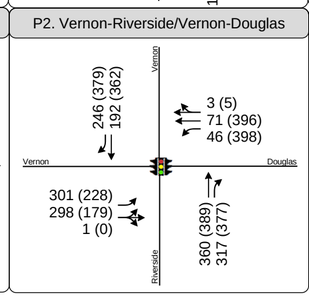
226. Hayden Pkwy/High School Road



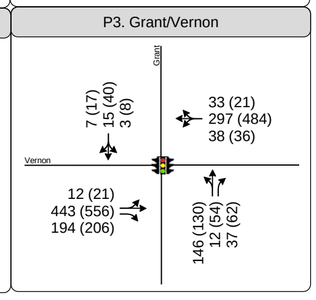
P1. Riverside/Darling



P2. Vernon-Riverside/Vernon-Douglas



P3. Grant/Vernon



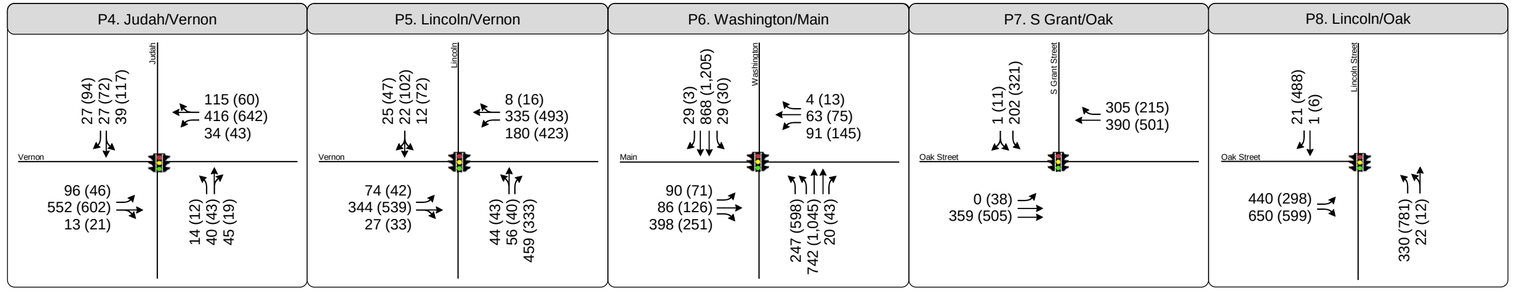
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure D-1g

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative No Project Conditions



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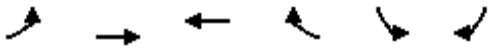
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure D-1h

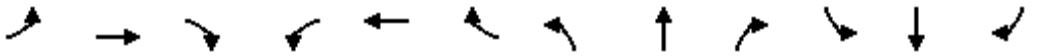
Peak Hour Traffic Volumes and
Lane Configurations -
2035 Cumulative No Project Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	22	391	205	19	91	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1548	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	412	216	20	96	65
RTOR Reduction (vph)	0	0	0	16	0	32
Lane Group Flow (vph)	23	412	216	4	96	33
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	14.7	10.0	10.0	23.7	23.7
Effective Green, g (s)	0.7	14.7	10.0	10.0	23.7	23.7
Actuated g/C Ratio	0.02	0.32	0.22	0.22	0.51	0.51
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	27	1611	1096	334	904	798
v/s Ratio Prot	c0.01	c0.08	0.04		c0.05	
v/s Ratio Perm				0.00		0.02
v/c Ratio	0.85	0.26	0.20	0.01	0.11	0.04
Uniform Delay, d1	22.8	11.8	14.9	14.3	5.9	5.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	110.0	0.1	0.1	0.0	0.2	0.1
Delay (s)	132.8	11.9	15.0	14.3	6.1	5.8
Level of Service	F	B	B	B	A	A
Approach Delay (s)		18.3	14.9		6.0	
Approach LOS		B	B		A	

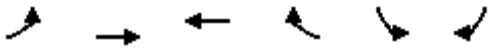
Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	347	52	229	132	85	27	697	612	301	576	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.91	0.88	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	87	365	55	241	139	89	28	734	644	317	606	66
RTOR Reduction (vph)	0	0	45	0	0	69	0	0	380	0	0	31
Lane Group Flow (vph)	87	365	10	241	139	20	28	734	264	317	606	35
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.4	14.5	14.5	8.2	17.3	17.3	1.7	26.3	26.3	17.8	42.4	42.4
Effective Green, g (s)	6.4	16.5	15.5	9.2	19.3	18.3	2.7	28.3	27.3	18.8	44.4	43.4
Actuated g/C Ratio	0.08	0.20	0.19	0.11	0.23	0.22	0.03	0.34	0.33	0.23	0.54	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	137	1013	296	381	1185	350	58	1738	919	402	2727	830
v/s Ratio Prot	0.05	c0.07		c0.07	c0.03		0.02	c0.14		c0.18	0.12	
v/s Ratio Perm			0.01			0.01			0.09			0.02
v/c Ratio	0.64	0.36	0.03	0.63	0.12	0.06	0.48	0.42	0.29	0.79	0.22	0.04
Uniform Delay, d1	37.1	28.6	27.5	35.2	25.0	25.4	39.4	21.0	20.5	30.1	10.1	9.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.3	0.2	0.0	3.4	0.0	0.1	6.2	0.2	0.2	9.9	0.0	0.0
Delay (s)	46.3	28.8	27.6	38.6	25.1	25.5	45.6	21.1	20.7	40.0	10.2	9.6
Level of Service	D	C	C	D	C	C	D	C	C	D	B	A
Approach Delay (s)		31.7			32.1			21.4			19.7	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	82.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	89	1154	472	6	53	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1548	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	94	1215	497	6	56	13
RTOR Reduction (vph)	0	0	0	4	0	8
Lane Group Flow (vph)	94	1215	497	2	56	5
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.5	23.3	14.8	14.8	20.3	20.3
Effective Green, g (s)	4.5	23.3	14.8	14.8	20.3	20.3
Actuated g/C Ratio	0.09	0.45	0.29	0.29	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	154	2296	1458	444	696	615
v/s Ratio Prot	0.05	c0.24	0.10		c0.03	
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.61	0.53	0.34	0.00	0.08	0.01
Uniform Delay, d1	22.7	10.2	14.5	13.1	9.8	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0	0.2	0.1	0.0	0.2	0.0
Delay (s)	29.7	10.4	14.7	13.1	10.0	9.5
Level of Service	C	B	B	B	B	A
Approach Delay (s)		11.8	14.7		9.9	
Approach LOS		B	B		A	

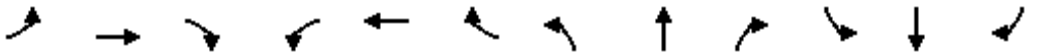
Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	51.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1146	61	1	496	47	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1547	1770	5085	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1547	1770	5085	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1206	64	1	522	49	19
RTOR Reduction (vph)	0	41	0	0	0	11
Lane Group Flow (vph)	1206	23	1	522	49	8
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	19.3	19.3	0.7	24.0	22.2	22.2
Effective Green, g (s)	19.3	19.3	0.7	24.0	22.2	22.2
Actuated g/C Ratio	0.36	0.36	0.01	0.44	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1811	551	23	2252	725	640
v/s Ratio Prot	c0.24		0.00	c0.10	c0.03	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.67	0.04	0.04	0.23	0.07	0.01
Uniform Delay, d1	14.7	11.4	26.4	9.4	9.7	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	0.8	0.1	0.2	0.0
Delay (s)	15.7	11.4	27.2	9.4	9.9	9.5
Level of Service	B	B	C	A	A	A
Approach Delay (s)	15.5			9.5	9.8	
Approach LOS	B			A	A	

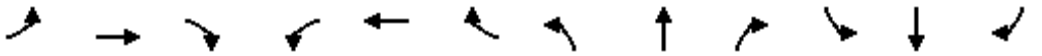
Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	1082	63	105	354	67	73	87	147	300	84	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	1139	66	111	373	71	77	92	155	316	88	105
RTOR Reduction (vph)	0	0	42	0	0	46	0	0	130	0	0	72
Lane Group Flow (vph)	61	1139	24	111	373	25	77	92	25	316	88	33
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	30.1	30.1	7.2	31.3	31.3	6.7	14.0	14.0	20.8	28.1	28.1
Effective Green, g (s)	7.0	32.1	31.1	8.2	33.3	32.3	7.7	15.0	15.0	21.8	29.1	29.1
Actuated g/C Ratio	0.08	0.35	0.34	0.09	0.36	0.35	0.08	0.16	0.16	0.24	0.32	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	135	1772	535	158	1839	555	148	303	258	419	589	500
v/s Ratio Prot	0.03	c0.22		c0.06	0.07		0.04	c0.05		c0.18	0.05	
v/s Ratio Perm			0.02			0.02			0.02			0.02
v/c Ratio	0.45	0.64	0.05	0.70	0.20	0.04	0.52	0.30	0.10	0.75	0.15	0.07
Uniform Delay, d1	40.7	25.2	20.5	40.8	20.3	19.7	40.4	34.0	32.8	32.7	22.6	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.8	0.0	13.2	0.1	0.0	3.3	0.6	0.2	7.5	0.1	0.1
Delay (s)	43.1	26.0	20.6	54.0	20.3	19.8	43.7	34.5	33.0	40.2	22.7	22.1
Level of Service	D	C	C	D	C	B	D	C	C	D	C	C
Approach Delay (s)		26.5			27.0			36.0			33.4	
Approach LOS		C			C			D			C	

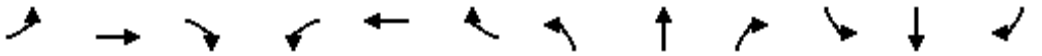
Intersection Summary			
HCM Average Control Delay	29.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	92.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	1197	91	283	371	57	47	1045	532	289	871	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1553	3433	5085	1554	3433	3539	1558	3433	3539	1558
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1553	3433	5085	1554	3433	3539	1558	3433	3539	1558
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	163	1260	96	298	391	60	49	1100	560	304	917	148
RTOR Reduction (vph)	0	0	70	0	0	50	0	0	174	0	0	89
Lane Group Flow (vph)	163	1260	26	298	391	10	49	1100	386	304	917	59
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.1	25.0	25.0	9.0	14.9	14.9	5.4	33.8	33.8	9.0	37.4	37.4
Effective Green, g (s)	20.1	28.0	26.0	10.0	17.9	15.9	6.4	37.2	34.8	10.0	40.8	38.4
Actuated g/C Ratio	0.21	0.29	0.27	0.10	0.18	0.16	0.07	0.38	0.36	0.10	0.42	0.40
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	713	1471	417	355	940	255	227	1360	560	355	1492	618
v/s Ratio Prot	0.05	c0.25		c0.09	0.08		0.01	c0.31		c0.09	0.26	
v/s Ratio Perm			0.02			0.01			0.25			0.04
v/c Ratio	0.23	0.86	0.06	0.84	0.42	0.04	0.22	0.81	0.69	0.86	0.61	0.10
Uniform Delay, d1	31.9	32.5	26.3	42.6	34.8	34.0	42.8	26.6	26.4	42.7	21.9	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	5.4	0.1	15.2	0.4	0.1	0.2	4.1	4.4	17.4	1.0	0.1
Delay (s)	32.0	37.9	26.4	57.8	35.3	34.1	43.0	30.7	30.8	60.1	22.9	18.4
Level of Service	C	D	C	E	D	C	D	C	C	E	C	B
Approach Delay (s)		36.5			44.1			31.1			30.7	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	11.6
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

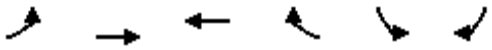


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2006	0	0	695	96	0	0	0	218	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Util. Factor	1.00	0.91			0.91	1.00				1.00		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				1770		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	2112	0	0	732	101	0	0	0	229	0	8
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	0	6
Lane Group Flow (vph)	7	2112	0	0	732	64	0	0	0	229	0	2
Turn Type	Prot		Perm	Perm		Perm				Prot		custom
Protected Phases	7	4			8					6		
Permitted Phases			4	8		8						6
Actuated Green, G (s)	1.1	48.3			43.2	43.2				15.0		15.0
Effective Green, g (s)	2.1	51.3			46.2	46.2				16.0		16.0
Actuated g/C Ratio	0.03	0.70			0.63	0.63				0.22		0.22
Clearance Time (s)	4.0	6.0			6.0	6.0				4.0		4.0
Vehicle Extension (s)	2.0	4.1			4.1	4.1				2.0		2.0
Lane Grp Cap (vph)	51	3559			3205	998				386		346
v/s Ratio Prot	0.00	c0.42			0.14					c0.13		
v/s Ratio Perm						0.04						0.00
v/c Ratio	0.14	0.59			0.23	0.06				0.59		0.01
Uniform Delay, d1	34.7	5.6			5.9	5.2				25.7		22.4
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	0.4	0.3			0.1	0.0				1.6		0.0
Delay (s)	35.2	6.0			5.9	5.3				27.4		22.4
Level of Service	D	A			A	A				C		C
Approach Delay (s)		6.1			5.8			0.0			27.2	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2250	12	69	782	8	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2368	13	73	823	8	133
RTOR Reduction (vph)	0	4	0	0	0	112
Lane Group Flow (vph)	2368	9	73	823	8	21
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	54.1	54.1	7.2	65.3	13.5	13.5
Effective Green, g (s)	57.1	57.1	8.2	68.3	14.5	14.5
Actuated g/C Ratio	0.64	0.64	0.09	0.76	0.16	0.16
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	3237	1008	162	3872	286	256
v/s Ratio Prot	c0.47		c0.04	0.16	0.00	
v/s Ratio Perm		0.01				c0.01
v/c Ratio	0.73	0.01	0.45	0.21	0.03	0.08
Uniform Delay, d1	11.1	6.0	38.6	3.0	31.7	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	0.7	0.0	0.0	0.1
Delay (s)	12.0	6.0	39.3	3.1	31.7	32.0
Level of Service	B	A	D	A	C	C
Approach Delay (s)	12.0			6.0	32.0	
Approach LOS	B			A	C	

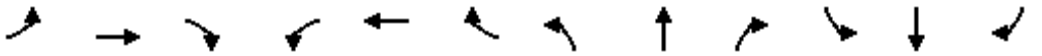
Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	9.9
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	25	2321	764	133	299	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1537	1770	1558
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1537	1770	1558
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	2443	804	140	315	49
RTOR Reduction (vph)	0	0	0	57	0	37
Lane Group Flow (vph)	26	2443	804	83	315	12
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.2	50.6	44.4	44.4	18.7	18.7
Effective Green, g (s)	3.2	53.6	47.4	47.4	19.7	19.7
Actuated g/C Ratio	0.04	0.67	0.59	0.59	0.25	0.25
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	71	3398	3005	908	435	383
v/s Ratio Prot	0.01	c0.48	0.16		c0.18	
v/s Ratio Perm				0.05		0.01
v/c Ratio	0.37	0.72	0.27	0.09	0.72	0.03
Uniform Delay, d1	37.5	8.5	8.0	7.1	27.8	23.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.8	0.1	0.1	5.0	0.0
Delay (s)	38.7	9.3	8.0	7.2	32.8	23.0
Level of Service	D	A	A	A	C	C
Approach Delay (s)		9.6	7.9		31.5	
Approach LOS		A	A		C	

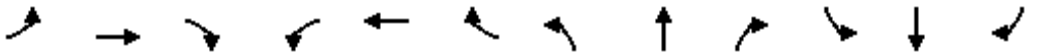
Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.2	Sum of lost time (s)	6.9
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



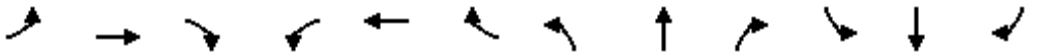
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	2426	35	29	801	158	37	16	18	228	18	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.6	3.6	3.6	3.9	3.9	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.96	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1681	1736	1583	1681	1673	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.96	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1681	1736	1583	1681	1673	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	163	2554	37	31	843	166	39	17	19	240	19	19
RTOR Reduction (vph)	0	0	8	0	0	77	0	0	17	0	5	0
Lane Group Flow (vph)	163	2554	29	31	843	89	28	28	2	139	134	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	15.1	74.1	74.1	4.8	63.8	63.8	9.6	9.6	9.6	17.0	17.0	
Effective Green, g (s)	16.1	77.1	77.1	5.8	66.8	66.8	10.6	10.6	10.6	18.0	18.0	
Actuated g/C Ratio	0.13	0.62	0.62	0.05	0.53	0.53	0.08	0.08	0.08	0.14	0.14	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.6	4.6	4.6	4.9	4.9	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	4.5	4.5	4.5	3.1	3.1	
Lane Grp Cap (vph)	228	3136	976	82	2717	846	143	147	134	242	241	
v/s Ratio Prot	c0.09	c0.50		0.02	0.17		c0.02	0.02		c0.08	0.08	
v/s Ratio Perm			0.02			0.06			0.00			
v/c Ratio	0.71	0.81	0.03	0.38	0.31	0.10	0.20	0.19	0.01	0.57	0.56	
Uniform Delay, d1	52.2	18.4	9.4	57.8	16.2	14.4	53.2	53.2	52.4	49.9	49.8	
Progression Factor	1.00	1.00	1.00	1.24	0.09	0.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.5	2.4	0.1	1.0	0.3	0.2	1.2	1.1	0.1	3.3	2.8	
Delay (s)	60.8	20.9	9.4	72.7	1.7	0.3	54.4	54.3	52.5	53.3	52.6	
Level of Service	E	C	A	E	A	A	D	D	D	D	D	
Approach Delay (s)		23.1			3.6			53.9			52.9	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



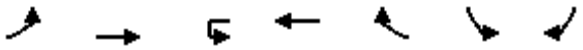
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	2373	167	124	825	341	118	476	381	305	187	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.7	4.7	3.0	2.7	2.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	2498	176	131	868	359	124	501	401	321	197	76
RTOR Reduction (vph)	0	0	83	0	0	171	0	0	141	0	0	66
Lane Group Flow (vph)	52	2498	93	131	868	188	124	501	260	321	197	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.6	62.8	62.8	9.4	62.6	62.6	19.5	21.1	21.1	12.0	13.6	13.6
Effective Green, g (s)	10.6	65.8	65.8	10.4	65.6	65.6	20.5	24.1	22.1	13.0	16.6	16.6
Actuated g/C Ratio	0.08	0.53	0.53	0.08	0.52	0.52	0.16	0.19	0.18	0.10	0.13	0.13
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.8	3.8	2.0	3.8	3.8
Lane Grp Cap (vph)	291	2677	833	286	2669	831	563	682	280	357	470	210
v/s Ratio Prot	0.02	c0.49		c0.04	0.17		0.04	0.14		c0.09	c0.06	
v/s Ratio Perm			0.06			0.12			c0.16			0.01
v/c Ratio	0.18	0.93	0.11	0.46	0.33	0.23	0.22	0.73	0.93	0.90	0.42	0.05
Uniform Delay, d1	53.2	27.6	14.9	54.6	17.0	16.0	45.3	47.4	50.7	55.4	49.8	47.3
Progression Factor	0.62	0.49	0.12	0.70	0.97	6.84	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	5.1	0.2	0.4	0.3	0.6	0.1	4.3	35.5	23.7	0.8	0.1
Delay (s)	33.1	18.7	1.9	38.4	16.8	110.2	45.4	51.8	86.2	79.0	50.6	47.4
Level of Service	C	B	A	D	B	F	D	D	F	E	D	D
Approach Delay (s)		17.9			43.6			64.4			65.5	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM Average Control Delay	37.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



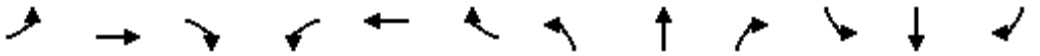
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2613	315	7	1306	66	10	3	66	12	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86	1.00	1.00	0.86	1.00	0.95	0.95	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)		6408	1583	1770	6408	1583	1681	1720	1583	1770	1863	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)		6408	1583	1770	6408	1583	1681	1720	1583	1770	1863	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2751	332	7	1375	69	11	3	69	13	2	0
RTOR Reduction (vph)	0	0	59	0	0	17	0	0	62	0	0	0
Lane Group Flow (vph)	0	2751	273	7	1375	52	7	7	7	13	2	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		87.7	87.7	0.8	93.5	93.5	12.5	12.5	12.5	4.0	4.0	
Effective Green, g (s)		89.7	88.7	1.8	95.5	94.5	13.5	13.5	13.5	5.0	5.0	
Actuated g/C Ratio		0.72	0.71	0.01	0.76	0.76	0.11	0.11	0.11	0.04	0.04	
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		4598	1123	25	4896	1197	182	186	171	71	75	
v/s Ratio Prot		c0.43		0.00	c0.21		0.00	0.00		c0.01	0.00	
v/s Ratio Perm			0.17			0.03			c0.00			
v/c Ratio		0.60	0.24	0.28	0.28	0.04	0.04	0.04	0.04	0.18	0.03	
Uniform Delay, d1		8.7	6.4	61.0	4.4	3.8	49.9	49.9	50.0	58.0	57.7	
Progression Factor		1.40	1.68	1.32	0.06	0.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.2	5.9	0.0	0.0	0.1	0.1	0.1	1.2	0.1	
Delay (s)		12.5	10.9	86.3	0.3	0.0	50.0	50.0	50.1	59.3	57.8	
Level of Service		B	B	F	A	A	D	D	D	E	E	
Approach Delay (s)		12.3			0.7			50.1			59.1	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



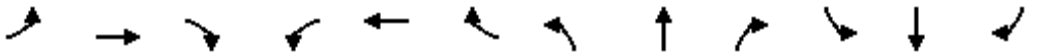
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	16	2675	0	1350	29	118	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6		2.6	2.6	3.9	3.9
Lane Util. Factor	1.00	0.86		0.86	1.00	0.97	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	6408		6408	1583	3433	1583
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	6408		6408	1583	3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	2816	0	1421	31	124	31
RTOR Reduction (vph)	0	0	0	0	9	0	27
Lane Group Flow (vph)	17	2816	0	1421	22	124	4
Turn Type	Prot		Perm		Perm		Perm
Protected Phases	7	4		8		6	
Permitted Phases			8		8		6
Actuated Green, G (s)	10.5	100.5		86.0	86.0	13.6	13.6
Effective Green, g (s)	11.5	103.9		89.4	89.4	14.6	14.6
Actuated g/C Ratio	0.09	0.83		0.72	0.72	0.12	0.12
Clearance Time (s)	4.0	6.0		6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.8		4.8	4.8	2.0	2.0
Lane Grp Cap (vph)	163	5326		4583	1132	401	185
v/s Ratio Prot	0.01	c0.44		0.22		c0.04	
v/s Ratio Perm					0.01		0.00
v/c Ratio	0.10	0.53		0.31	0.02	0.31	0.02
Uniform Delay, d1	52.0	3.2		6.5	5.1	50.6	48.9
Progression Factor	0.80	1.49		0.55	0.24	1.00	1.00
Incremental Delay, d2	0.1	0.3		0.1	0.0	0.2	0.0
Delay (s)	41.9	5.0		3.6	1.3	50.7	48.9
Level of Service	D	A		A	A	D	D
Approach Delay (s)		5.3		3.6		50.4	
Approach LOS		A		A		D	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	2743	20	120	1379	100	10	9	20	10	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.86	1.00	1.00	0.86	1.00	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1770	6408	1583	1770	6408	1583	1770	1863	1583		1725	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1770	6408	1583	1770	6408	1583	1770	1863	1583		1725	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	2887	21	126	1452	105	11	9	21	11	0	5
RTOR Reduction (vph)	0	0	6	0	0	38	0	0	17	0	5	0
Lane Group Flow (vph)	32	2887	15	126	1452	67	11	9	4	0	11	0
Turn Type	Prot		Perm	Prot		Perm	Split		pm+ov	Split		
Protected Phases	7	4		3	8		6	6	3	2	2	
Permitted Phases			4			8			6			
Actuated Green, G (s)	6.1	70.9	70.9	14.6	79.4	79.4	10.0	10.0	24.6		10.0	
Effective Green, g (s)	6.1	70.9	70.9	14.6	79.4	79.4	10.0	10.0	24.6		10.0	
Actuated g/C Ratio	0.05	0.57	0.57	0.12	0.64	0.64	0.08	0.08	0.20		0.08	
Clearance Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	86	3635	898	207	4070	1006	142	149	369		138	
v/s Ratio Prot	0.02	c0.45		c0.07	0.23		c0.01	0.00	0.00		c0.01	
v/s Ratio Perm			0.01			0.04			0.00			
v/c Ratio	0.37	0.79	0.02	0.61	0.36	0.07	0.08	0.06	0.01		0.08	
Uniform Delay, d1	57.6	21.3	11.8	52.5	10.8	8.7	53.2	53.2	40.4		53.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	2.7	1.9	0.0	5.0	0.2	0.1	0.2	0.2	0.0		0.3	
Delay (s)	60.3	23.2	11.9	57.5	11.0	8.8	53.5	53.3	40.4		53.5	
Level of Service	E	C	B	E	B	A	D	D	D		D	
Approach Delay (s)		23.5			14.3			46.8			53.5	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

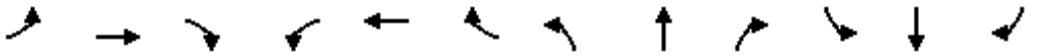


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	273	2129	580	313	1270	483	286	486	200	447	589	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6	2.6	3.0	2.6	2.6	3.0	2.6	3.0	3.0	1.9	1.9
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.94	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	4990	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	4990	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	287	2241	611	329	1337	508	301	512	211	471	620	45
RTOR Reduction (vph)	0	0	171	0	0	249	0	0	0	0	0	33
Lane Group Flow (vph)	287	2241	440	329	1337	259	301	512	211	471	620	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			2
Actuated Green, G (s)	13.6	50.7	50.7	15.0	52.1	52.1	11.3	19.6	125.0	19.7	28.7	28.7
Effective Green, g (s)	14.6	54.1	54.1	16.0	55.5	55.5	12.3	23.0	125.0	20.7	32.1	32.1
Actuated g/C Ratio	0.12	0.43	0.43	0.13	0.44	0.44	0.10	0.18	1.00	0.17	0.26	0.26
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.4		2.0	6.0	6.0
Lane Grp Cap (vph)	401	2773	685	439	2845	703	491	651	1583	569	1306	407
v/s Ratio Prot	0.08	c0.35		c0.10	0.21		0.06	c0.14		c0.14	0.12	
v/s Ratio Perm			0.28			0.16			0.13			0.01
v/c Ratio	0.72	0.81	0.64	0.75	0.47	0.37	0.61	0.79	0.13	0.83	0.47	0.03
Uniform Delay, d1	53.2	30.9	27.9	52.6	24.4	23.1	54.1	48.7	0.0	50.4	39.3	34.8
Progression Factor	0.79	0.79	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	2.4	4.1	6.1	0.6	1.5	1.6	6.4	0.2	9.2	0.8	0.1
Delay (s)	46.7	26.9	28.4	58.6	25.0	24.6	55.7	55.0	0.2	59.6	40.1	34.9
Level of Service	D	C	C	E	C	C	E	E	A	E	D	C
Approach Delay (s)		29.0			30.0			43.9			48.0	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	34.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

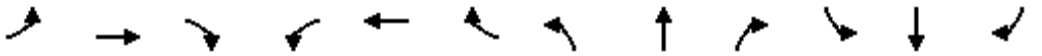
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1422	60	115	1634	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	4.0		5.0
Lane Util. Factor	0.86	1.00	1.00	0.91		1.00
Frt	1.00	0.85	1.00	1.00		0.86
Flt Protected	1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)	6408	1583	1770	5085		1611
Flt Permitted	1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)	6408	1583	1770	5085		1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1497	63	121	1720	0	25
RTOR Reduction (vph)	0	12	0	0	0	22
Lane Group Flow (vph)	1497	51	121	1720	0	3
Turn Type		Perm	Prot			Over
Protected Phases	4		3	Free		3
Permitted Phases		4				
Actuated Green, G (s)	101.1	101.1	13.9	125.0		13.9
Effective Green, g (s)	101.1	101.1	13.9	125.0		13.9
Actuated g/C Ratio	0.81	0.81	0.11	1.00		0.11
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	5183	1280	197	5085		179
v/s Ratio Prot	0.23		c0.07	0.34		0.00
v/s Ratio Perm		0.03				
v/c Ratio	0.29	0.04	0.61	0.34		0.02
Uniform Delay, d1	3.0	2.4	53.0	0.0		49.5
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.0	0.0	5.6	0.2		0.0
Delay (s)	3.0	2.4	58.6	0.2		49.5
Level of Service	A	A	E	A		D
Approach Delay (s)	3.0			4.0	49.5	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	5.0
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1001	445	503	935	399	472	0	413	19	526	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	6.0	2.0	4.0	2.0	4.0		4.0	6.0	4.0	2.0
Lane Util. Factor		0.86	1.00	0.97	0.91	1.00	0.97		0.88	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		6408	1583	3433	5085	1583	3433		2787	1770	3539	1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		6408	1583	3433	5085	1583	3433		2787	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1054	468	529	984	420	497	0	435	20	554	360
RTOR Reduction (vph)	0	0	258	0	0	0	0	0	261	0	0	0
Lane Group Flow (vph)	0	1054	210	529	984	420	497	0	174	20	554	360
Turn Type			Prot	Prot		Free	Prot		custom	Split		Free
Protected Phases		4	4	3	8		2		2 3	1	1	
Permitted Phases						Free						Free
Actuated Green, G (s)		38.4	38.4	21.5	63.9	125.0	20.6		48.1	22.5	22.5	125.0
Effective Green, g (s)		40.4	38.4	23.5	65.9	125.0	22.6		50.1	22.5	24.5	125.0
Actuated g/C Ratio		0.32	0.31	0.19	0.53	1.00	0.18		0.40	0.18	0.20	1.00
Clearance Time (s)		6.0	6.0	4.0	6.0		6.0			6.0	6.0	
Vehicle Extension (s)		4.8	4.8	2.0	4.8		2.0			4.7	4.7	
Lane Grp Cap (vph)		2071	486	645	2681	1583	621		1117	319	694	1583
v/s Ratio Prot		c0.16	0.13	c0.15	0.19		c0.14		0.06	0.01	c0.16	
v/s Ratio Perm						0.27						0.23
v/c Ratio		0.51	0.43	0.82	0.37	0.27	0.80		0.16	0.06	0.80	0.23
Uniform Delay, d1		34.3	34.6	48.7	17.3	0.0	49.0		23.9	42.5	47.9	0.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4	1.2	7.8	0.4	0.4	6.9		0.0	0.2	7.2	0.3
Delay (s)		34.6	35.8	56.6	17.7	0.4	55.9		24.0	42.7	55.1	0.3
Level of Service		C	D	E	B	A	E		C	D	E	A
Approach Delay (s)		35.0			24.6			41.0			33.7	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

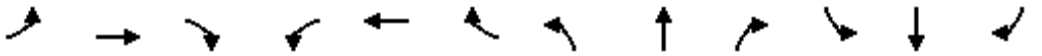


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	419	571	5	197	22	363	735	2	68	319	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	441	601	5	207	23	382	774	2	72	336	0
RTOR Reduction (vph)	0	0	387	0	0	15	0	0	1	0	0	0
Lane Group Flow (vph)	0	441	214	5	207	8	382	774	1	72	336	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		19.4	19.4	0.5	24.9	24.9	13.0	24.6	24.6	6.3	17.9	
Effective Green, g (s)		21.4	20.4	1.5	26.9	25.9	14.0	26.6	25.6	7.3	19.9	
Actuated g/C Ratio		0.30	0.29	0.02	0.38	0.37	0.20	0.38	0.36	0.10	0.28	
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1070	456	38	1345	579	679	1330	572	183	995	
v/s Ratio Prot		0.12		0.00	c0.06		c0.11	c0.22		0.04	0.09	
v/s Ratio Perm			c0.13			0.01			0.00			
v/c Ratio		0.41	0.47	0.13	0.15	0.01	0.56	0.58	0.00	0.39	0.34	
Uniform Delay, d1		19.7	20.7	34.0	14.5	14.3	25.6	17.7	14.4	29.7	20.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	0.8	1.6	0.1	0.0	1.1	0.7	0.0	1.4	0.2	
Delay (s)		19.9	21.5	35.6	14.5	14.3	26.7	18.3	14.4	31.1	20.4	
Level of Service		B	C	D	B	B	C	B	B	C	C	
Approach Delay (s)		20.8			14.9			21.1			22.3	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

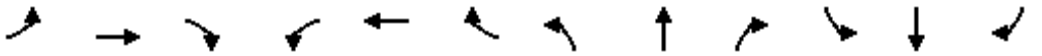
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	476	15	40	212	13	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3539	1583	1770	3539	1770	
Flt Permitted	1.00	1.00	0.47	1.00	0.95	
Satd. Flow (perm)	3539	1583	872	3539	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	501	16	42	223	14	0
RTOR Reduction (vph)	0	10	0	0	0	0
Lane Group Flow (vph)	501	6	42	223	14	0
Turn Type		Perm	Perm			custom
Protected Phases	4			8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	10.1	10.1	10.1	10.1	7.7	
Effective Green, g (s)	10.1	10.1	10.1	10.1	7.7	
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.28	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1286	575	317	1286	490	
v/s Ratio Prot	c0.14			0.06		
v/s Ratio Perm		0.00	0.05		c0.01	
v/c Ratio	0.39	0.01	0.13	0.17	0.03	
Uniform Delay, d1	6.6	5.7	5.9	6.0	7.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.0	0.2	0.1	0.0	
Delay (s)	6.8	5.7	6.1	6.1	7.3	
Level of Service	A	A	A	A	A	
Approach Delay (s)	6.7			6.1	7.3	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	27.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



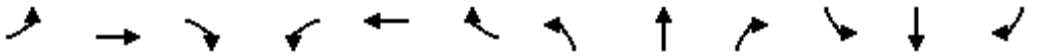
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	147	468	8	33	218	189	17	1092	73	240	672	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	155	493	8	35	229	199	18	1149	77	253	707	85
RTOR Reduction (vph)	0	0	6	0	0	165	0	0	33	0	0	42
Lane Group Flow (vph)	155	493	2	35	229	34	18	1149	44	253	707	43
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.3	22.3	22.3	3.9	16.9	16.9	2.3	40.8	40.8	10.7	49.2	49.2
Effective Green, g (s)	9.3	22.3	22.3	3.9	16.9	16.9	2.3	40.8	40.8	10.7	49.2	49.2
Actuated g/C Ratio	0.10	0.23	0.23	0.04	0.17	0.17	0.02	0.42	0.42	0.11	0.50	0.50
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	327	1161	361	137	612	274	81	1478	661	376	2561	797
v/s Ratio Prot	c0.05	c0.10		0.01	0.06		0.01	c0.32		c0.07	0.14	
v/s Ratio Perm			0.00			0.02			0.03			0.03
v/c Ratio	0.47	0.42	0.01	0.26	0.37	0.13	0.22	0.78	0.07	0.67	0.28	0.05
Uniform Delay, d1	41.9	32.2	29.1	45.5	35.7	34.2	46.8	24.5	17.0	41.8	14.0	12.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.3	0.0	1.0	0.4	0.2	1.4	2.6	0.0	4.7	0.1	0.0
Delay (s)	43.0	32.5	29.1	46.5	36.1	34.4	48.2	27.2	17.1	46.5	14.0	12.4
Level of Service	D	C	C	D	D	C	D	C	B	D	B	B
Approach Delay (s)		34.9			36.1			26.9			21.8	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



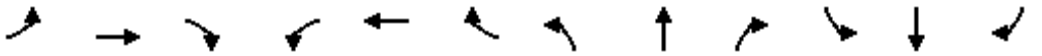
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	777	4	19	427	9	12	6	86	34	8	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	1770	1601		1770	1732	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	1770	1601		1770	1732	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	818	4	20	449	9	13	6	91	36	8	7
RTOR Reduction (vph)	0	0	2	0	0	5	0	70	0	0	6	0
Lane Group Flow (vph)	0	818	2	20	449	4	13	27	0	36	9	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		16.9	16.9	0.4	21.3	21.3	8.2	10.2		1.2	3.2	
Effective Green, g (s)		16.9	16.9	0.4	21.3	21.3	8.2	10.2		1.2	3.2	
Actuated g/C Ratio		0.38	0.38	0.01	0.48	0.48	0.18	0.23		0.03	0.07	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1338	598	16	1686	754	325	365		48	124	
v/s Ratio Prot		c0.23		0.01	c0.13		0.01	c0.02		c0.02	0.00	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.61	0.00	1.25	0.27	0.01	0.04	0.07		0.75	0.07	
Uniform Delay, d1		11.2	8.7	22.2	7.0	6.1	15.0	13.5		21.6	19.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.0	314.0	0.1	0.0	0.2	0.1		48.1	0.2	
Delay (s)		12.1	8.7	336.2	7.1	6.1	15.2	13.6		69.7	19.6	
Level of Service		B	A	F	A	A	B	B		E	B	
Approach Delay (s)		12.1			20.9			13.8			54.9	
Approach LOS		B			C			B			D	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	44.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	840	12	99	489	153	26	110	199	25	213	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	3.0	4.7	4.7	4.3	4.3	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	94	884	13	104	515	161	27	116	209	26	224	129
RTOR Reduction (vph)	0	0	9	0	0	116	0	0	169	0	0	102
Lane Group Flow (vph)	94	884	4	104	515	45	27	116	40	26	224	27
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	6.9	18.7	18.7	7.1	18.9	18.9	12.7	12.7	12.7	13.8	13.8	13.8
Effective Green, g (s)	7.9	19.7	19.7	8.1	19.9	19.9	13.7	13.7	13.7	14.8	14.8	14.8
Actuated g/C Ratio	0.11	0.28	0.28	0.11	0.28	0.28	0.19	0.19	0.19	0.21	0.21	0.21
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	5.3	5.3	5.3	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	196	978	437	201	988	442	340	358	304	367	387	329
v/s Ratio Prot	0.05	c0.25		c0.06	0.15		0.02	c0.06		0.01	c0.12	
v/s Ratio Perm			0.00			0.03			0.03			0.02
v/c Ratio	0.48	0.90	0.01	0.52	0.52	0.10	0.08	0.32	0.13	0.07	0.58	0.08
Uniform Delay, d1	29.8	24.9	18.7	29.8	21.7	19.1	23.6	24.8	23.9	22.7	25.4	22.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	11.9	0.0	0.9	0.8	0.2	0.0	0.2	0.1	0.0	1.3	0.0
Delay (s)	30.4	36.8	18.7	30.7	22.5	19.2	23.7	25.0	23.9	22.8	26.8	22.8
Level of Service	C	D	B	C	C	B	C	C	C	C	C	C
Approach Delay (s)		36.0			22.9			24.3			25.1	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

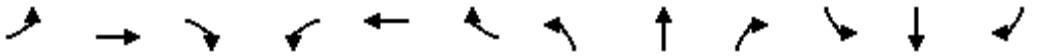


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	1183	7	91	667	42	25	29	18	49	6	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	5.7	4.0	4.7	4.7	4.9	4.9	4.9	3.9	4.9	3.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	1245	7	96	702	44	26	31	19	52	6	13
RTOR Reduction (vph)	0	0	3	0	0	18	0	0	18	0	0	12
Lane Group Flow (vph)	35	1245	4	96	702	26	26	31	1	52	6	1
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	3.6	44.1	44.1	7.0	47.5	47.5	5.0	5.0	5.0	5.5	5.5	5.5
Effective Green, g (s)	4.6	45.1	44.1	7.0	48.5	48.5	5.0	5.0	5.0	6.5	5.5	6.5
Actuated g/C Ratio	0.06	0.56	0.54	0.09	0.60	0.60	0.06	0.06	0.06	0.08	0.07	0.08
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.9	4.9	4.9	4.9	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	100	1968	861	153	2116	947	109	115	98	142	126	127
v/s Ratio Prot	0.02	c0.35		c0.05	c0.20		0.01	c0.02		c0.03	0.00	
v/s Ratio Perm			0.00			0.02			0.00			0.00
v/c Ratio	0.35	0.63	0.00	0.63	0.33	0.03	0.24	0.27	0.01	0.37	0.05	0.01
Uniform Delay, d1	36.8	12.3	8.5	35.8	8.2	6.7	36.2	36.3	35.7	35.3	35.4	34.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.8	0.0	5.7	0.2	0.0	0.4	0.5	0.0	0.6	0.1	0.0
Delay (s)	37.6	13.2	8.5	41.5	8.3	6.7	36.7	36.8	35.7	35.9	35.4	34.3
Level of Service	D	B	A	D	A	A	D	D	D	D	D	C
Approach Delay (s)		13.8			12.0			36.5			35.6	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	22.2
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

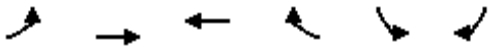
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1242	80	31	507	53	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1307	84	33	534	56	120
RTOR Reduction (vph)	0	40	0	0	0	101
Lane Group Flow (vph)	1307	44	33	534	56	19
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	27.2	27.2	1.2	33.4	8.4	8.4
Effective Green, g (s)	27.2	27.2	1.2	33.4	8.4	8.4
Actuated g/C Ratio	0.53	0.53	0.02	0.64	0.16	0.16
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1858	831	41	2282	287	257
v/s Ratio Prot	c0.37		c0.02	0.15	c0.03	
v/s Ratio Perm		0.03				0.01
v/c Ratio	0.70	0.05	0.80	0.23	0.20	0.08
Uniform Delay, d1	9.3	6.0	25.2	3.8	18.8	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0	69.0	0.1	0.3	0.1
Delay (s)	10.5	6.0	94.2	3.9	19.1	18.5
Level of Service	B	A	F	A	B	B
Approach Delay (s)	10.2			9.2	18.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



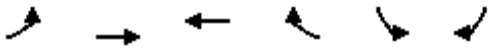
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	691	585	510	387	36	320	1165	861	41	1049	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.94	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	4990	3494		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	4990	3494		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	85	727	616	537	407	38	337	1226	906	43	1104	33
RTOR Reduction (vph)	0	0	158	0	7	0	0	0	220	0	0	22
Lane Group Flow (vph)	85	727	458	537	438	0	337	1226	686	43	1104	11
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	7.8	27.0	27.0	10.0	28.9		12.7	38.4	38.4	4.7	30.4	30.4
Effective Green, g (s)	8.8	29.5	29.5	11.0	31.4		13.7	41.8	41.8	5.7	33.8	33.8
Actuated g/C Ratio	0.09	0.30	0.30	0.11	0.31		0.14	0.42	0.42	0.06	0.34	0.34
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	303	1046	468	550	1099		471	2130	663	196	1722	536
v/s Ratio Prot	0.02	0.21		c0.11	0.13		c0.10	0.24		0.01	0.22	
v/s Ratio Perm			c0.29						c0.43			0.01
v/c Ratio	0.28	0.70	0.98	0.98	0.40		0.72	0.58	1.04	0.22	0.64	0.02
Uniform Delay, d1	42.5	31.2	34.8	44.3	26.8		41.2	22.2	29.0	44.9	27.9	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	2.3	35.7	31.9	0.3		4.3	0.6	44.3	0.2	1.1	0.0
Delay (s)	42.7	33.5	70.5	76.2	27.1		45.5	22.8	73.3	45.1	29.0	22.0
Level of Service	D	C	E	E	C		D	C	E	D	C	C
Approach Delay (s)		50.0			54.0			44.4			29.4	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	44.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	99.8	Sum of lost time (s)	11.8
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



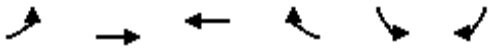
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	7	1544	836	70	110	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	1625	880	74	116	19
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	7	1625	880	74	116	19
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.3	43.1	38.1	62.7	9.6	62.7
Effective Green, g (s)	2.3	46.1	41.1	62.7	11.1	62.7
Actuated g/C Ratio	0.04	0.74	0.66	1.00	0.18	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	65	2602	2320	1583	313	1583
v/s Ratio Prot	0.00	c0.46	0.25		c0.07	
v/s Ratio Perm				0.05		0.01
v/c Ratio	0.11	0.62	0.38	0.05	0.37	0.01
Uniform Delay, d1	29.2	4.1	5.0	0.0	22.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.5	0.2	0.1	0.3	0.0
Delay (s)	29.5	4.6	5.1	0.1	23.0	0.0
Level of Service	C	A	A	A	C	A
Approach Delay (s)		4.7	4.7		19.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	5.5
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	8	1605	881	11	40	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.97	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3532		1737	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3532		1737	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	1689	927	12	42	13
RTOR Reduction (vph)	0	0	1	0	11	0
Lane Group Flow (vph)	8	1689	938	0	44	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.3	47.3	42.0		6.7	
Effective Green, g (s)	2.3	50.0	44.7		7.7	
Actuated g/C Ratio	0.04	0.78	0.70		0.12	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	64	2778	2478		210	
v/s Ratio Prot	0.00	c0.48	0.27		c0.03	
v/s Ratio Perm						
v/c Ratio	0.12	0.61	0.38		0.21	
Uniform Delay, d1	29.7	2.8	3.9		25.2	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.5	0.2		0.2	
Delay (s)	30.0	3.3	4.0		25.4	
Level of Service	C	A	A		C	
Approach Delay (s)		3.4	4.0		25.4	
Approach LOS		A	A		C	

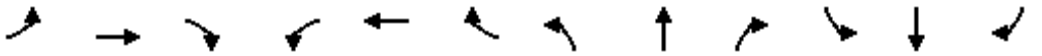
Intersection Summary			
HCM Average Control Delay	4.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	33	1676	883	13	58	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	5.7	3.0	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1527	1770	1549
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1527	1770	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	1764	929	14	61	42
RTOR Reduction (vph)	0	0	0	5	0	36
Lane Group Flow (vph)	35	1764	929	9	61	6
Confl. Peds. (#/hr)				10		10
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.7	46.5	39.8	39.8	8.8	8.8
Effective Green, g (s)	3.7	49.2	42.5	40.8	9.8	9.8
Actuated g/C Ratio	0.06	0.75	0.64	0.62	0.15	0.15
Clearance Time (s)	4.0	6.7	6.7	6.7	4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	4.3	2.0	2.0
Lane Grp Cap (vph)	99	2638	2279	944	263	230
v/s Ratio Prot	0.02	c0.50	0.26		c0.03	
v/s Ratio Perm				0.01		0.00
v/c Ratio	0.35	0.67	0.41	0.01	0.23	0.03
Uniform Delay, d1	30.0	4.3	5.7	4.8	24.8	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.8	0.2	0.0	0.2	0.0
Delay (s)	30.8	5.0	5.9	4.8	24.9	24.0
Level of Service	C	A	A	A	C	C
Approach Delay (s)		5.5	5.8		24.6	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	1390	172	165	748	178	122	486	629	110	347	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	1463	181	174	787	187	128	512	662	116	365	168
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	73	1463	181	174	787	187	128	512	662	116	365	168
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.1	56.5	120.0	11.7	62.1	120.0	8.2	23.9	120.0	8.5	24.2	120.0
Effective Green, g (s)	7.1	59.5	120.0	12.7	65.1	120.0	9.2	26.9	120.0	9.5	27.2	120.0
Actuated g/C Ratio	0.06	0.50	1.00	0.11	0.54	1.00	0.08	0.22	1.00	0.08	0.23	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	183	2269	1400	327	2483	1400	237	714	1400	245	722	1400
v/s Ratio Prot	0.02	c0.32		0.06	0.17		0.04	c0.16		0.04	c0.11	
v/s Ratio Perm			0.13			0.13			c0.47			0.12
v/c Ratio	0.40	0.64	0.13	0.53	0.32	0.13	0.54	0.72	0.47	0.47	0.51	0.12
Uniform Delay, d1	54.4	22.4	0.0	50.8	15.2	0.0	53.4	43.0	0.0	52.9	40.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.4	0.2	0.8	0.1	0.2	1.3	3.9	1.1	0.5	1.0	0.2
Delay (s)	54.9	23.8	0.2	51.7	15.3	0.2	54.7	47.0	1.1	53.4	41.5	0.2
Level of Service	D	C	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		22.7			18.3			24.4			32.9	
Approach LOS		C			B			C			C	

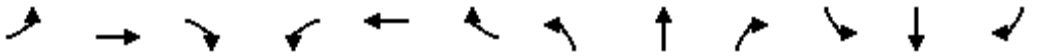
Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.4
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2224	24	128	895	162	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	3.6	3.6
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5075		1770	5085	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5075		1770	5085	1770	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2341	25	135	942	171	298
RTOR Reduction (vph)	1	0	0	0	0	129
Lane Group Flow (vph)	2365	0	135	942	171	169
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	75.4		12.4	91.8	17.6	17.6
Effective Green, g (s)	77.4		12.4	93.8	18.9	18.9
Actuated g/C Ratio	0.65		0.10	0.78	0.16	0.16
Clearance Time (s)	5.7		4.0	5.7	4.9	4.9
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	3273		183	3975	279	243
v/s Ratio Prot	c0.47		c0.08	0.19	0.10	
v/s Ratio Perm						c0.11
v/c Ratio	0.72		0.74	0.24	0.61	0.70
Uniform Delay, d1	14.2		52.2	3.5	47.1	47.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4		12.5	0.1	2.8	6.8
Delay (s)	15.6		64.7	3.7	49.9	54.6
Level of Service	B		E	A	D	D
Approach Delay (s)	15.6			11.3	52.9	
Approach LOS	B			B	D	

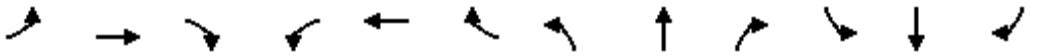
Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



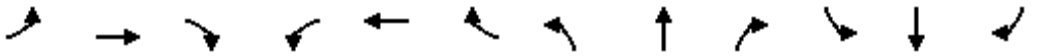
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	495	1838	93	505	800	113	67	1281	555	93	546	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	6.0	5.7	4.0	4.0	6.0	4.0	4.0	6.4	4.0
Lane Util. Factor	0.97	0.91	1.00	0.94	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	521	1935	98	532	842	119	71	1348	584	98	575	124
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	521	1935	98	532	842	119	71	1348	584	98	575	124
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	31.6	64.3	150.0	17.0	50.0	150.0	5.8	42.0	150.0	5.0	40.8	150.0
Effective Green, g (s)	31.6	64.3	150.0	17.0	50.0	150.0	5.8	42.0	150.0	5.0	40.8	150.0
Actuated g/C Ratio	0.21	0.43	1.00	0.11	0.33	1.00	0.04	0.28	1.00	0.03	0.27	1.00
Clearance Time (s)	5.7	5.7		6.0	5.7		4.0	6.0		4.0	6.4	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	3.7	
Lane Grp Cap (vph)	723	2180	1583	566	1695	1583	133	1424	1583	114	1743	1583
v/s Ratio Prot	0.15	c0.38		c0.11	0.17		0.02	c0.27		c0.03	0.09	
v/s Ratio Perm			0.06			0.08			c0.37			0.08
v/c Ratio	0.72	0.89	0.06	0.94	0.50	0.08	0.53	0.95	0.37	0.86	0.33	0.08
Uniform Delay, d1	55.1	39.5	0.0	66.0	39.9	0.0	70.8	52.9	0.0	72.2	43.7	0.0
Progression Factor	1.00	1.00	1.00	0.84	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	5.8	0.1	22.5	1.0	0.1	2.1	13.3	0.7	42.3	0.1	0.1
Delay (s)	58.1	45.4	0.1	78.2	32.5	0.1	72.8	66.2	0.7	114.4	43.8	0.1
Level of Service	E	D	A	E	C	A	E	E	A	F	D	A
Approach Delay (s)		46.2			46.2			47.3			45.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	46.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



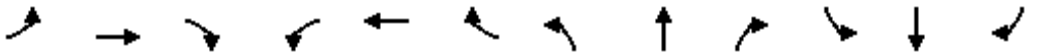
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	2040	88	158	1045	129	128	964	358	78	460	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0	3.4	3.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	2147	93	166	1100	136	135	1015	377	82	484	297
RTOR Reduction (vph)	0	0	28	0	0	0	0	0	0	0	0	175
Lane Group Flow (vph)	105	2147	65	166	1100	136	135	1015	377	82	484	122
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			Free			6
Actuated Green, G (s)	8.9	67.2	67.2	9.6	69.9	150.0	27.4	42.6	150.0	8.2	23.4	23.4
Effective Green, g (s)	9.9	70.2	70.2	13.0	73.3	150.0	28.4	46.0	150.0	9.2	26.4	26.4
Actuated g/C Ratio	0.07	0.47	0.47	0.09	0.49	1.00	0.19	0.31	1.00	0.06	0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1		2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	227	2380	741	298	3131	1583	650	1085	1583	211	895	279
v/s Ratio Prot	0.03	c0.42		c0.05	0.17		0.04	c0.29		0.02	c0.10	
v/s Ratio Perm			0.04			0.09			0.24			0.08
v/c Ratio	0.46	0.90	0.09	0.56	0.35	0.09	0.21	0.94	0.24	0.39	0.54	0.44
Uniform Delay, d1	67.5	36.7	22.1	65.7	23.7	0.0	51.3	50.6	0.0	67.7	56.3	55.2
Progression Factor	1.25	0.34	0.02	1.15	1.36	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	3.9	0.1	1.2	0.1	0.1	0.1	14.6	0.4	0.4	0.9	1.7
Delay (s)	84.6	16.3	0.5	77.0	32.4	0.1	51.4	65.1	0.4	68.1	57.2	56.9
Level of Service	F	B	A	E	C	A	D	E	A	E	E	E
Approach Delay (s)		18.8			34.5			47.9			58.2	
Approach LOS		B			C			D			E	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



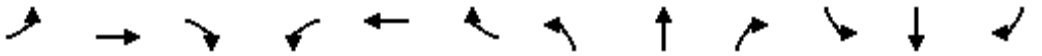
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	2379	20	40	1207	78	46	38	34	91	3	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	2504	21	42	1271	82	48	40	36	96	3	27
RTOR Reduction (vph)	0	0	4	0	0	24	0	0	34	0	0	25
Lane Group Flow (vph)	29	2504	17	42	1271	58	48	40	2	96	3	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.9	103.8	103.8	7.8	106.7	106.7	10.4	8.7	8.7	12.0	9.4	9.4
Effective Green, g (s)	4.9	103.8	103.8	7.8	106.7	106.7	10.4	8.7	8.7	12.0	9.4	9.4
Actuated g/C Ratio	0.03	0.69	0.69	0.05	0.71	0.71	0.07	0.06	0.06	0.08	0.06	0.06
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.5	2.5	2.0	3.1	3.1
Lane Grp Cap (vph)	58	3519	1095	92	3617	1126	123	108	92	142	117	99
v/s Ratio Prot	0.02	c0.49		c0.02	0.25		0.03	c0.02		c0.05	0.00	
v/s Ratio Perm			0.01			0.04			0.00			0.00
v/c Ratio	0.50	0.71	0.02	0.46	0.35	0.05	0.39	0.37	0.02	0.68	0.03	0.02
Uniform Delay, d1	71.3	14.0	7.2	69.0	8.3	6.5	66.8	68.0	66.6	67.1	66.0	66.0
Progression Factor	1.33	0.24	0.04	0.92	0.47	0.89	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.7	0.0	1.1	0.1	0.0	0.7	1.6	0.1	9.6	0.1	0.1
Delay (s)	96.3	4.1	0.3	64.8	4.0	5.8	67.5	69.6	66.7	76.7	66.1	66.0
Level of Service	F	A	A	E	A	A	E	E	E	E	E	E
Approach Delay (s)		5.1			5.9			67.9			74.2	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



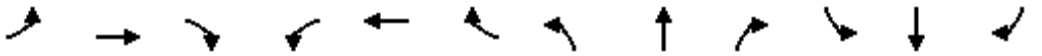
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	1334	1108	1073	837	168	549	1081	486	159	977	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.7	3.0	2.0	4.6	3.0	4.7	-0.4	3.0
Lane Util. Factor	0.94	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4990	3539	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4990	3539	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	1404	1166	1129	881	177	578	1138	512	167	1028	38
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	31	1404	1166	1129	881	177	578	1138	512	167	1028	38
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.4	47.0	150.0	36.0	77.9	150.0	24.0	29.4	150.0	13.9	27.0	150.0
Effective Green, g (s)	6.4	50.0	150.0	37.0	80.9	150.0	25.0	32.8	150.0	14.9	30.4	150.0
Actuated g/C Ratio	0.04	0.33	1.00	0.25	0.54	1.00	0.17	0.22	1.00	0.10	0.20	1.00
Clearance Time (s)	4.0	6.0		4.0	5.7		3.0	8.0		5.7	3.0	
Vehicle Extension (s)	2.0	4.1		3.0	4.5		4.1	4.1		4.1	4.1	
Lane Grp Cap (vph)	213	1180	1583	847	2743	1583	572	1112	1583	341	1031	1583
v/s Ratio Prot	0.01	c0.40		c0.33	0.17		c0.17	c0.22		0.05	0.20	
v/s Ratio Perm			0.74			0.11			0.32			0.02
v/c Ratio	0.15	1.19	0.74	1.33	0.32	0.11	1.01	1.02	0.32	0.49	1.00	0.02
Uniform Delay, d1	69.2	50.0	0.0	56.5	19.3	0.0	62.5	58.6	0.0	64.0	59.8	0.0
Progression Factor	0.62	0.51	1.00	0.75	1.24	1.00	1.53	1.13	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	91.8	2.2	156.6	0.3	0.1	33.3	28.2	0.4	1.6	27.2	0.0
Delay (s)	43.1	117.5	2.2	199.0	24.2	0.1	129.2	94.2	0.4	65.5	86.9	0.0
Level of Service	D	F	A	F	C	A	F	F	A	E	F	A
Approach Delay (s)		65.0			112.5			81.7			81.3	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	84.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	4	155	56	15	49	209	1608	111	319	1820	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	2.0	3.0	3.0	3.0	3.0	2.6		9.0	2.6	2.6
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.86		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	6346		3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	6346		3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	232	4	163	59	16	52	220	1693	117	336	1916	198
RTOR Reduction (vph)	0	0	144	0	0	48	0	5	0	0	0	60
Lane Group Flow (vph)	232	4	19	59	16	4	220	1805	0	336	1916	138
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8						6
Actuated Green, G (s)	15.1	15.1	15.1	9.2	9.2	9.2	14.5	79.9		19.8	92.2	92.2
Effective Green, g (s)	16.1	17.1	17.1	11.2	11.2	11.2	15.5	83.3		21.8	95.6	95.6
Actuated g/C Ratio	0.11	0.11	0.11	0.07	0.07	0.07	0.10	0.56		0.15	0.64	0.64
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	6.0		11.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	368	212	180	256	139	118	355	3524		499	3241	1009
v/s Ratio Prot	c0.07	0.00		c0.02	0.01		c0.06	0.28		0.10	c0.38	
v/s Ratio Perm			0.01			0.00						0.09
v/c Ratio	0.63	0.02	0.10	0.23	0.12	0.03	0.62	0.51		0.67	0.59	0.14
Uniform Delay, d1	64.1	59.0	59.6	65.3	64.8	64.4	64.4	20.7		60.7	15.8	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.30	0.28		0.96	0.88	1.47
Incremental Delay, d2	3.5	0.0	0.3	0.5	0.4	0.1	1.3	0.2		2.9	0.2	0.1
Delay (s)	67.6	59.0	59.8	65.8	65.1	64.5	85.0	6.0		61.2	14.2	15.9
Level of Service	E	E	E	E	E	E	F	A		E	B	B
Approach Delay (s)		64.3			65.2			14.6			20.8	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰↰		↱↱
Volume (vph)	0	1146	10	0	1831	537	0	0	0	128	0	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			0%			0%			0%	
Total Lost time (s)		4.7	5.7		4.7	3.0				4.3		4.3
Lane Util. Factor		0.91	1.00		0.91	1.00				0.97		0.88
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5212	1623		5085	1583				3433		2787
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5212	1623		5085	1583				3433		2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1206	11	0	1927	565	0	0	0	135	0	547
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	15
Lane Group Flow (vph)	0	1206	7	0	1927	565	0	0	0	135	0	532
Turn Type			Perm			Free				Prot		custom
Protected Phases		2			6					4		
Permitted Phases			2			Free						4
Actuated Green, G (s)		46.1	46.1		46.1	75.0				17.9		17.9
Effective Green, g (s)		47.1	46.1		47.1	75.0				18.9		18.9
Actuated g/C Ratio		0.63	0.61		0.63	1.00				0.25		0.25
Clearance Time (s)		5.7	5.7		5.7					5.3		5.3
Vehicle Extension (s)		4.3	4.3		3.9					2.0		2.0
Lane Grp Cap (vph)		3273	998		3193	1583				865		702
v/s Ratio Prot		0.23			c0.38					0.04		
v/s Ratio Perm			0.00			0.36						c0.19
v/c Ratio		0.37	0.01		0.60	0.36				0.16		0.76
Uniform Delay, d1		6.8	5.6		8.4	0.0				21.8		25.9
Progression Factor		0.85	0.64		0.83	1.00				1.00		1.00
Incremental Delay, d2		0.3	0.0		0.3	0.5				0.0		4.2
Delay (s)		6.0	3.6		7.2	0.5				21.9		30.1
Level of Service		A	A		A	A				C		C
Approach Delay (s)		6.0			5.7			0.0			28.5	
Approach LOS		A			A			A			C	

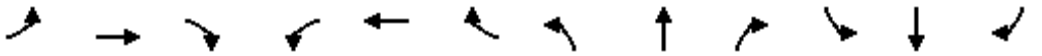
Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	908	366	0	1782	586	407
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	0%	
Total Lost time (s)	4.7	4.7		4.7	6.3	6.3
Lane Util. Factor	0.91	1.00		0.91	0.94	0.88
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	5212	1623		5085	4990	2787
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	5212	1623		5085	4990	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	956	385	0	1876	617	428
RTOR Reduction (vph)	0	134	0	0	0	341
Lane Group Flow (vph)	956	251	0	1876	617	87
Turn Type		Perm				Perm
Protected Phases	2			6	8	
Permitted Phases		2				8
Actuated Green, G (s)	47.8	47.8		47.8	14.2	14.2
Effective Green, g (s)	48.8	48.8		48.8	15.2	15.2
Actuated g/C Ratio	0.65	0.65		0.65	0.20	0.20
Clearance Time (s)	5.7	5.7		5.7	7.3	7.3
Vehicle Extension (s)	3.8	3.8		4.3	2.0	2.0
Lane Grp Cap (vph)	3391	1056		3309	1011	565
v/s Ratio Prot	0.18			c0.37	c0.12	
v/s Ratio Perm		0.15				0.03
v/c Ratio	0.28	0.24		0.57	0.61	0.15
Uniform Delay, d1	5.6	5.4		7.3	27.2	24.6
Progression Factor	0.85	2.36		0.84	1.00	1.00
Incremental Delay, d2	0.1	0.1		0.6	0.8	0.0
Delay (s)	4.8	12.9		6.7	28.0	24.7
Level of Service	A	B		A	C	C
Approach Delay (s)	7.1			6.7	26.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

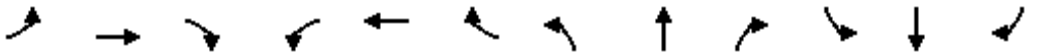
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	130	267	354	215	34	329	626	306	91	1247	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-5%			0%	
Total Lost time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	137	281	373	226	36	346	659	322	96	1313	102
RTOR Reduction (vph)	0	0	234	0	0	28	0	0	97	0	0	48
Lane Group Flow (vph)	65	137	47	373	226	8	346	659	225	96	1313	54
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.3	17.1	17.1	20.6	31.8	31.8	23.0	84.3	104.9	8.6	69.9	69.9
Effective Green, g (s)	6.3	17.1	17.1	20.6	31.8	31.8	23.0	84.3	104.9	8.6	69.9	69.9
Actuated g/C Ratio	0.04	0.11	0.11	0.14	0.21	0.21	0.15	0.56	0.70	0.06	0.47	0.47
Clearance Time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	4.3	4.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	144	403	180	471	750	336	540	2929	1135	197	2370	738
v/s Ratio Prot	0.02	0.04		c0.11	c0.06		c0.10	0.13	0.03	0.03	c0.26	
v/s Ratio Perm			0.03			0.00			0.11			0.03
v/c Ratio	0.45	0.34	0.26	0.79	0.30	0.02	0.64	0.22	0.20	0.49	0.55	0.07
Uniform Delay, d1	70.2	61.2	60.7	62.6	49.7	46.8	59.6	16.5	7.9	68.6	28.8	22.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.93	0.63	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.7	1.0	8.3	0.4	0.0	1.9	0.2	0.0	0.7	0.9	0.2
Delay (s)	71.0	61.9	61.7	70.9	50.1	46.8	57.9	15.5	5.0	69.3	29.8	22.3
Level of Service	E	E	E	E	D	D	E	B	A	E	C	C
Approach Delay (s)		63.0			62.1			24.0			31.8	
Approach LOS		E			E			C			C	

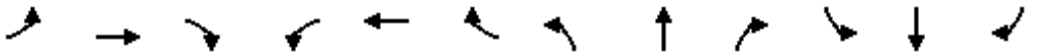
Intersection Summary			
HCM Average Control Delay	37.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



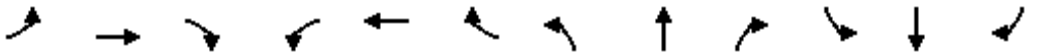
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	18	50	138	12	34	13	478	147	79	1307	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	1491		1593	1492		1593	4577	1425	1593	3185	1425
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1593	1491		1593	1492		1593	4577	1425	1593	3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	19	53	145	13	36	14	503	155	83	1376	3
RTOR Reduction (vph)	0	49	0	0	29	0	0	0	61	0	0	1
Lane Group Flow (vph)	9	23	0	145	20	0	14	503	94	83	1376	2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	0.6	8.4		14.1	21.9		1.9	69.7	69.7	8.8	76.6	76.6
Effective Green, g (s)	1.6	9.9		15.1	23.4		2.9	72.7	72.7	9.8	79.6	79.6
Actuated g/C Ratio	0.01	0.08		0.13	0.19		0.02	0.61	0.61	0.08	0.66	0.66
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	21	123		200	291		38	2773	863	130	2113	945
v/s Ratio Prot	0.01	c0.02		c0.09	0.01		0.01	0.11		c0.05	c0.43	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.43	0.19		0.72	0.07		0.37	0.18	0.11	0.64	0.65	0.00
Uniform Delay, d1	58.7	51.3		50.5	39.4		57.6	10.5	10.0	53.4	12.0	6.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.6		10.5	0.1		2.2	0.1	0.3	7.3	0.9	0.0
Delay (s)	63.8	51.9		61.0	39.5		59.8	10.6	10.2	60.7	12.9	6.8
Level of Service	E	D		E	D		E	B	B	E	B	A
Approach Delay (s)		53.3			55.5			11.6			15.6	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



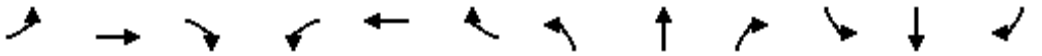
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	8	23	60	3	74	6	1204	47	41	1263	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	8	24	63	3	78	6	1267	49	43	1329	3
RTOR Reduction (vph)	0	0	21	0	0	66	0	0	25	0	0	2
Lane Group Flow (vph)	9	8	3	63	3	12	6	1267	24	43	1329	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	7.2	7.2	2.7	9.1	9.1	0.8	27.8	27.8	2.4	29.4	29.4
Effective Green, g (s)	0.8	7.2	7.2	2.7	9.1	9.1	0.8	27.8	27.8	2.4	29.4	29.4
Actuated g/C Ratio	0.01	0.12	0.12	0.04	0.15	0.15	0.01	0.46	0.46	0.04	0.49	0.49
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	24	424	190	80	536	240	24	2352	732	71	2488	774
v/s Ratio Prot	0.01	0.00		c0.04	0.00		0.00	0.25		c0.02	c0.26	
v/s Ratio Perm			0.00			c0.01			0.02			0.00
v/c Ratio	0.38	0.02	0.02	0.79	0.01	0.05	0.25	0.54	0.03	0.61	0.53	0.00
Uniform Delay, d1	29.4	23.3	23.3	28.4	21.7	21.8	29.4	11.6	8.8	28.4	10.6	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.6	0.0	0.0	38.7	0.0	0.1	5.4	0.2	0.0	13.7	0.2	0.0
Delay (s)	39.0	23.4	23.4	67.1	21.7	21.9	34.8	11.8	8.8	42.1	10.8	7.8
Level of Service	D	C	C	E	C	C	C	B	A	D	B	A
Approach Delay (s)		26.8			41.7			11.8			11.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



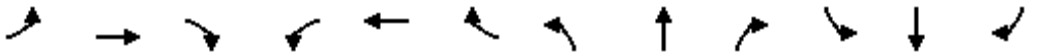
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	116	3	2	82	8	6	1	0	34	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	4.5	4.5	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863		1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	122	3	2	86	8	6	1	0	36	5	1
RTOR Reduction (vph)	0	0	2	0	0	6	0	0	0	0	0	1
Lane Group Flow (vph)	1	122	1	2	86	2	6	1	0	36	5	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	8.4	8.4	0.5	8.9	8.9	0.5	2.5		12.1	14.1	14.1
Effective Green, g (s)	0.5	8.4	8.4	0.5	8.9	8.9	0.5	2.5		12.1	14.1	14.1
Actuated g/C Ratio	0.01	0.19	0.19	0.01	0.20	0.20	0.01	0.06		0.28	0.32	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	4.5	4.5	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	20	683	306	20	724	324	20	107		492	604	513
v/s Ratio Prot	0.00	c0.03		c0.00	0.02		0.00	0.00		c0.02	c0.00	
v/s Ratio Perm			0.00			0.00						0.00
v/c Ratio	0.05	0.18	0.00	0.10	0.12	0.01	0.30	0.01		0.07	0.01	0.00
Uniform Delay, d1	21.3	14.7	14.2	21.3	14.1	13.8	21.3	19.3		11.6	10.0	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	0.0	2.2	0.1	0.0	8.3	0.0		0.1	0.0	0.0
Delay (s)	22.3	14.8	14.2	23.5	14.2	13.8	29.6	19.4		11.6	10.0	9.9
Level of Service	C	B	B	C	B	B	C	B		B	A	A
Approach Delay (s)		14.8			14.3			28.1			11.4	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.09		
Actuated Cycle Length (s)	43.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



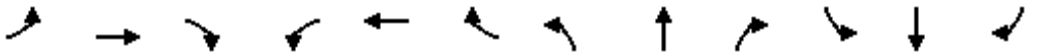
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	120	18	170	54	84	11	953	217	86	1041	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.3	4.3	4.0	3.3	4.3
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	43	126	19	179	57	88	12	1003	228	91	1096	9
RTOR Reduction (vph)	0	0	17	0	0	69	0	0	130	0	0	5
Lane Group Flow (vph)	43	126	2	179	57	19	12	1003	98	91	1096	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.3	9.0	9.0	10.0	15.7	15.7	0.6	31.6	31.6	5.2	36.2	36.2
Effective Green, g (s)	4.3	10.0	10.0	11.0	16.7	16.7	1.6	33.6	32.6	6.2	38.2	37.2
Actuated g/C Ratio	0.06	0.13	0.13	0.14	0.22	0.22	0.02	0.44	0.43	0.08	0.50	0.49
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.5	5.5	2.0	5.5	5.5
Lane Grp Cap (vph)	100	465	208	256	777	347	37	2245	678	144	2553	774
v/s Ratio Prot	0.02	c0.04		c0.10	0.02		0.01	0.20		c0.05	c0.22	
v/s Ratio Perm			0.00			0.01			0.06			0.00
v/c Ratio	0.43	0.27	0.01	0.70	0.07	0.06	0.32	0.45	0.14	0.63	0.43	0.01
Uniform Delay, d1	34.7	29.8	28.8	31.0	23.6	23.5	36.7	14.8	13.3	33.8	12.0	10.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.0	6.6	0.0	0.0	1.9	0.3	0.2	6.5	0.3	0.0
Delay (s)	35.8	29.9	28.8	37.6	23.6	23.5	38.6	15.1	13.5	40.3	12.3	10.0
Level of Service	D	C	C	D	C	C	D	B	B	D	B	A
Approach Delay (s)		31.1			31.3			15.1			14.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



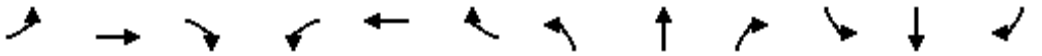
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	452	0	3	273	0	42	0	4	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0		5.0			5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00			1.00
Frt	1.00	1.00		1.00	1.00		1.00		0.85			0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00			1.00
Satd. Flow (prot)	1770	3539		1770	3539		1770		1583			1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00			1.00
Satd. Flow (perm)	1770	3539		1770	3539		1770		1583			1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	476	0	3	287	0	44	0	4	0	0	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	3	0	0	1
Lane Group Flow (vph)	2	476	0	3	287	0	44	0	1	0	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	12.3		0.4	12.3		1.8		15.6			8.8
Effective Green, g (s)	0.4	12.3		0.4	12.3		1.8		15.6			8.8
Actuated g/C Ratio	0.01	0.28		0.01	0.28		0.04		0.36			0.20
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0		5.0			5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0			3.0
Lane Grp Cap (vph)	16	1005		16	1005		74		570			322
v/s Ratio Prot	0.00	c0.13		c0.00	0.08		c0.02					
v/s Ratio Perm									c0.00			0.00
v/c Ratio	0.12	0.47		0.19	0.29		0.59		0.00			0.00
Uniform Delay, d1	21.3	12.8		21.3	12.1		20.4		8.9			13.7
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00			1.00
Incremental Delay, d2	3.5	0.4		5.6	0.2		12.2		0.0			0.0
Delay (s)	24.8	13.2		26.9	12.2		32.6		8.9			13.7
Level of Service	C	B		C	B		C		A			B
Approach Delay (s)		13.2			12.4			30.6			13.7	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	43.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	26.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



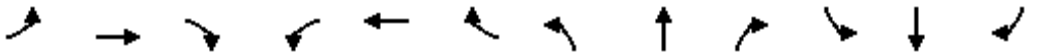
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	478	66	8	181	4	80	35	28	5	102	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	37	503	69	8	191	4	84	37	29	5	107	61
RTOR Reduction (vph)	0	0	51	0	0	3	0	0	19	0	0	44
Lane Group Flow (vph)	37	503	18	8	191	1	84	37	10	5	107	17
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.4	12.6	12.6	0.5	11.7	11.7	3.5	16.1	16.1	0.5	13.1	13.1
Effective Green, g (s)	1.4	12.6	12.6	0.5	11.7	11.7	3.5	16.1	16.1	0.5	13.1	13.1
Actuated g/C Ratio	0.03	0.26	0.26	0.01	0.25	0.25	0.07	0.34	0.34	0.01	0.27	0.27
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	52	935	418	19	868	388	130	629	534	19	512	435
v/s Ratio Prot	c0.02	c0.14		0.00	0.05		c0.05	c0.02		0.00	c0.06	
v/s Ratio Perm			0.01			0.00			0.01			0.01
v/c Ratio	0.71	0.54	0.04	0.42	0.22	0.00	0.65	0.06	0.02	0.26	0.21	0.04
Uniform Delay, d1	22.9	15.1	13.1	23.5	14.4	13.6	21.5	10.7	10.5	23.4	13.3	12.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.8	0.6	0.0	14.4	0.1	0.0	10.5	0.0	0.0	7.3	0.2	0.0
Delay (s)	59.8	15.7	13.1	37.8	14.5	13.6	32.0	10.7	10.5	30.7	13.5	12.7
Level of Service	E	B	B	D	B	B	C	B	B	C	B	B
Approach Delay (s)		18.0			15.4			22.6			13.7	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



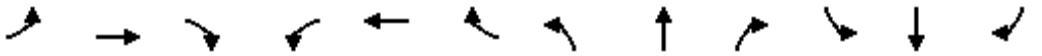
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	615	7	13	195	0	19	3	110	0	2	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539		1770	1863	1583		1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539		1770	1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	647	7	14	205	0	20	3	116	0	2	15
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	79	0	0	12
Lane Group Flow (vph)	14	647	2	14	205	0	20	3	37	0	2	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	14.8	14.8	0.4	14.8		0.5	14.2	14.2		8.7	8.7
Effective Green, g (s)	0.4	14.8	14.8	0.4	14.8		0.5	14.2	14.2		8.7	8.7
Actuated g/C Ratio	0.01	0.33	0.33	0.01	0.33		0.01	0.32	0.32		0.20	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	16	1180	528	16	1180		20	596	506		365	310
v/s Ratio Prot	c0.01	c0.18		0.01	0.06		c0.01	0.00			0.00	
v/s Ratio Perm			0.00						c0.02			0.00
v/c Ratio	0.88	0.55	0.00	0.88	0.17		1.00	0.01	0.07		0.01	0.01
Uniform Delay, d1	22.0	12.1	9.9	22.0	10.5		21.9	10.3	10.5		14.4	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	161.3	0.5	0.0	161.3	0.1		201.2	0.0	0.1		0.0	0.0
Delay (s)	183.3	12.6	9.9	183.3	10.5		223.2	10.3	10.6		14.4	14.4
Level of Service	F	B	A	F	B		F	B	B		B	B
Approach Delay (s)		16.1			21.6			41.2			14.4	
Approach LOS		B			C			D			B	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



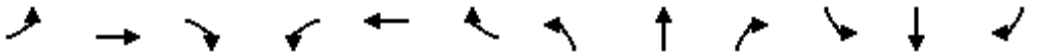
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	588	96	93	180	4	19	38	30	19	82	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.2	4.2	3.5	3.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	43	619	101	98	189	4	20	40	32	20	86	9
RTOR Reduction (vph)	0	0	62	0	0	2	0	0	26	0	0	7
Lane Group Flow (vph)	43	619	39	98	189	2	20	40	6	20	86	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.7	20.5	20.5	6.8	24.6	24.6	1.0	9.3	9.3	1.0	9.3	9.3
Effective Green, g (s)	3.7	22.5	21.5	7.8	26.6	25.6	2.0	10.3	10.3	2.0	10.3	10.3
Actuated g/C Ratio	0.07	0.40	0.38	0.14	0.47	0.45	0.04	0.18	0.18	0.04	0.18	0.18
Clearance Time (s)	4.5	5.2	5.2	4.5	5.2	5.2	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	116	1414	605	245	1672	720	63	341	290	63	341	290
v/s Ratio Prot	0.02	c0.17		c0.06	0.05		c0.01	0.02		0.01	c0.05	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.37	0.44	0.06	0.40	0.11	0.00	0.32	0.12	0.02	0.32	0.25	0.01
Uniform Delay, d1	25.2	12.3	11.0	22.1	8.3	8.4	26.5	19.2	18.9	26.5	19.7	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.5	0.1	1.1	0.1	0.0	2.9	0.2	0.0	2.9	0.4	0.0
Delay (s)	27.2	12.8	11.1	23.2	8.3	8.4	29.4	19.4	18.9	29.4	20.1	18.8
Level of Service	C	B	B	C	A	A	C	B	B	C	C	B
Approach Delay (s)		13.3			13.3			21.4			21.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	13.7
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



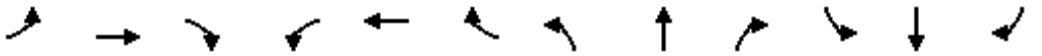
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	649	0	43	0	0	129	26	1586	9	309	1544	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97		1.00			1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	683	0	45	0	0	136	27	1669	9	325	1625	251
RTOR Reduction (vph)	0	0	34	0	0	23	0	0	3	0	0	93
Lane Group Flow (vph)	683	0	11	0	0	113	27	1669	6	325	1625	158
Turn Type	Prot		custom	Prot		Over	Prot		Perm	Prot		Perm
Protected Phases	7		4	3		1	5	2		1	6	
Permitted Phases			7						2			6
Actuated Green, G (s)	26.5		26.5			24.6	3.3	40.0	40.0	24.6	61.3	61.3
Effective Green, g (s)	26.5		26.5			24.6	3.3	40.0	40.0	24.6	61.3	61.3
Actuated g/C Ratio	0.25		0.25			0.23	0.03	0.38	0.38	0.23	0.58	0.58
Clearance Time (s)	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	857		395			367	55	1917	597	410	2938	915
v/s Ratio Prot	c0.20		0.01			0.07	0.02	c0.33		c0.18	0.32	
v/s Ratio Perm									0.00			0.10
v/c Ratio	0.80		0.03			0.31	0.49	0.87	0.01	0.79	0.55	0.17
Uniform Delay, d1	37.3		30.1			33.7	50.6	30.7	20.7	38.4	13.9	10.5
Progression Factor	1.00		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2		0.0			0.5	6.7	4.6	0.0	10.1	0.2	0.1
Delay (s)	42.5		30.1			34.2	57.3	35.3	20.7	48.4	14.1	10.6
Level of Service	D		C			C	E	D	C	D	B	B
Approach Delay (s)		41.7			34.2			35.6			18.8	
Approach LOS		D			C			D			B	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	106.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



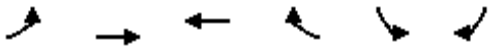
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1219	41	30	1183	12	0	8	2	104	22	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	1283	43	32	1245	13	0	8	2	109	23	19
RTOR Reduction (vph)	0	0	26	0	0	8	0	0	2	0	0	13
Lane Group Flow (vph)	8	1283	17	32	1245	5	0	8	0	109	23	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	25.4	25.4	1.3	26.2	26.2		9.7	9.7	6.1	20.8	20.8
Effective Green, g (s)	0.5	25.4	25.4	1.3	26.2	26.2		9.7	9.7	6.1	20.8	20.8
Actuated g/C Ratio	0.01	0.41	0.41	0.02	0.42	0.42		0.16	0.16	0.10	0.33	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	14	2067	643	37	2132	664		289	246	173	620	527
v/s Ratio Prot	0.00	c0.25		c0.02	0.24			0.00		c0.06	c0.01	
v/s Ratio Perm			0.01			0.00			0.00			0.00
v/c Ratio	0.57	0.62	0.03	0.86	0.58	0.01		0.03	0.00	0.63	0.04	0.01
Uniform Delay, d1	30.9	14.7	11.1	30.5	14.0	10.6		22.4	22.3	27.1	14.1	14.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.0	0.6	0.0	94.6	0.4	0.0		0.0	0.0	7.3	0.0	0.0
Delay (s)	76.9	15.3	11.2	125.1	14.4	10.6		22.4	22.3	34.4	14.1	14.0
Level of Service	E	B	B	F	B	B		C	C	C	B	B
Approach Delay (s)		15.5			17.1			22.4			28.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	62.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



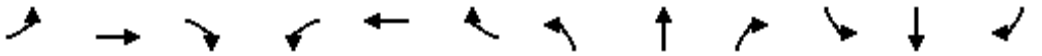
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	354	964	1	228	984	34	61	865	396	91	930	473
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	373	1015	1	240	1036	36	64	911	417	96	979	498
RTOR Reduction (vph)	0	0	1	0	0	25	0	0	193	0	0	197
Lane Group Flow (vph)	373	1015	0	240	1036	11	64	911	224	96	979	301
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.6	31.2	31.2	11.5	29.1	29.1	3.0	30.7	30.7	3.0	30.7	30.7
Effective Green, g (s)	14.6	33.2	32.2	12.5	31.1	30.1	4.0	32.7	31.7	4.0	32.7	31.7
Actuated g/C Ratio	0.15	0.34	0.33	0.13	0.32	0.31	0.04	0.34	0.33	0.04	0.34	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	520	1751	529	445	1640	494	142	1725	521	142	1725	521
v/s Ratio Prot	c0.11	0.20		0.07	c0.20		0.02	0.18		c0.03	c0.19	
v/s Ratio Perm			0.00			0.01			0.14			0.19
v/c Ratio	0.72	0.58	0.00	0.54	0.63	0.02	0.45	0.53	0.43	0.68	0.57	0.58
Uniform Delay, d1	38.9	25.9	21.4	39.3	27.8	23.0	45.1	25.6	25.3	45.6	26.1	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	0.5	0.0	1.3	0.8	0.0	2.3	0.3	0.6	12.0	0.4	1.6
Delay (s)	43.6	26.4	21.4	40.5	28.6	23.0	47.4	25.9	25.9	57.6	26.5	28.4
Level of Service	D	C	C	D	C	C	D	C	C	E	C	C
Approach Delay (s)		31.0			30.6			26.9			29.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	96.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



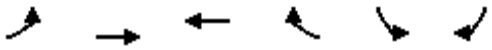
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	254	1214	930	99	50	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	267	1278	979	104	53	84
RTOR Reduction (vph)	0	0	0	68	0	70
Lane Group Flow (vph)	267	1278	979	36	53	14
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	14.5	40.1	20.6	20.6	10.2	10.2
Effective Green, g (s)	14.5	40.1	20.6	20.6	10.2	10.2
Actuated g/C Ratio	0.24	0.67	0.34	0.34	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	426	3382	1737	541	299	268
v/s Ratio Prot	c0.15	0.25	c0.19		c0.03	
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.63	0.38	0.56	0.07	0.18	0.05
Uniform Delay, d1	20.5	4.5	16.2	13.4	21.5	21.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.1	0.4	0.1	0.3	0.1
Delay (s)	23.4	4.6	16.6	13.4	21.7	21.1
Level of Service	C	A	B	B	C	C
Approach Delay (s)		7.8	16.3		21.3	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



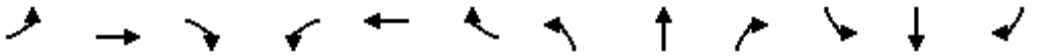
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	472	781	10	166	611	138	27	647	351	241	649	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	497	822	11	175	643	145	28	681	369	254	683	412
RTOR Reduction (vph)	0	0	8	0	0	106	0	0	184	0	0	198
Lane Group Flow (vph)	497	822	3	175	643	39	28	681	185	254	683	214
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.4	26.4	26.4	9.2	20.2	20.2	1.4	25.5	25.5	8.2	32.3	32.3
Effective Green, g (s)	16.4	28.4	27.4	10.2	22.2	21.2	2.4	27.5	26.5	9.2	34.3	33.3
Actuated g/C Ratio	0.18	0.32	0.31	0.11	0.25	0.24	0.03	0.31	0.30	0.10	0.38	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	630	1617	486	392	1264	376	92	1566	470	354	1953	590
v/s Ratio Prot	c0.14	c0.16		0.05	0.13		0.01	c0.13		c0.07	0.13	
v/s Ratio Perm			0.00			0.02			0.12			0.14
v/c Ratio	0.79	0.51	0.01	0.45	0.51	0.10	0.30	0.43	0.39	0.72	0.35	0.36
Uniform Delay, d1	34.8	24.8	21.5	36.9	28.9	26.6	42.6	24.7	25.0	38.8	19.6	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	0.3	0.0	0.8	0.3	0.1	1.9	0.2	0.5	6.8	0.1	0.4
Delay (s)	41.3	25.0	21.5	37.7	29.2	26.7	44.5	24.9	25.6	45.6	19.7	20.7
Level of Service	D	C	C	D	C	C	D	C	C	D	B	C
Approach Delay (s)		31.1			30.4			25.6			24.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	11.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



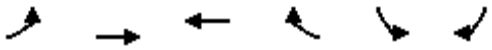
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1373	883	144	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0		5.0
Lane Util. Factor		0.91	0.91	1.00		1.00
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		5085	5085	1583		1583
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		5085	5085	1583		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1445	929	152	0	35
RTOR Reduction (vph)	0	0	0	62	0	28
Lane Group Flow (vph)	0	1445	929	90	0	7
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)		27.0	27.0	27.0		8.8
Effective Green, g (s)		27.0	27.0	27.0		8.8
Actuated g/C Ratio		0.59	0.59	0.59		0.19
Clearance Time (s)		5.0	5.0	5.0		5.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		2998	2998	933		304
v/s Ratio Prot		c0.28	0.18			
v/s Ratio Perm				0.06		c0.00
v/c Ratio		0.48	0.31	0.10		0.02
Uniform Delay, d1		5.4	4.7	4.1		15.0
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.1	0.0		0.0
Delay (s)		5.5	4.8	4.1		15.0
Level of Service		A	A	A		B
Approach Delay (s)		5.5	4.7		15.0	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	30.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



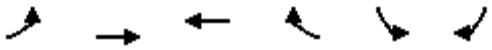
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1261	104	4	849	65	147	66	13	181	110	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	1327	109	4	894	68	155	69	14	191	116	33
RTOR Reduction (vph)	0	0	68	0	0	43	0	0	12	0	0	27
Lane Group Flow (vph)	7	1327	41	4	894	25	155	69	2	191	116	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.7	23.9	23.9	0.7	23.9	23.9	9.8	11.5	11.5	10.4	12.1	12.1
Effective Green, g (s)	0.7	23.9	23.9	0.7	23.9	23.9	9.8	11.5	11.5	10.4	12.1	12.1
Actuated g/C Ratio	0.01	0.37	0.37	0.01	0.37	0.37	0.15	0.18	0.18	0.16	0.19	0.19
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	4.8	4.8	3.0	4.8	4.8	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	19	1884	587	19	1884	587	269	332	282	285	349	297
v/s Ratio Prot	c0.00	c0.26		0.00	0.18		0.09	0.04		c0.11	c0.06	
v/s Ratio Perm			0.03			0.02			0.00			0.00
v/c Ratio	0.37	0.70	0.07	0.21	0.47	0.04	0.58	0.21	0.01	0.67	0.33	0.02
Uniform Delay, d1	31.7	17.3	13.1	31.6	15.5	13.0	25.4	22.6	21.8	25.4	22.7	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7	1.5	0.1	5.5	0.4	0.1	3.0	0.3	0.0	6.1	0.6	0.0
Delay (s)	43.4	18.8	13.2	37.1	15.9	13.0	28.4	22.9	21.8	31.5	23.3	21.4
Level of Service	D	B	B	D	B	B	C	C	C	C	C	C
Approach Delay (s)		18.5			15.8			26.4			27.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



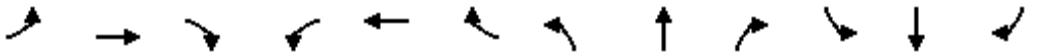
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	167	1288	861	166	55	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	176	1356	906	175	58	60
RTOR Reduction (vph)	0	0	0	113	0	48
Lane Group Flow (vph)	176	1356	906	62	58	12
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.9	31.0	18.1	18.1	10.1	10.1
Effective Green, g (s)	7.9	31.0	18.1	18.1	10.1	10.1
Actuated g/C Ratio	0.15	0.61	0.35	0.35	0.20	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	274	3085	1801	561	350	313
v/s Ratio Prot	c0.10	0.27	c0.18		c0.03	
v/s Ratio Perm				0.04		0.01
v/c Ratio	0.64	0.44	0.50	0.11	0.17	0.04
Uniform Delay, d1	20.3	5.4	13.0	11.1	17.0	16.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.1	0.2	0.1	0.2	0.0
Delay (s)	25.4	5.5	13.2	11.2	17.2	16.6
Level of Service	C	A	B	B	B	B
Approach Delay (s)		7.8	12.9		16.9	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	76	1267	989	37	119	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5	5.5	5.5	4.5	4.5
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	1334	1041	39	125	40
RTOR Reduction (vph)	0	0	0	23	0	31
Lane Group Flow (vph)	80	1334	1041	16	125	9
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.8	28.5	20.2	20.2	11.4	11.4
Effective Green, g (s)	3.8	28.5	20.2	20.2	11.4	11.4
Actuated g/C Ratio	0.08	0.57	0.40	0.40	0.23	0.23
Clearance Time (s)	4.5	5.5	5.5	5.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	135	2904	2058	641	404	362
v/s Ratio Prot	0.05	c0.26	0.20		c0.07	
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.59	0.46	0.51	0.02	0.31	0.03
Uniform Delay, d1	22.3	6.2	11.1	8.9	16.0	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	0.1	0.2	0.0	0.4	0.0
Delay (s)	29.1	6.3	11.3	8.9	16.4	15.0
Level of Service	C	A	B	A	B	B
Approach Delay (s)		7.6	11.2		16.1	
Approach LOS		A	B		B	

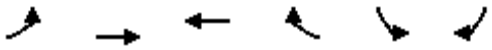
Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	49.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	1175	72	239	804	330	185	1086	391	430	855	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	3.0	2.7	2.7	3.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	135	1237	76	252	846	347	195	1143	412	453	900	304
RTOR Reduction (vph)	0	0	53	0	0	183	0	0	133	0	0	153
Lane Group Flow (vph)	135	1237	23	252	846	164	195	1143	279	453	900	151
Heavy Vehicles (%)	2%	4%	2%	2%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	35.0	35.0	10.0	36.0	36.0	11.0	36.1	36.1	14.0	39.1	39.1
Effective Green, g (s)	11.0	38.0	36.0	12.0	38.3	38.3	13.0	38.1	38.1	15.0	41.1	41.1
Actuated g/C Ratio	0.09	0.32	0.31	0.10	0.33	0.33	0.11	0.33	0.33	0.13	0.35	0.35
Clearance Time (s)	5.0	6.0	6.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	4.7	4.7	3.0	3.0	3.0	3.0	4.8	4.8	3.0	4.7	4.7
Lane Grp Cap (vph)	322	1619	487	352	1631	508	381	1654	515	440	1785	556
v/s Ratio Prot	0.04	c0.25		c0.07	0.17		0.06	c0.22		c0.13	c0.18	
v/s Ratio Perm			0.01			0.11			0.18			0.10
v/c Ratio	0.42	0.76	0.05	0.72	0.52	0.32	0.51	0.69	0.54	1.03	0.50	0.27
Uniform Delay, d1	50.0	35.5	28.5	50.9	31.9	29.6	49.1	34.4	32.4	51.0	30.0	27.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	2.5	0.1	6.8	0.3	0.4	1.2	1.6	1.9	50.7	0.4	0.5
Delay (s)	50.9	38.0	28.6	57.7	32.2	30.0	50.2	35.9	34.3	101.7	30.4	27.8
Level of Service	D	D	C	E	C	C	D	D	C	F	C	C
Approach Delay (s)		38.8			36.1			37.1			49.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	117.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

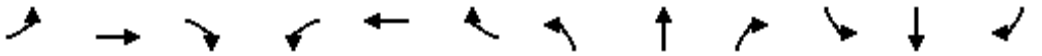
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	543	1399	1084	80	120	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1478	1770	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	572	1473	1141	84	126	260
RTOR Reduction (vph)	0	0	0	47	0	179
Lane Group Flow (vph)	572	1473	1141	37	126	81
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	9.0	36.0	23.0	23.0	6.7	15.7
Effective Green, g (s)	10.0	39.0	26.0	26.0	7.7	17.7
Actuated g/C Ratio	0.17	0.65	0.43	0.43	0.13	0.30
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	574	2308	1539	643	228	965
v/s Ratio Prot	c0.17	0.42	c0.32		c0.07	0.01
v/s Ratio Perm				0.02		0.02
v/c Ratio	1.00	0.64	0.74	0.06	0.55	0.08
Uniform Delay, d1	24.9	6.2	14.1	9.8	24.4	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.4	0.7	2.1	0.1	1.6	0.0
Delay (s)	61.3	6.9	16.2	9.8	26.1	15.2
Level of Service	E	A	B	A	C	B
Approach Delay (s)		22.1	15.8		18.8	
Approach LOS		C	B		B	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	16.1
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

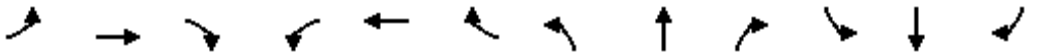
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	348	1126	111	81	871	100	161	0	357	271	0	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0	5.0	2.0	4.0	3.0	2.0		3.0	3.7		2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.99	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1529	1770	3539	1562	1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1529	1770	3539	1562	1770		1583	1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	366	1185	117	85	917	105	169	0	376	285	0	141
RTOR Reduction (vph)	0	0	62	0	0	0	0	0	125	0	0	0
Lane Group Flow (vph)	366	1185	55	85	917	105	169	0	251	285	0	141
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot		Perm	Prot		Free	Prot		custom	Prot		Free
Protected Phases	7	4		3	8		5			6		
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	19.0	45.1	45.1	3.9	30.0	98.9	14.3		14.3	15.9		98.9
Effective Green, g (s)	21.0	47.1	46.1	5.9	32.0	98.9	16.3		15.3	17.9		98.9
Actuated g/C Ratio	0.21	0.48	0.47	0.06	0.32	1.00	0.16		0.15	0.18		1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0		4.0	5.7		
Vehicle Extension (s)	2.0	4.8	4.8	2.0	4.8		2.0		2.0	2.0		
Lane Grp Cap (vph)	376	1685	713	106	1145	1562	292		245	320		1583
v/s Ratio Prot	c0.21	0.33		0.05	c0.26		0.10			c0.16		
v/s Ratio Perm			0.04			0.07			c0.16			0.09
v/c Ratio	0.97	0.70	0.08	0.80	0.80	0.07	0.58		1.02	0.89		0.09
Uniform Delay, d1	38.7	20.4	14.6	45.9	30.5	0.0	38.1		41.8	39.5		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	39.0	1.6	0.1	32.3	4.6	0.1	1.7		63.9	24.5		0.1
Delay (s)	77.6	22.0	14.7	78.2	35.2	0.1	39.9		105.7	64.1		0.1
Level of Service	E	C	B	E	D	A	D		F	E		A
Approach Delay (s)		33.7			35.2			85.3			42.9	
Approach LOS		C			D			F			D	

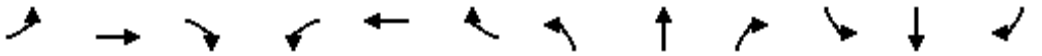
Intersection Summary			
HCM Average Control Delay	42.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	98.9	Sum of lost time (s)	12.7
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	411	955	65	181	48	390	1501	74	56	1229	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	176	433	1005	68	191	51	411	1580	78	59	1294	193
RTOR Reduction (vph)	0	0	108	0	0	26	0	0	45	0	0	0
Lane Group Flow (vph)	176	433	897	68	191	25	411	1580	33	59	1294	193
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	9.3	60.0	60.0	4.0	55.7	55.7	11.0	33.0	33.0	3.0	25.0	120.0
Effective Green, g (s)	10.3	63.0	63.0	5.0	58.2	58.2	12.0	36.0	36.0	4.0	28.0	120.0
Actuated g/C Ratio	0.09	0.52	0.52	0.04	0.49	0.49	0.10	0.30	0.30	0.03	0.23	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	295	1858	831	74	2466	768	343	1526	475	59	1495	1583
v/s Ratio Prot	0.05	0.12		c0.04	0.04		c0.12	c0.31		0.03	0.20	
v/s Ratio Perm			c0.57			0.02			0.02			0.12
v/c Ratio	0.60	0.23	1.08	0.92	0.08	0.03	1.20	1.04	0.07	1.00	0.87	0.12
Uniform Delay, d1	52.8	15.4	28.5	57.3	16.5	16.2	54.0	42.0	30.0	58.0	44.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.1	55.0	75.4	0.0	0.0	114.0	32.7	0.3	117.2	5.7	0.2
Delay (s)	55.0	15.5	83.5	132.7	16.6	16.2	168.0	74.7	30.3	175.2	49.9	0.2
Level of Service	E	B	F	F	B	B	F	E	C	F	D	A
Approach Delay (s)		62.1			42.0			91.6			48.5	
Approach LOS		E			D			F			D	

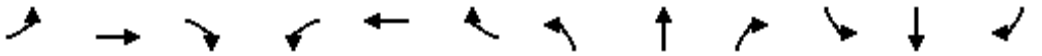
Intersection Summary			
HCM Average Control Delay	68.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	261	142	340	454	378	247	948	348	535	605	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0	5.0	3.0	2.6	5.0	5.0	2.6	3.0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1562	3433	1863	1562	1770	3539	1567	3433	3539	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1562	3433	1863	1562	1770	3539	1567	3433	3539	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	275	149	358	478	398	260	998	366	563	637	23
RTOR Reduction (vph)	0	0	0	0	0	139	0	0	68	0	0	0
Lane Group Flow (vph)	23	275	149	358	478	259	260	998	298	563	637	23
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		Free
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			Free			8			2			Free
Actuated Green, G (s)	3.4	20.0	97.4	13.2	29.8	46.9	16.8	27.1	40.3	17.1	28.4	97.4
Effective Green, g (s)	4.4	20.0	97.4	13.2	29.8	46.9	17.8	30.5	40.3	17.1	31.8	97.4
Actuated g/C Ratio	0.05	0.21	1.00	0.14	0.31	0.48	0.18	0.31	0.41	0.18	0.33	1.00
Clearance Time (s)	4.0	4.0		5.0	5.0	5.0	4.0	6.0	5.0	5.0	6.0	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	3.9	3.0	3.0	3.9	
Lane Grp Cap (vph)	80	383	1562	465	570	832	323	1108	648	603	1155	1548
v/s Ratio Prot	0.01	0.15		c0.10	c0.26	0.05	0.15	c0.28	0.06	c0.16	0.18	
v/s Ratio Perm			c0.10			0.11			0.13			0.01
v/c Ratio	0.29	0.72	0.10	0.77	0.84	0.31	0.80	0.90	0.46	0.93	0.55	0.01
Uniform Delay, d1	45.0	36.1	0.0	40.6	31.6	15.4	38.1	32.0	20.7	39.6	26.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	5.3	0.1	7.5	10.4	0.2	12.8	10.3	0.5	21.6	0.7	0.0
Delay (s)	45.7	41.4	0.1	48.2	42.0	15.6	51.0	42.3	21.2	61.2	27.6	0.0
Level of Service	D	D	A	D	D	B	D	D	C	E	C	A
Approach Delay (s)		27.8			35.3			38.9			42.6	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	97.4	Sum of lost time (s)	17.6
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

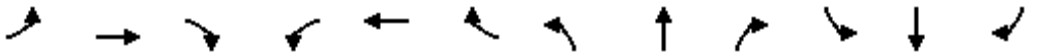
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	597	6	25	775	546	22	533	25	292	646	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	4.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1557	3433	3539	1562	3433	3539	1562	3433	3539	1559
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1557	3433	3539	1562	3433	3539	1562	3433	3539	1559
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	628	6	26	816	575	23	561	26	307	680	18
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	11
Lane Group Flow (vph)	46	628	2	26	816	575	23	561	26	307	680	7
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	3		4	8		5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)	5.1	24.8	24.8	5.2	23.9	83.9	2.6	24.2	83.9	11.7	33.3	33.3
Effective Green, g (s)	6.1	25.8	25.8	6.2	24.9	83.9	3.6	25.2	83.9	12.7	34.3	34.3
Actuated g/C Ratio	0.07	0.31	0.31	0.07	0.30	1.00	0.04	0.30	1.00	0.15	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	5.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	3.0		2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)	250	1088	479	254	1050	1562	147	1063	1562	520	1447	637
v/s Ratio Prot	0.01	c0.18		0.01	c0.23		0.01	c0.16		c0.09	0.19	
v/s Ratio Perm			0.00			c0.37			0.02			0.00
v/c Ratio	0.18	0.58	0.00	0.10	0.78	0.37	0.16	0.53	0.02	0.59	0.47	0.01
Uniform Delay, d1	36.6	24.5	20.1	36.3	27.0	0.0	38.7	24.4	0.0	33.2	18.1	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.5	0.0	0.1	3.7	0.7	0.2	0.8	0.0	1.2	0.5	0.0
Delay (s)	36.7	24.9	20.1	36.3	30.6	0.7	38.9	25.3	0.0	34.4	18.6	14.7
Level of Service	D	C	C	D	C	A	D	C	A	C	B	B
Approach Delay (s)		25.7			18.6			24.7			23.4	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	83.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

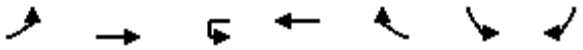
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	10	152	20	3	1	51	1129	7	1	959	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1798	1478		1778		1770	3539	1583	1770	3539	1583
Flt Permitted		0.97	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1798	1478		1778		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	11	160	21	3	1	54	1188	7	1	1009	11
RTOR Reduction (vph)	0	0	136	0	1	0	0	0	2	0	0	5
Lane Group Flow (vph)	0	40	24	0	24	0	54	1188	5	1	1009	6
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		5.6	5.6		0.5		1.6	25.5	25.5	0.4	24.3	24.3
Effective Green, g (s)		7.5	7.5		2.4		2.6	28.5	28.5	1.4	27.3	27.3
Actuated g/C Ratio		0.15	0.15		0.05		0.05	0.57	0.57	0.03	0.54	0.54
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1	2.0	4.1	4.1
Lane Grp Cap (vph)		269	221		85		92	2009	899	49	1925	861
v/s Ratio Prot		c0.02			c0.01		c0.03	c0.34		0.00	0.29	
v/s Ratio Perm			0.02						0.00			0.00
v/c Ratio		0.15	0.11		0.28		0.59	0.59	0.01	0.02	0.52	0.01
Uniform Delay, d1		18.6	18.5		23.1		23.3	7.1	4.7	23.7	7.3	5.2
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1		0.7		6.0	0.6	0.0	0.1	0.4	0.0
Delay (s)		18.7	18.5		23.7		29.3	7.6	4.7	23.8	7.7	5.2
Level of Service		B	B		C		C	A	A	C	A	A
Approach Delay (s)		18.6			23.7			8.5			7.6	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	50.2	Sum of lost time (s)	7.4
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



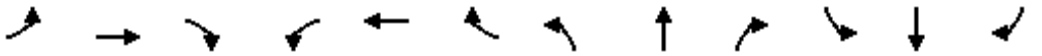
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	841	2289	0	1697	55	86	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	4.0	5.0	4.0
Lane Util. Factor	1.00	0.91		0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085		5085	1548	1770	1562
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085		5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	885	2409	0	1786	58	91	223
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	885	2409	0	1786	58	91	223
Confl. Peds. (#/hr)					5		5
Turn Type	Prot		Prot		Free		Free
Protected Phases	5	2	1	6		7	
Permitted Phases					Free		Free
Actuated Green, G (s)	61.0	125.0		59.0	150.0	15.0	150.0
Effective Green, g (s)	61.0	125.0		59.0	150.0	15.0	150.0
Actuated g/C Ratio	0.41	0.83		0.39	1.00	0.10	1.00
Clearance Time (s)	5.0	5.0		5.0		5.0	
Vehicle Extension (s)	3.0	3.0		3.0		3.0	
Lane Grp Cap (vph)	720	4238		2000	1548	177	1562
v/s Ratio Prot	c0.50	0.47		c0.35		c0.05	
v/s Ratio Perm					0.04		0.14
v/c Ratio	1.23	0.57		0.89	0.04	0.51	0.14
Uniform Delay, d1	44.5	4.0		42.5	0.0	64.0	0.0
Progression Factor	1.12	2.06		0.82	1.00	1.00	1.00
Incremental Delay, d2	104.3	0.1		6.2	0.0	10.3	0.2
Delay (s)	153.9	8.2		40.9	0.0	74.3	0.2
Level of Service	F	A		D	A	E	A
Approach Delay (s)		47.4		39.6		21.7	
Approach LOS		D		D		C	

Intersection Summary			
HCM Average Control Delay	43.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	118.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2268	107	100	1636	116	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.0	3.0	3.0	3.6	3.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1548	1770	4916	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1548	1770	4916	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2387	113	105	1722	122	153
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2387	113	105	1722	122	153
Confl. Peds. (#/hr)		5				5
Parking (#/hr)				0		
Turn Type		Free	Prot			Free
Protected Phases	4		3	8	2	
Permitted Phases		Free				Free
Actuated Green, G (s)	106.6	150.0	12.9	123.5	15.9	150.0
Effective Green, g (s)	109.6	150.0	13.9	126.5	16.9	150.0
Actuated g/C Ratio	0.73	1.00	0.09	0.84	0.11	1.00
Clearance Time (s)	6.0		4.0	6.0	4.6	
Vehicle Extension (s)	4.1		2.0	4.1	2.0	
Lane Grp Cap (vph)	3715	1548	164	4146	199	1562
v/s Ratio Prot	c0.47		c0.06	0.35	c0.07	
v/s Ratio Perm		0.07				0.10
v/c Ratio	0.64	0.07	0.64	0.42	0.61	0.10
Uniform Delay, d1	10.3	0.0	65.6	2.8	63.4	0.0
Progression Factor	0.36	1.00	0.68	2.41	1.00	1.00
Incremental Delay, d2	0.7	0.1	5.5	0.3	3.9	0.1
Delay (s)	4.4	0.1	50.3	7.1	67.3	0.1
Level of Service	A	A	D	A	E	A
Approach Delay (s)	4.2			9.6	29.9	
Approach LOS	A			A	C	

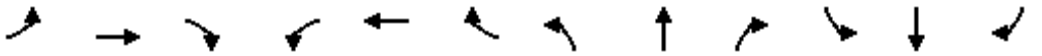
Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	262	2143	1	44	1534	947	3	5	32	412	3	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.3	2.3	3.0	2.3	3.0		3.0	6.3	5.0	5.0	3.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.99		1.00	0.97	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	1510	1770	5085	1562		1828	1542	3221	1616	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	1510	1770	5085	1562		1828	1542	3221	1616	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	276	2256	1	46	1615	997	3	5	34	434	3	195
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	30	0	0	0
Lane Group Flow (vph)	276	2256	1	46	1615	997	0	8	4	291	146	195
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Perm	Prot		Free	Split		custom	Split		Free
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			Free			1			Free
Actuated Green, G (s)	28.3	101.5	101.5	8.0	81.2	150.0		1.5	18.0	18.0	18.0	150.0
Effective Green, g (s)	29.3	104.9	104.9	9.0	84.6	150.0		2.5	19.0	20.3	20.3	150.0
Actuated g/C Ratio	0.20	0.70	0.70	0.06	0.56	1.00		0.02	0.13	0.14	0.14	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7			4.0	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	346	3556	1056	106	2868	1562		30	195	436	219	1583
v/s Ratio Prot	c0.16	0.44		0.03	0.32			0.00		0.09	0.09	
v/s Ratio Perm			0.00			c0.64			0.00			0.12
v/c Ratio	0.80	0.63	0.00	0.43	0.56	0.64		0.27	0.02	0.67	0.67	0.12
Uniform Delay, d1	57.5	12.2	6.8	68.0	20.9	0.0		72.8	57.4	61.6	61.6	0.0
Progression Factor	1.16	0.08	0.01	1.09	0.31	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	0.7	0.0	2.5	0.2	1.8		4.7	0.0	3.8	7.5	0.2
Delay (s)	76.8	1.7	0.1	76.7	6.8	1.8		77.6	57.4	65.5	69.1	0.2
Level of Service	E	A	A	E	A	A		E	E	E	E	A
Approach Delay (s)		9.9			6.1			61.3			46.2	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

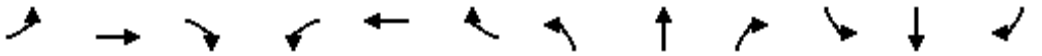
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	2	36	14	1	68	15	2458	43	97	2477	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.86	1.00	0.97	0.86	1.00
Frpb, ped/bikes		1.00	0.96	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1777	1527	1681	1695	1583	1770	6408	1550	3433	6408	1546
Flt Permitted		0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1777	1527	1681	1695	1583	1770	6408	1550	3433	6408	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	2	38	15	1	72	16	2587	45	102	2607	3
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	10	0	0	1
Lane Group Flow (vph)	0	62	2	8	8	72	16	2587	35	102	2607	2
Confl. Peds. (#/hr)			5						5			5
Turn Type	Split		Perm	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	1	1		2	2		3	8		7	4	
Permitted Phases			1			Free			8			4
Actuated Green, G (s)		8.4	8.4	5.7	5.7	150.0	2.9	108.7	108.7	8.8	114.6	114.6
Effective Green, g (s)		9.4	9.4	6.7	6.7	150.0	3.9	112.1	112.1	9.8	118.0	118.0
Actuated g/C Ratio		0.06	0.06	0.04	0.04	1.00	0.03	0.75	0.75	0.07	0.79	0.79
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0	2.8	2.8		2.0	3.7	3.7	2.0	3.7	3.7
Lane Grp Cap (vph)		111	96	75	76	1583	46	4789	1158	224	5041	1216
v/s Ratio Prot		c0.03		c0.00	0.00		0.01	c0.40		c0.03	0.41	
v/s Ratio Perm			0.00			0.05			0.02			0.00
v/c Ratio		0.56	0.02	0.11	0.11	0.05	0.35	0.54	0.03	0.46	0.52	0.00
Uniform Delay, d1		68.3	66.0	68.8	68.8	0.0	71.8	8.0	4.9	67.5	5.8	3.4
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.02	0.10	0.03	0.92	1.32	1.37
Incremental Delay, d2		3.4	0.0	0.6	0.5	0.1	1.4	0.1	0.0	0.4	0.3	0.0
Delay (s)		71.7	66.0	69.3	69.3	0.1	75.0	0.9	0.1	62.5	7.9	4.7
Level of Service		E	E	E	E	A	E	A	A	E	A	A
Approach Delay (s)		69.6			12.6			1.4			10.0	
Approach LOS		E			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

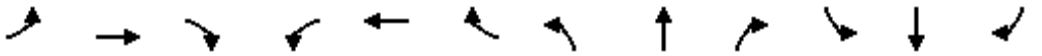
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	2274	188	365	2332	134	207	77	289	62	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	6408	1537	3433	6408	1560	1681	1730	1583	1681	1717	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	6408	1537	3433	6408	1560	1681	1730	1583	1681	1717	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	2394	198	384	2455	141	218	81	304	65	16	7
RTOR Reduction (vph)	0	0	70	0	0	0	0	0	229	0	0	0
Lane Group Flow (vph)	15	2394	128	384	2455	141	148	151	75	40	41	7
Confl. Peds. (#/hr)			10			10						10
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Free
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	6.4	81.1	81.1	22.8	97.5	150.0	18.0	18.0	18.0	9.7	9.7	150.0
Effective Green, g (s)	7.4	84.5	82.1	23.8	100.9	150.0	19.0	19.0	19.0	10.7	10.7	150.0
Actuated g/C Ratio	0.05	0.56	0.55	0.16	0.67	1.00	0.13	0.13	0.13	0.07	0.07	1.00
Clearance Time (s)	4.0	6.4	6.4	4.0	6.4		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.0	3.7	3.7	2.0	3.7		2.5	2.5	2.5	3.0	3.0	
Lane Grp Cap (vph)	169	3610	841	545	4310	1560	213	219	201	120	122	1560
v/s Ratio Prot	0.00	c0.37		c0.11	0.38		c0.09	0.09		0.02	c0.02	
v/s Ratio Perm			0.08			0.09			0.05			0.00
v/c Ratio	0.09	0.66	0.15	0.70	0.57	0.09	0.69	0.69	0.37	0.33	0.34	0.00
Uniform Delay, d1	68.1	22.8	16.8	59.8	13.0	0.0	62.7	62.7	60.0	66.3	66.3	0.0
Progression Factor	0.82	0.51	0.41	1.02	0.84	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.9	0.3	1.5	0.1	0.1	8.7	8.0	0.9	1.6	1.6	0.0
Delay (s)	56.1	12.6	7.2	62.7	11.1	0.1	71.4	70.7	60.9	67.9	67.9	0.0
Level of Service	E	B	A	E	B	A	E	E	E	E	E	A
Approach Delay (s)		12.5			17.2			65.9			62.5	
Approach LOS		B			B			E			E	

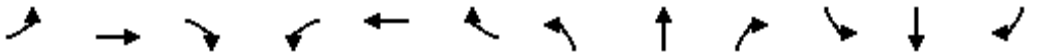
Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	1452	791	82	1579	396	927	518	45	945	775	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4	4.0	4.0	6.4	4.0	4.0	6.0	4.0	7.7	6.7	4.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.97	0.91	1.00	0.94	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	3433	5085	1583	4990	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	3433	5085	1583	4990	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	321	1528	833	86	1662	417	976	545	47	995	816	304
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	321	1528	833	86	1662	417	976	545	47	995	816	304
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	15.0	50.8	150.0	7.4	40.8	150.0	42.0	24.2	150.0	43.5	28.7	150.0
Effective Green, g (s)	15.0	50.8	150.0	7.4	40.8	150.0	42.0	24.2	150.0	43.5	28.7	150.0
Actuated g/C Ratio	0.10	0.34	1.00	0.05	0.27	1.00	0.28	0.16	1.00	0.29	0.19	1.00
Clearance Time (s)	6.4	6.4		4.0	6.4		4.0	6.0		7.7	6.7	
Vehicle Extension (s)	2.0	3.7		2.0	4.1		2.0	4.1		3.0	4.5	
Lane Grp Cap (vph)	343	2170	1583	169	1743	1583	961	820	1583	1447	973	1583
v/s Ratio Prot	c0.09	0.24		0.03	c0.26		c0.28	0.11		0.20	c0.16	
v/s Ratio Perm			0.53			0.26			0.03			0.19
v/c Ratio	0.94	0.70	0.53	0.51	0.95	0.26	1.02	0.66	0.03	0.69	0.84	0.19
Uniform Delay, d1	67.0	43.1	0.0	69.5	53.7	0.0	54.0	59.1	0.0	47.2	58.4	0.0
Progression Factor	0.76	0.66	1.00	1.11	0.61	1.00	1.00	1.00	1.00	0.60	0.64	1.00
Incremental Delay, d2	27.0	0.9	1.0	0.7	11.1	0.3	33.0	2.3	0.0	1.2	6.2	0.2
Delay (s)	78.2	29.3	1.0	77.7	44.0	0.3	87.0	61.4	0.0	29.4	43.7	0.2
Level of Service	E	C	A	E	D	A	F	E	A	C	D	A
Approach Delay (s)		26.4			36.9			75.5			30.7	
Approach LOS		C			D			E			C	

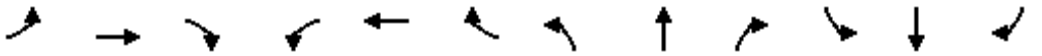
Intersection Summary			
HCM Average Control Delay	39.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	2384	4	13	2103	246	67	0	141	105	1	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	1525	1770	5085	1525	1681	1681	1526	1681	1687	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	1525	1770	5085	1525	1681	1681	1526	1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	2509	4	14	2214	259	71	0	148	111	1	32
RTOR Reduction (vph)	0	0	1	0	0	60	0	0	84	0	0	30
Lane Group Flow (vph)	53	2509	3	14	2214	199	35	36	64	55	57	2
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	7.2	109.1	109.1	2.0	103.9	103.9	9.2	9.2	9.2	11.1	11.1	11.1
Effective Green, g (s)	7.2	109.1	109.1	2.0	103.9	103.9	9.2	9.2	9.2	11.1	11.1	11.1
Actuated g/C Ratio	0.05	0.73	0.73	0.01	0.69	0.69	0.06	0.06	0.06	0.07	0.07	0.07
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	2.0	2.0	3.6	3.6	3.6
Lane Grp Cap (vph)	85	3698	1109	24	3522	1056	103	103	94	124	125	117
v/s Ratio Prot	c0.03	c0.49		0.01	0.44		0.02	0.02		0.03	c0.03	
v/s Ratio Perm			0.00			0.13			c0.04			0.00
v/c Ratio	0.62	0.68	0.00	0.58	0.63	0.19	0.34	0.35	0.68	0.44	0.46	0.02
Uniform Delay, d1	70.1	11.0	5.6	73.6	12.5	8.1	67.5	67.5	68.9	66.5	66.6	64.4
Progression Factor	1.21	0.59	0.27	1.29	0.80	0.66	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.2	0.4	0.0	12.9	0.5	0.2	0.7	0.7	14.1	3.1	3.2	0.1
Delay (s)	92.0	6.9	1.5	107.6	10.5	5.6	68.2	68.3	83.0	69.6	69.7	64.5
Level of Service	F	A	A	F	B	A	E	E	F	E	E	E
Approach Delay (s)		8.7			10.6			78.2			68.5	
Approach LOS		A			B			E			E	

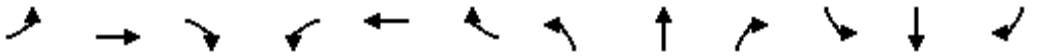
Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	2375	68	281	1971	211	278	229	324	703	100	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3485	6504	1589	3433	5085	1554	3433	5085	1539	3433	5085	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3485	6504	1589	3433	5085	1554	3433	5085	1539	3433	5085	1545
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	174	2500	72	296	2075	222	293	241	341	740	105	129
RTOR Reduction (vph)	0	0	17	0	0	77	0	0	119	0	0	102
Lane Group Flow (vph)	174	2500	55	296	2075	145	293	241	222	740	105	27
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	62.6	105.7	14.0	68.6	68.6	43.1	20.4	20.4	33.0	10.3	10.3
Effective Green, g (s)	8.0	62.6	105.7	14.0	68.6	68.6	43.1	20.4	20.4	33.0	10.3	10.3
Actuated g/C Ratio	0.05	0.42	0.70	0.09	0.46	0.46	0.29	0.14	0.14	0.22	0.07	0.07
Clearance Time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.8	4.8	2.5	2.5	4.8	4.8	2.5	3.4	3.4	2.5	3.4	3.4
Lane Grp Cap (vph)	186	2714	1162	320	2326	711	986	692	209	755	349	106
v/s Ratio Prot	0.05	c0.38	0.01	0.09	c0.41		0.09	0.05		c0.22	0.02	
v/s Ratio Perm			0.02			0.09			c0.14			0.02
v/c Ratio	0.94	0.92	0.05	0.93	0.89	0.20	0.30	0.35	1.06	0.98	0.30	0.25
Uniform Delay, d1	70.7	41.4	6.8	67.5	37.3	24.4	41.6	58.8	64.8	58.2	66.4	66.2
Progression Factor	1.01	0.58	0.06	0.74	0.53	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.9	5.1	0.0	24.4	3.6	0.2	0.1	0.3	79.3	27.7	0.6	1.4
Delay (s)	111.3	29.1	0.4	74.6	23.4	6.3	41.8	59.1	144.1	85.9	67.0	67.6
Level of Service	F	C	A	E	C	A	D	E	F	F	E	E
Approach Delay (s)		33.5			27.8			86.4			81.5	
Approach LOS		C			C			F			F	

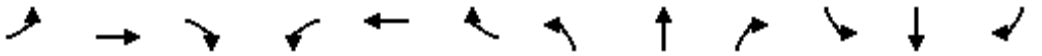
Intersection Summary			
HCM Average Control Delay	44.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	355	2421	700	215	2145	2	190	177	152	14	46	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	6.7	5.7	4.0	4.0	4.6	4.6
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1553	4990	1863	1562	1770	1863	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1553	4990	1863	1562	1770	1863	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	374	2548	737	226	2258	2	200	186	160	15	48	137
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	130
Lane Group Flow (vph)	374	2548	737	226	2258	2	200	186	160	15	48	7
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Free	Prot		Perm	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Actuated Green, G (s)	20.0	92.8	150.0	13.4	86.2	86.2	14.4	22.5	150.0	1.6	8.1	8.1
Effective Green, g (s)	20.0	92.8	150.0	13.4	86.2	86.2	14.4	22.5	150.0	1.6	8.1	8.1
Actuated g/C Ratio	0.13	0.62	1.00	0.09	0.57	0.57	0.10	0.15	1.00	0.01	0.05	0.05
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	6.7	5.7		4.0	4.6	4.6
Vehicle Extension (s)	2.0	4.1		2.0	4.1	4.1	2.0	4.3		2.0	2.0	2.0
Lane Grp Cap (vph)	458	3146	1562	307	2922	892	479	279	1562	19	101	150
v/s Ratio Prot	c0.11	c0.50		0.07	0.44		0.04	c0.10		0.01	0.03	
v/s Ratio Perm			c0.47			0.00			0.10			0.00
v/c Ratio	0.82	0.81	0.47	0.74	0.77	0.00	0.42	0.67	0.10	0.79	0.48	0.05
Uniform Delay, d1	63.2	21.9	0.0	66.6	24.4	13.6	63.9	60.2	0.0	74.0	68.9	67.3
Progression Factor	1.10	0.60	1.00	1.24	0.55	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.9	0.4	6.4	1.2	0.0	0.2	6.8	0.1	102.4	1.3	0.0
Delay (s)	73.9	13.9	0.4	89.0	14.5	3.4	64.1	67.0	0.1	176.5	70.2	67.3
Level of Service	E	B	A	F	B	A	E	E	A	F	E	E
Approach Delay (s)		17.3			21.3			46.3			76.2	
Approach LOS		B			C			D			E	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



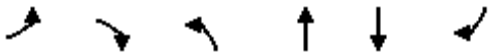
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	353	2037	4	10	1716	110	0	0	0	110	0	658
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4				6.0	6.0	6.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98				1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)	3433	5084		1770	5085	1555				1681	1681	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)	3433	5084		1770	5085	1555				1681	1681	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	372	2144	4	11	1806	116	0	0	0	116	0	693
RTOR Reduction (vph)	0	0	0	0	0	44	0	0	0	0	0	643
Lane Group Flow (vph)	372	2148	0	11	1806	72	0	0	0	58	58	50
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	22.5	114.8		1.2	93.5	93.5				10.8	10.8	10.8
Effective Green, g (s)	22.5	114.8		1.2	93.5	93.5				10.8	10.8	10.8
Actuated g/C Ratio	0.15	0.77		0.01	0.62	0.62				0.07	0.07	0.07
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4				6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.7		2.0	3.7	3.7				2.0	2.0	2.0
Lane Grp Cap (vph)	515	3891		14	3170	969				121	121	201
v/s Ratio Prot	c0.11	0.42		0.01	c0.36					c0.03	0.03	
v/s Ratio Perm						0.05						0.02
v/c Ratio	0.72	0.55		0.79	0.57	0.07				0.48	0.48	0.25
Uniform Delay, d1	60.8	7.2		74.3	16.5	11.2				66.9	66.9	65.8
Progression Factor	0.61	0.09		1.24	1.20	2.43				1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1		110.7	0.6	0.1				1.1	1.1	0.2
Delay (s)	39.7	0.8		203.1	20.4	27.3				68.0	68.0	66.0
Level of Service	D	A		F	C	C				E	E	E
Approach Delay (s)		6.5			21.8			0.0			66.3	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

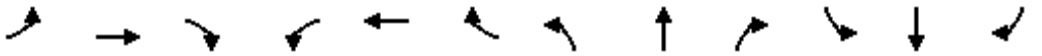
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	123	104	1671	46	65	1942
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	129	109	1759	48	68	2044
RTOR Reduction (vph)	0	91	0	21	0	0
Lane Group Flow (vph)	129	18	1759	27	68	2044
Turn Type		Perm		Perm	Prot	
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	12.3	12.3	42.6	42.6	4.0	50.6
Effective Green, g (s)	12.3	12.3	42.6	42.6	4.0	50.6
Actuated g/C Ratio	0.16	0.16	0.57	0.57	0.05	0.67
Clearance Time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Vehicle Extension (s)	2.5	2.5	3.5	3.5	2.0	3.7
Lane Grp Cap (vph)	290	260	2888	899	94	3431
v/s Ratio Prot	c0.07		0.35		0.04	c0.40
v/s Ratio Perm		0.01		0.02		
v/c Ratio	0.44	0.07	0.61	0.03	0.72	0.60
Uniform Delay, d1	28.3	26.5	10.7	7.1	35.0	6.6
Progression Factor	1.00	1.00	0.83	1.95	1.27	1.15
Incremental Delay, d2	0.8	0.1	0.9	0.1	18.3	0.7
Delay (s)	29.1	26.6	9.8	13.9	62.7	8.3
Level of Service	C	C	A	B	E	A
Approach Delay (s)	27.9		9.9			10.1
Approach LOS	C		A			B

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.1
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



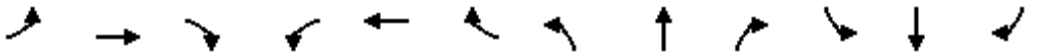
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	118	66	148	1612	1900	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	5085	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	124	69	156	1697	2000	197
RTOR Reduction (vph)	0	63	0	0	0	28
Lane Group Flow (vph)	124	6	156	1697	2000	169
Turn Type		Perm	Prot			Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Actuated Green, G (s)	12.1	12.1	13.5	126.5	108.7	108.7
Effective Green, g (s)	12.1	12.1	13.5	126.5	108.7	108.7
Actuated g/C Ratio	0.08	0.08	0.09	0.84	0.72	0.72
Clearance Time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.1	4.1	4.1
Lane Grp Cap (vph)	277	128	309	4288	3685	1147
v/s Ratio Prot	c0.04		c0.05	0.33	c0.39	
v/s Ratio Perm		0.00				0.11
v/c Ratio	0.45	0.04	0.50	0.40	0.54	0.15
Uniform Delay, d1	65.8	63.6	65.1	2.8	9.4	6.4
Progression Factor	1.00	1.00	1.22	0.64	0.76	0.91
Incremental Delay, d2	0.4	0.1	0.4	0.2	0.5	0.2
Delay (s)	66.2	63.7	79.9	2.0	7.6	6.0
Level of Service	E	E	E	A	A	A
Approach Delay (s)	65.3			8.6	7.5	
Approach LOS	E			A	A	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



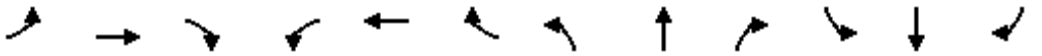
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	11	184	3	39	15	221	1718	8	9	1845	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1718	1583	1770	1784		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.85	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1510	1583	1770	1784		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	12	194	3	41	16	233	1808	8	9	1942	165
RTOR Reduction (vph)	0	0	160	0	9	0	0	0	3	0	0	39
Lane Group Flow (vph)	29	30	34	3	48	0	233	1808	5	9	1942	126
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	3.6	29.6	26.0	0.8	25.2		23.6	101.9	101.9	1.6	79.9	79.9
Effective Green, g (s)	3.6	29.6	26.0	0.8	25.2		23.6	101.9	101.9	1.6	79.9	79.9
Actuated g/C Ratio	0.02	0.20	0.17	0.01	0.17		0.16	0.68	0.68	0.01	0.53	0.53
Clearance Time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	2.5		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	40	303	274	9	300		278	3454	1075	19	2709	843
v/s Ratio Prot	c0.02	c0.00		0.00	c0.03		c0.13	0.36		0.01	c0.38	
v/s Ratio Perm		0.02	0.02						0.00			0.08
v/c Ratio	0.72	0.10	0.12	0.33	0.16		0.84	0.52	0.01	0.47	0.72	0.15
Uniform Delay, d1	72.7	49.3	52.4	74.3	53.3		61.3	12.0	7.7	73.8	26.5	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.67	2.33	2.51	1.16	0.31	0.10
Incremental Delay, d2	42.4	0.2	0.3	7.8	0.2		17.2	0.5	0.0	5.8	0.9	0.1
Delay (s)	115.1	49.5	52.6	82.1	53.5		58.0	28.4	19.4	91.5	9.1	1.9
Level of Service	F	D	D	F	D		E	C	B	F	A	A
Approach Delay (s)		59.4			55.0			31.8			8.8	
Approach LOS		E			D			C			A	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.7
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	8	5	149	257	298	32	1579	117	125	1629	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5068	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5068	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	8	5	157	271	314	34	1662	123	132	1715	40
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	2	8	0	157	271	314	34	1662	123	132	1754	0
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	1.1	8.8	8.8	19.1	26.0	150.0	6.4	93.4	150.0	10.1	97.1	
Effective Green, g (s)	1.1	8.8	8.8	19.1	26.0	150.0	6.4	93.4	150.0	10.1	97.1	
Actuated g/C Ratio	0.01	0.06	0.06	0.13	0.17	1.00	0.04	0.62	1.00	0.07	0.65	
Clearance Time (s)	4.0	4.9	4.9	4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	4.3		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	13	109	93	225	613	1583	76	3166	1583	231	3281	
v/s Ratio Prot	0.00	0.00		c0.09	c0.08		0.02	0.33		c0.04	c0.35	
v/s Ratio Perm			0.00			c0.20			0.08			
v/c Ratio	0.15	0.07	0.00	0.70	0.44	0.20	0.45	0.52	0.08	0.57	0.53	
Uniform Delay, d1	74.0	66.7	66.5	62.7	55.5	0.0	70.1	15.9	0.0	67.9	14.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.10	0.39	1.00	1.33	0.11	
Incremental Delay, d2	2.0	0.7	0.0	7.4	0.8	0.3	1.0	0.2	0.1	1.6	0.5	
Delay (s)	76.0	67.5	66.5	70.1	56.3	0.3	78.1	6.3	0.1	91.8	2.0	
Level of Service	E	E	E	E	E	A	E	A	A	F	A	
Approach Delay (s)		68.3			35.5			7.2			8.3	
Approach LOS		E			D			A			A	

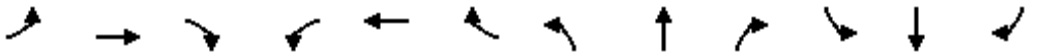
Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	1122	96	44	1712	611	282	1055	62	1068	471	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	5.7	5.7	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.94	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1554	3433	5085	1562	3433	5085	1553	4990	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1554	3433	5085	1562	3433	5085	1553	4990	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	1181	101	46	1802	643	297	1111	65	1124	496	181
RTOR Reduction (vph)	0	0	50	0	0	0	0	0	35	0	0	0
Lane Group Flow (vph)	100	1181	51	46	1802	643	297	1111	30	1124	496	181
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Perm	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			8			Free
Actuated Green, G (s)	5.0	56.8	56.8	4.0	55.8	150.0	16.7	34.7	34.7	34.8	52.8	150.0
Effective Green, g (s)	5.0	56.8	56.8	4.0	55.8	150.0	16.7	34.7	34.7	34.8	52.8	150.0
Actuated g/C Ratio	0.03	0.38	0.38	0.03	0.37	1.00	0.11	0.23	0.23	0.23	0.35	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	3.9	3.9	2.0	3.9		2.0	4.3	4.3	2.0	4.3	
Lane Grp Cap (vph)	114	1926	588	92	1892	1562	382	1176	359	1158	1790	1562
v/s Ratio Prot	c0.03	0.23		0.01	c0.35		0.09	c0.22		c0.23	0.10	
v/s Ratio Perm			0.03			c0.41			0.02			0.12
v/c Ratio	0.88	0.61	0.09	0.50	0.95	0.41	0.78	0.94	0.08	0.97	0.28	0.12
Uniform Delay, d1	72.2	37.7	29.9	72.0	45.8	0.0	64.8	56.7	45.2	57.1	34.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.68	0.47	1.00
Incremental Delay, d2	46.8	1.5	0.3	1.6	11.5	0.8	8.8	15.0	0.2	17.9	0.3	0.1
Delay (s)	119.0	39.2	30.2	73.6	57.3	0.8	73.6	71.8	45.4	56.6	16.8	0.1
Level of Service	F	D	C	E	E	A	E	E	D	E	B	A
Approach Delay (s)		44.3			43.0			71.0			40.0	
Approach LOS		D			D			E			D	

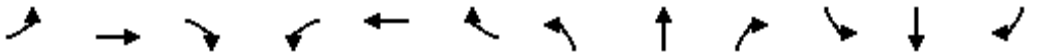
Intersection Summary			
HCM Average Control Delay	48.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	2	22	32	2	142	36	1126	23	70	521	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1778	1583		1779	1583	1770	3529		1770	3532	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1778	1583		1779	1583	1770	3529		1770	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	2	23	34	2	149	38	1185	24	74	548	8
RTOR Reduction (vph)	0	0	21	0	0	120	0	1	0	0	0	0
Lane Group Flow (vph)	0	48	2	0	36	29	38	1208	0	74	556	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		7.8	7.8		15.8	15.8	4.0	39.1		5.5	40.6	
Effective Green, g (s)		8.8	8.8		16.8	16.8	5.0	42.1		6.5	43.6	
Actuated g/C Ratio		0.10	0.10		0.20	0.20	0.06	0.49		0.08	0.51	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		182	162		348	310	103	1730		134	1793	
v/s Ratio Prot		c0.03			c0.02		0.02	c0.34		c0.04	0.16	
v/s Ratio Perm			0.00			0.02						
v/c Ratio		0.26	0.01		0.10	0.09	0.37	0.70		0.55	0.31	
Uniform Delay, d1		35.6	34.7		28.4	28.3	38.9	17.0		38.3	12.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.0	0.0	0.8	1.4		2.8	0.2	
Delay (s)		35.8	34.7		28.4	28.4	39.7	18.4		41.1	12.5	
Level of Service		D	C		C	C	D	B		D	B	
Approach Delay (s)		35.5			28.4			19.1			15.9	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	11.7
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

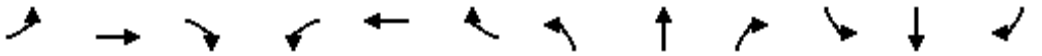


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	185	378	75	723	484	391	749	184	110	363	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1478	1856	3592	1476	3601	3592	1476	3565	5110	1459
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1478	1856	3592	1476	3601	3592	1476	3565	5110	1459
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	195	398	79	761	509	412	788	194	116	382	22
RTOR Reduction (vph)	0	0	116	0	0	259	0	0	101	0	0	16
Lane Group Flow (vph)	16	195	282	79	761	250	412	788	93	116	382	6
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	3.4	28.8	43.7	7.6	33.0	33.0	14.9	29.8	29.8	10.3	25.2	25.2
Effective Green, g (s)	4.4	31.8	45.7	8.6	36.0	36.0	15.9	32.8	32.8	11.3	28.2	28.2
Actuated g/C Ratio	0.05	0.33	0.48	0.09	0.38	0.38	0.17	0.34	0.34	0.12	0.29	0.29
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	85	1191	704	166	1348	554	597	1229	505	420	1503	429
v/s Ratio Prot	0.01	0.05	0.07	c0.04	c0.21		c0.11	c0.22		0.03	0.07	
v/s Ratio Perm			0.12			0.17			0.06			0.00
v/c Ratio	0.19	0.16	0.40	0.48	0.56	0.45	0.69	0.64	0.18	0.28	0.25	0.02
Uniform Delay, d1	44.0	22.7	16.2	41.5	23.7	22.5	37.7	26.6	22.2	38.6	25.8	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.1	0.8	0.8	1.0	2.8	1.4	0.3	0.1	0.2	0.0
Delay (s)	44.4	22.8	16.4	42.3	24.5	23.5	40.5	28.0	22.5	38.7	26.0	24.0
Level of Service	D	C	B	D	C	C	D	C	C	D	C	C
Approach Delay (s)		19.2			25.2			30.9			28.7	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	734	23	14	979	81	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	3.0	1.3	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	773	24	15	1031	85	137
RTOR Reduction (vph)	0	12	0	0	0	105
Lane Group Flow (vph)	773	12	15	1031	85	32
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	24.3	24.3	1.0	31.0	10.4	10.4
Effective Green, g (s)	27.0	25.3	2.0	33.7	11.4	11.4
Actuated g/C Ratio	0.55	0.51	0.04	0.68	0.23	0.23
Clearance Time (s)	5.7	5.7	4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1934	811	72	2414	408	365
v/s Ratio Prot	0.22		0.01	c0.29	c0.05	
v/s Ratio Perm		0.01				0.02
v/c Ratio	0.40	0.02	0.21	0.43	0.21	0.09
Uniform Delay, d1	6.5	5.9	22.9	3.5	15.4	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.5	0.2	0.1	0.0
Delay (s)	6.7	5.9	23.5	3.7	15.4	15.0
Level of Service	A	A	C	A	B	B
Approach Delay (s)	6.7			4.0	15.1	
Approach LOS	A			A	B	

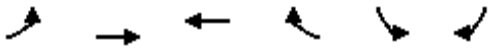
Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	4.3
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	170	575	62	365	250	598	1539	39	83	650	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	114	179	605	65	384	263	629	1620	41	87	684	18
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	114	179	605	65	384	263	629	1620	41	87	684	18
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.3	21.1	120.0	8.0	20.2	120.0	26.5	64.8	120.0	6.4	44.7	120.0
Effective Green, g (s)	10.3	23.8	120.0	9.0	22.9	120.0	27.5	67.8	120.0	7.4	47.7	120.0
Actuated g/C Ratio	0.09	0.20	1.00	0.08	0.19	1.00	0.23	0.56	1.00	0.06	0.40	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	295	702	1562	257	675	1562	787	2873	1562	212	2021	1562
v/s Ratio Prot	0.03	0.05		0.02	c0.11		c0.18	c0.32		0.03	0.13	
v/s Ratio Perm			c0.39			0.17			0.03			0.01
v/c Ratio	0.39	0.25	0.39	0.25	0.57	0.17	0.80	0.56	0.03	0.41	0.34	0.01
Uniform Delay, d1	51.9	40.6	0.0	52.3	44.1	0.0	43.6	16.7	0.0	54.2	25.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.7	0.2	1.6	0.2	5.3	0.8	0.0	0.5	0.1	0.0
Delay (s)	52.2	40.9	0.7	52.5	45.6	0.2	49.0	17.5	0.0	54.7	25.3	0.0
Level of Service	D	D	A	D	D	A	D	B	A	D	C	A
Approach Delay (s)		15.3			29.5			25.8			28.0	
Approach LOS		B			C			C			C	

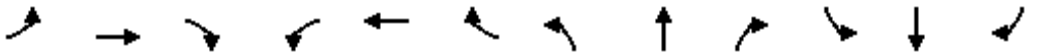
Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.6
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	125	818	608	399	397	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1511	1736	1535
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1511	1736	1535
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	132	861	640	420	418	142
RTOR Reduction (vph)	0	0	0	229	0	57
Lane Group Flow (vph)	132	861	640	191	418	85
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	4.6	25.0	28.0	28.0	18.9	23.5
Effective Green, g (s)	5.6	27.0	30.0	30.0	21.9	29.5
Actuated g/C Ratio	0.09	0.41	0.46	0.46	0.33	0.45
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	148	1424	1583	689	578	688
v/s Ratio Prot	c0.08	c0.25	c0.18		c0.24	0.01
v/s Ratio Perm				0.13		0.04
v/c Ratio	0.89	0.60	0.40	0.28	0.72	0.12
Uniform Delay, d1	29.8	15.2	11.9	11.2	19.3	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	42.8	0.7	0.2	0.2	3.8	0.0
Delay (s)	72.6	15.9	12.1	11.4	23.1	10.6
Level of Service	E	B	B	B	C	B
Approach Delay (s)		23.5	11.8		19.9	
Approach LOS		C	B		B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	739	10	63	991	118	31	3	30	122	5	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00			1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3432		1787	3438	1487	1787	1623			1694	1445
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3432		1787	3438	1487	1787	1623			1694	1445
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	194	778	11	66	1043	124	33	3	32	128	5	26
RTOR Reduction (vph)	0	1	0	0	0	69	0	29	0	0	0	0
Lane Group Flow (vph)	194	788	0	66	1043	55	33	6	0	0	133	26
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	8.2	30.4		2.7	24.9	24.9	4.7	4.7			5.1	5.1
Effective Green, g (s)	9.2	32.4		3.7	26.9	26.9	5.7	5.7			6.1	6.1
Actuated g/C Ratio	0.15	0.53		0.06	0.44	0.44	0.09	0.09			0.10	0.10
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	261	1835		109	1526	660	168	153			171	145
v/s Ratio Prot	c0.11	0.23		0.04	c0.30		c0.02	0.00			c0.08	
v/s Ratio Perm						0.04						0.02
v/c Ratio	0.74	0.43		0.61	0.68	0.08	0.20	0.04			0.78	0.18
Uniform Delay, d1	24.6	8.5		27.7	13.5	9.7	25.3	25.0			26.6	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	9.6	0.2		6.4	1.3	0.1	0.2	0.0			19.6	0.6
Delay (s)	34.2	8.7		34.1	14.7	9.8	25.5	25.0			46.2	25.6
Level of Service	C	A		C	B	A	C	C			D	C
Approach Delay (s)		13.7			15.3			25.3			42.9	
Approach LOS		B			B			C			D	

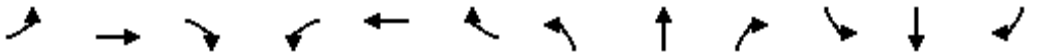
Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	12.7
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	920	291	346	861	127	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1564	1770	3539	1770	1572
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1564	1770	3539	1770	1572
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	968	306	364	906	134	232
RTOR Reduction (vph)	0	60	0	0	0	9
Lane Group Flow (vph)	968	247	364	906	134	223
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	22.9	32.5	13.5	40.4	9.6	23.1
Effective Green, g (s)	24.9	34.5	14.5	42.4	10.6	25.1
Actuated g/C Ratio	0.41	0.58	0.24	0.71	0.18	0.42
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1469	978	428	2501	313	736
v/s Ratio Prot	c0.27	0.04	c0.21	0.26	c0.08	0.07
v/s Ratio Perm		0.11				0.07
v/c Ratio	0.66	0.25	0.85	0.36	0.43	0.30
Uniform Delay, d1	14.1	6.3	21.7	3.5	22.0	11.6
Progression Factor	1.00	1.00	1.11	1.05	1.00	1.00
Incremental Delay, d2	1.1	0.0	14.0	0.4	0.3	0.1
Delay (s)	15.2	6.4	38.2	4.0	22.3	11.7
Level of Service	B	A	D	A	C	B
Approach Delay (s)	13.1			13.8	15.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

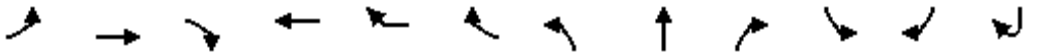
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	912	251	596	611	0	0	0	1162	0	0	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	4.0	4.0				4.0			5.0
Lane Util. Factor		0.91	1.00	0.97	0.95				1.00			1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00				1.00			1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00				1.00			1.00
Frt		1.00	0.85	1.00	1.00				0.86			0.86
Flt Protected		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (prot)		5085	1554	3433	3539				1611			1611
Flt Permitted		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (perm)		5085	1554	3433	3539				1611			1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	960	264	627	643	0	0	0	1223	0	0	646
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	960	206	627	643	0	0	0	1223	0	0	646
Confl. Peds. (#/hr)			5									
Turn Type			Perm	Prot					Free			custom
Protected Phases		2		1								
Permitted Phases			2		Free				Free			4
Actuated Green, G (s)		34.8	34.8	15.5	60.0				60.0			60.0
Effective Green, g (s)		34.8	34.8	15.5	60.0				60.0			60.0
Actuated g/C Ratio		0.58	0.58	0.26	1.00				1.00			1.00
Clearance Time (s)		5.7	5.7	4.0								5.0
Vehicle Extension (s)		3.4	3.4	2.0								3.0
Lane Grp Cap (vph)		2949	901	887	3539				1611			1611
v/s Ratio Prot		0.19		0.18								
v/s Ratio Perm			0.13		0.18				c0.76			0.40
v/c Ratio		0.33	0.23	0.71	0.18				0.76			0.40
Uniform Delay, d1		6.5	6.1	20.2	0.0				0.0			0.0
Progression Factor		0.41	0.20	1.17	1.00				1.00			1.00
Incremental Delay, d2		0.2	0.5	1.2	0.1				3.4			0.2
Delay (s)		2.9	1.7	24.8	0.1				3.4			0.2
Level of Service		A	A	C	A				A			A
Approach Delay (s)		2.7			12.3			3.4			0.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

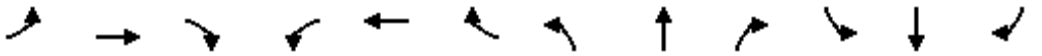


Movement	EBL	EBT	EBR	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL	SBR	SBR2
Lane Configurations												
Volume (vph)	188	1665	221	731	1127	283	162	373	722	93	314	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	5.7	5.7	5.7	4.0	5.3	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	0.86	0.86	1.00	1.00	0.95	1.00	0.97	0.88	
Frpb, ped/bikes	1.00	1.00	0.98	0.99	1.00	1.00	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	0.93	0.85	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1548	4458	1362	1583	1770	3539	1562	3433	2787	
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1548	4458	1362	1583	1770	3539	1562	3433	2787	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	198	1753	233	769	1186	298	171	393	760	98	331	58
RTOR Reduction (vph)	0	0	0	0	0	159	0	0	0	0	14	0
Lane Group Flow (vph)	198	1753	233	1362	593	139	171	393	760	98	375	0
Confl. Peds. (#/hr)			5		5				5		5	
Turn Type	Prot		Free		Prot	Perm	Prot		Free	Prot	custom	
Protected Phases	5	2		6	6		3	8		7	5	
Permitted Phases			Free			6			Free		4	
Actuated Green, G (s)	13.4	73.3	120.0	55.9	55.9	55.9	37.0	21.7	120.0	10.0	13.4	
Effective Green, g (s)	13.4	73.3	120.0	55.9	55.9	55.9	37.0	21.7	120.0	10.0	13.4	
Actuated g/C Ratio	0.11	0.61	1.00	0.47	0.47	0.47	0.31	0.18	1.00	0.08	0.11	
Clearance Time (s)	4.0	5.7		5.7	5.7	5.7	4.0	5.3		4.0	4.0	
Vehicle Extension (s)	2.0	3.4		3.4	3.4	3.4	4.0	4.0		2.0	2.0	
Lane Grp Cap (vph)	383	2162	1548	2077	634	737	546	640	1562	286	311	
v/s Ratio Prot	0.06	0.50		0.31	c0.44		0.10	c0.11		0.03	c0.13	
v/s Ratio Perm			0.15			0.09			c0.49			
v/c Ratio	0.52	0.81	0.15	0.85dr	0.94	0.19	0.31	0.61	0.49	0.34	1.21	
Uniform Delay, d1	50.2	18.0	0.0	24.6	30.3	18.8	31.8	45.3	0.0	51.9	53.3	
Progression Factor	0.98	0.91	1.00	0.48	0.48	0.10	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	2.8	0.2	0.7	19.4	0.1	0.5	2.0	1.1	0.3	118.7	
Delay (s)	49.7	19.2	0.2	12.4	34.0	2.1	32.2	47.3	1.1	52.2	172.0	
Level of Service	D	B	A	B	C	A	C	D	A	D	F	
Approach Delay (s)		20.0		16.7				18.8				
Approach LOS		B		B				B				

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

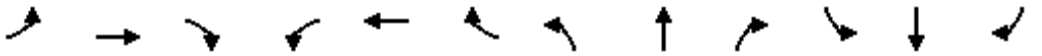
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1974	335	69	1820	32	161	256	144	175	278	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.3	4.0	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.94	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	6408	1562	4990	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	6408	1562	4990	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	200	2078	353	73	1916	34	169	269	152	184	293	168
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	200	2078	353	73	1916	34	169	269	152	184	293	168
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.2	69.6	120.0	7.2	64.6	120.0	10.3	13.6	120.0	10.6	13.5	120.0
Effective Green, g (s)	12.2	69.6	120.0	7.2	64.6	120.0	10.3	13.6	120.0	10.6	13.5	120.0
Actuated g/C Ratio	0.10	0.58	1.00	0.06	0.54	1.00	0.09	0.11	1.00	0.09	0.11	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	3.9		2.0	3.5	
Lane Grp Cap (vph)	349	2949	1562	206	3450	1562	428	576	1562	303	572	1562
v/s Ratio Prot	0.06	c0.41		0.02	c0.30		0.03	c0.05		c0.05	0.06	
v/s Ratio Perm			c0.23			0.02			0.10			0.11
v/c Ratio	0.57	0.70	0.23	0.35	0.56	0.02	0.39	0.47	0.10	0.61	0.51	0.11
Uniform Delay, d1	51.4	17.9	0.0	54.2	18.2	0.0	51.9	49.8	0.0	52.7	50.1	0.0
Progression Factor	0.76	0.46	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.6	0.2	0.4	0.6	0.0	0.2	0.8	0.1	2.4	0.9	0.1
Delay (s)	40.3	8.9	0.2	54.6	18.9	0.0	52.1	50.6	0.1	55.1	51.1	0.1
Level of Service	D	A	A	D	B	A	D	D	A	E	D	A
Approach Delay (s)		10.1			19.9			38.0			38.9	
Approach LOS		B			B			D			D	

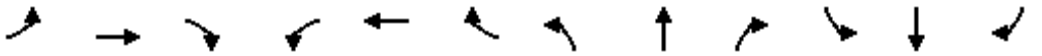
Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.4
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	394	203	4	39	137	70	6	1320	83	54	1441	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.5	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	415	214	4	41	144	74	6	1389	87	57	1517	266
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	415	214	4	41	144	74	6	1389	87	57	1517	266
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	18.6	26.2	120.0	5.5	12.8	120.0	0.6	62.2	120.0	6.7	68.3	120.0
Effective Green, g (s)	19.6	28.7	120.0	6.5	15.3	120.0	1.6	64.7	120.0	7.7	70.8	120.0
Actuated g/C Ratio	0.16	0.24	1.00	0.05	0.13	1.00	0.01	0.54	1.00	0.06	0.59	1.00
Clearance Time (s)	4.0	5.7		4.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.3		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	561	846	1583	96	451	1583	24	2742	1583	114	3000	1583
v/s Ratio Prot	c0.12	0.06		0.02	c0.04		0.00	c0.27		0.03	c0.30	
v/s Ratio Perm			0.00			0.05			0.05			0.17
v/c Ratio	0.74	0.25	0.00	0.43	0.32	0.05	0.25	0.51	0.05	0.50	0.51	0.17
Uniform Delay, d1	47.8	37.0	0.0	54.9	47.6	0.0	58.6	17.5	0.0	54.3	14.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	0.3	0.0	1.1	0.5	0.1	2.0	0.2	0.1	1.3	0.6	0.2
Delay (s)	52.2	37.2	0.0	56.1	48.2	0.1	60.6	17.8	0.1	55.5	15.0	0.2
Level of Service	D	D	A	E	D	A	E	B	A	E	B	A
Approach Delay (s)		46.8			35.7			16.9			14.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

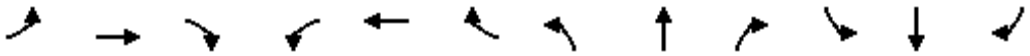


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	124	128	64	180	94	125	1300	52	173	1139	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	131	135	67	189	99	132	1368	55	182	1199	9
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	59	131	135	67	189	99	132	1368	55	182	1199	9
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.6	13.0	120.0	7.1	13.5	120.0	13.0	63.3	120.0	16.5	66.8	120.0
Effective Green, g (s)	7.6	15.5	120.0	8.1	16.0	120.0	14.0	65.8	120.0	17.5	69.3	120.0
Actuated g/C Ratio	0.06	0.13	1.00	0.07	0.13	1.00	0.12	0.55	1.00	0.15	0.58	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	112	457	1583	119	472	1583	207	2788	1583	258	2937	1583
v/s Ratio Prot	0.03	0.04		c0.04	c0.05		c0.07	c0.27		c0.10	0.24	
v/s Ratio Perm			c0.09			0.06			0.03			0.01
v/c Ratio	0.53	0.29	0.09	0.56	0.40	0.06	0.64	0.49	0.03	0.71	0.41	0.01
Uniform Delay, d1	54.5	47.3	0.0	54.2	47.6	0.0	50.6	16.7	0.0	48.8	14.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.4	0.1	3.6	0.7	0.1	4.7	0.6	0.0	7.0	0.1	0.0
Delay (s)	56.5	47.7	0.1	57.8	48.4	0.1	55.3	17.4	0.0	55.8	14.2	0.0
Level of Service	E	D	A	E	D	A	E	B	A	E	B	A
Approach Delay (s)		29.5			36.7			20.0			19.5	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

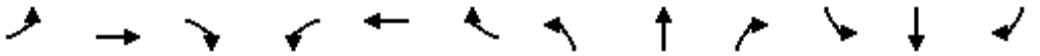
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	1260	440	61	1308	594	591	540	19	440	470	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	6.0		4.0	6.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91		0.94	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5059		4990	5047	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5059		4990	5047	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	1326	463	64	1377	625	622	568	20	463	495	26
RTOR Reduction (vph)	0	0	205	0	0	0	0	3	0	0	4	0
Lane Group Flow (vph)	173	1326	258	64	1377	625	622	585	0	463	517	0
Turn Type	Prot		Perm	Prot		Free	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free						
Actuated Green, G (s)	10.7	54.7	54.7	4.0	48.0	120.0	25.6	26.3		15.0	15.7	
Effective Green, g (s)	10.7	54.7	54.7	4.0	48.0	120.0	25.6	26.3		15.0	15.7	
Actuated g/C Ratio	0.09	0.46	0.46	0.03	0.40	1.00	0.21	0.22		0.12	0.13	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	306	2318	722	114	2034	1583	732	1109		624	660	
v/s Ratio Prot	0.05	c0.26		0.02	c0.27		c0.18	0.12		0.09	c0.10	
v/s Ratio Perm			0.16			c0.39						
v/c Ratio	0.57	0.57	0.36	0.56	0.68	0.39	0.85	0.53		0.74	0.78	
Uniform Delay, d1	52.4	24.0	21.2	57.1	29.6	0.0	45.4	41.4		50.6	50.5	
Progression Factor	0.66	0.34	0.03	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.3	0.4	3.7	1.8	0.7	8.8	0.6		4.2	6.4	
Delay (s)	35.5	8.4	1.1	60.9	31.5	0.7	54.1	41.9		54.8	56.8	
Level of Service	D	A	A	E	C	A	D	D		D	E	
Approach Delay (s)		9.1			23.1			48.2			55.9	
Approach LOS		A			C			D			E	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



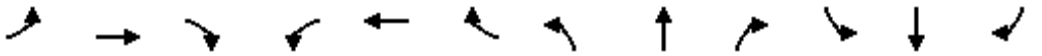
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	0	0	32	6	61	14	1135	13	35	526	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0				3.0	3.0	3.0	4.7		3.0	4.7	
Lane Util. Factor	1.00				1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00				1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770				1787	1583	1770	3533		1770	3535	
Flt Permitted	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770				1787	1583	1770	3533		1770	3535	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	0	0	34	6	64	15	1195	14	37	554	4
RTOR Reduction (vph)	0	0	0	0	0	56	0	1	0	0	0	0
Lane Group Flow (vph)	35	0	0	0	40	8	15	1208	0	37	558	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						4						
Actuated Green, G (s)	5.0				8.9	8.9	1.1	39.5		3.5	41.9	
Effective Green, g (s)	6.0				9.9	9.9	2.1	40.5		4.5	42.9	
Actuated g/C Ratio	0.08				0.13	0.13	0.03	0.54		0.06	0.58	
Clearance Time (s)	4.0				4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0				2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	142				237	210	50	1918		107	2033	
v/s Ratio Prot	c0.02				c0.02		0.01	c0.34		c0.02	0.16	
v/s Ratio Perm						0.01						
v/c Ratio	0.25				0.17	0.04	0.30	0.63		0.35	0.27	
Uniform Delay, d1	32.2				28.7	28.2	35.5	11.8		33.6	8.0	
Progression Factor	1.00				1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3				0.1	0.0	1.2	0.8		0.7	0.1	
Delay (s)	32.5				28.8	28.2	36.8	12.7		34.3	8.1	
Level of Service	C				C	C	D	B		C	A	
Approach Delay (s)		32.5			28.5			13.0			9.8	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	74.6	Sum of lost time (s)	13.7
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



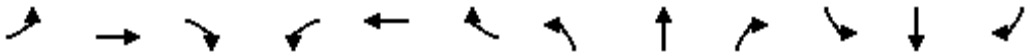
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	391	28	33	1203	69	42	5	18	21	17	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3504		1770	3539	1583		1783	1583		1813	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	3504		1770	3539	1583		1783	1583		1813	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	412	29	35	1266	73	44	5	19	22	18	8
RTOR Reduction (vph)	0	4	0	0	0	29	0	0	17	0	0	7
Lane Group Flow (vph)	61	437	0	35	1266	44	0	49	2	0	40	1
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	3.1	36.1		1.7	34.7	34.7		5.6	5.6		6.8	6.8
Effective Green, g (s)	4.1	39.1		2.7	37.7	35.7		6.6	6.6		7.8	7.8
Actuated g/C Ratio	0.06	0.58		0.04	0.56	0.53		0.10	0.10		0.11	0.11
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	107	2018		70	1965	832		173	154		208	182
v/s Ratio Prot	c0.03	0.12		0.02	c0.36			c0.03			c0.02	
v/s Ratio Perm						0.03			0.00			0.00
v/c Ratio	0.57	0.22		0.50	0.64	0.05		0.28	0.01		0.19	0.01
Uniform Delay, d1	31.0	7.0		31.9	10.5	7.9		28.5	27.7		27.2	26.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	4.5	0.2		2.0	1.3	0.1		0.3	0.0		0.2	0.0
Delay (s)	35.5	7.1		34.0	11.7	7.9		28.8	27.7		27.4	26.6
Level of Service	D	A		C	B	A		C	C		C	C
Approach Delay (s)		10.6			12.1			28.5			27.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	11.7
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



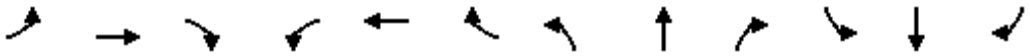
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	252	67	28	611	324	522	1253	34	207	705	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	172	265	71	29	643	341	549	1319	36	218	742	172
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	172	265	71	29	643	341	549	1319	36	218	742	172
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	15.3	36.9	120.0	6.0	27.6	120.0	23.2	46.6	120.0	11.1	34.5	120.0
Effective Green, g (s)	16.3	39.4	120.0	7.0	30.1	120.0	24.2	49.6	120.0	12.1	37.5	120.0
Actuated g/C Ratio	0.14	0.33	1.00	0.06	0.25	1.00	0.20	0.41	1.00	0.10	0.31	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	240	1162	1583	200	888	1583	692	2102	1583	346	1589	1583
v/s Ratio Prot	c0.10	0.07		0.01	c0.18		c0.16	c0.26		c0.06	0.15	
v/s Ratio Perm			0.04			0.22			0.02			0.11
v/c Ratio	0.72	0.23	0.04	0.14	0.72	0.22	0.79	0.63	0.02	0.63	0.47	0.11
Uniform Delay, d1	49.6	29.3	0.0	53.7	41.1	0.0	45.5	27.9	0.0	51.8	33.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	0.2	0.1	0.1	3.4	0.3	5.8	0.8	0.0	2.7	1.0	0.1
Delay (s)	57.8	29.4	0.1	53.8	44.5	0.3	51.4	28.6	0.0	54.5	34.2	0.1
Level of Service	E	C	A	D	D	A	D	C	A	D	C	A
Approach Delay (s)		34.9			29.9			34.6			32.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	442	0	0	191	274	2	2	0	378	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0		3.0	3.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		0.95	0.95	
Frt		1.00			1.00	0.85		1.00		1.00	0.99	
Flt Protected		1.00			1.00	1.00		0.98		0.95	0.95	
Satd. Flow (prot)		3539			1863	1583		1817		1681	1679	
Flt Permitted		1.00			1.00	1.00		1.00		0.95	0.95	
Satd. Flow (perm)		3539			1863	1583		1863		1681	1679	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	465	0	0	201	288	2	2	0	398	0	8
RTOR Reduction (vph)	0	0	0	0	0	118	0	0	0	0	4	0
Lane Group Flow (vph)	0	465	0	0	201	170	0	4	0	203	199	0
Turn Type						pt+ov	Perm			Split		
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases							3					
Actuated Green, G (s)		19.7			13.2	23.6		0.4		10.4	10.4	
Effective Green, g (s)		20.7			14.2	25.6		1.4		11.4	11.4	
Actuated g/C Ratio		0.48			0.33	0.59		0.03		0.26	0.26	
Clearance Time (s)		4.9			4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1			3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1688			610	934		60		442	441	
v/s Ratio Prot		c0.13			c0.11	0.11				c0.12	0.12	
v/s Ratio Perm								c0.00				
v/c Ratio		0.28			0.33	0.18		0.07		0.46	0.45	
Uniform Delay, d1		6.8			11.0	4.1		20.4		13.4	13.4	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.3	0.1		0.2		0.3	0.3	
Delay (s)		6.9			11.3	4.2		20.5		13.7	13.7	
Level of Service		A			B	A		C		B	B	
Approach Delay (s)		6.9			7.1			20.5			13.7	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	13.8
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

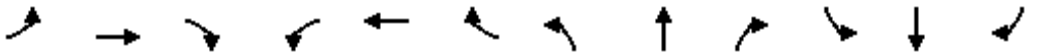


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	826	5	3	482	0	11	0	11	116	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9		3.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		1.00	1.00	
Frt		1.00		1.00	1.00			0.93		1.00	0.85	
Flt Protected		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3536		1770	3539			1695		1770	1583	
Flt Permitted		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3536		1770	3539			1695		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	869	5	3	507	0	12	0	12	122	0	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	12	0	0	3	0
Lane Group Flow (vph)	0	874	0	3	507	0	0	12	0	122	1	0
Turn Type				Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)		25.4		1.0	30.4			1.0		8.1	8.1	
Effective Green, g (s)		26.4		2.0	31.4			2.0		9.1	9.1	
Actuated g/C Ratio		0.50		0.04	0.60			0.04		0.17	0.17	
Clearance Time (s)		4.9		4.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1		2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1781		68	2121			65		307	275	
v/s Ratio Prot		c0.25		0.00	c0.14			c0.01		c0.07	0.00	
v/s Ratio Perm												
v/c Ratio		0.49		0.04	0.24			0.19		0.40	0.00	
Uniform Delay, d1		8.6		24.3	4.9			24.4		19.2	17.9	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.2		0.1	0.1			0.5		0.3	0.0	
Delay (s)		8.8		24.4	5.0			24.9		19.5	17.9	
Level of Service		A		C	A			C		B	B	
Approach Delay (s)		8.8			5.1			24.9			19.5	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	13.8
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

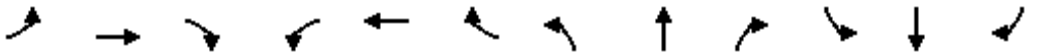
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	944	15	88	532	49	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		3.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3531		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3531		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	994	16	93	560	52	266
RTOR Reduction (vph)	2	0	0	0	0	167
Lane Group Flow (vph)	1008	0	93	560	52	99
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	22.7		3.1	29.8	7.5	7.5
Effective Green, g (s)	23.7		4.1	30.8	8.5	8.5
Actuated g/C Ratio	0.51		0.09	0.67	0.18	0.18
Clearance Time (s)	4.9		4.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	1811		157	2359	326	291
v/s Ratio Prot	c0.29		c0.05	0.16	0.03	
v/s Ratio Perm						c0.06
v/c Ratio	0.56		0.59	0.24	0.16	0.34
Uniform Delay, d1	7.7		20.2	3.0	15.8	16.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4		3.9	0.1	0.1	0.3
Delay (s)	8.0		24.2	3.1	15.9	16.7
Level of Service	A		C	A	B	B
Approach Delay (s)	8.0			6.1	16.5	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	46.2	Sum of lost time (s)	9.9
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



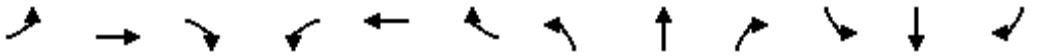
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	1101	4	34	737	90	4	6	12	404	4	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.98			0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3537		1770	3481			1706		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3537		1770	3481			1706		1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	1159	4	36	776	95	4	6	13	425	4	39
RTOR Reduction (vph)	0	0	0	0	6	0	0	13	0	0	0	21
Lane Group Flow (vph)	52	1163	0	36	865	0	0	10	0	212	217	18
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	6.8	75.1		4.3	72.6			2.4		20.7	20.7	20.7
Effective Green, g (s)	7.8	76.1		5.3	73.6			3.4		21.7	21.7	21.7
Actuated g/C Ratio	0.06	0.63		0.04	0.61			0.03		0.18	0.18	0.18
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	115	2243		78	2135			48		304	305	286
v/s Ratio Prot	c0.03	c0.33		0.02	0.25			c0.01		0.13	c0.13	
v/s Ratio Perm												0.01
v/c Ratio	0.45	0.52		0.46	0.41			0.22		0.70	0.71	0.06
Uniform Delay, d1	54.0	12.0		56.0	11.9			57.0		46.1	46.2	40.7
Progression Factor	1.00	1.00		1.26	0.27			1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.9		1.4	0.1			0.8		6.3	7.1	0.1
Delay (s)	55.1	12.8		71.8	3.4			57.8		52.4	53.3	40.8
Level of Service	E	B		E	A			E		D	D	D
Approach Delay (s)		14.6			6.1			57.8			51.8	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



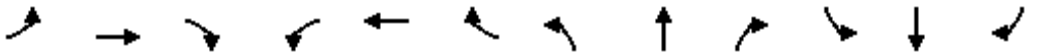
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	1313	15	70	688	904	19	7	29	675	11	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	1.00	*0.80		1.00	0.95	1.00	1.00	1.00	1.00	*0.70	*0.70	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	2975		1770	3539	1583	1770	1863	1583	1239	1244	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	2975		1770	3539	1583	1770	1863	1583	1239	1244	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	211	1382	16	74	724	952	20	7	31	711	12	195
RTOR Reduction (vph)	0	1	0	0	0	475	0	0	30	0	0	138
Lane Group Flow (vph)	211	1397	0	74	724	477	20	7	1	363	360	57
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	15.0	58.9		5.0	48.9	48.9	3.2	3.2	3.2	35.1	35.1	35.1
Effective Green, g (s)	15.0	58.9		5.0	48.9	48.9	3.2	3.2	3.2	35.1	35.1	35.1
Actuated g/C Ratio	0.12	0.49		0.04	0.41	0.41	0.03	0.03	0.03	0.29	0.29	0.29
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.3		2.0	3.5	3.5	2.0	2.0	2.0	2.3	2.3	2.3
Lane Grp Cap (vph)	221	1460		74	1442	645	47	50	42	362	364	463
v/s Ratio Prot	0.12	c0.47		c0.04	0.20		c0.01	0.00		c0.29	0.29	
v/s Ratio Perm						0.30			0.00			0.04
v/c Ratio	0.95	0.96		1.00	0.50	0.74	0.43	0.14	0.02	1.00	0.99	0.12
Uniform Delay, d1	52.2	29.3		57.5	26.5	30.1	57.5	57.1	56.9	42.5	42.3	31.2
Progression Factor	1.13	0.83		0.85	0.83	1.48	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.9	14.1		54.3	0.1	1.3	2.2	0.5	0.1	48.0	43.7	0.1
Delay (s)	102.8	38.3		103.4	22.1	45.9	59.7	57.5	56.9	90.4	86.0	31.2
Level of Service	F	D		F	C	D	E	E	E	F	F	C
Approach Delay (s)		46.8			38.5			58.0			76.1	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	49.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



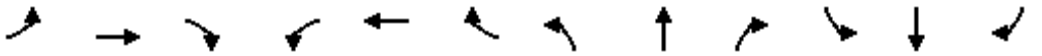
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	988	338	0	1502	1062	0	0	0	225	633	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.9		2.9	3.0				3.7	4.3	3.7
Lane Util. Factor		0.95	1.00		0.91	0.91				0.95	*0.85	1.00
Frt		1.00	0.85		0.98	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3539	1583		3309	1441				1681	1581	1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3539	1583		3309	1441				1681	1581	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1040	356	0	1581	1118	0	0	0	237	666	159
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	1040	356	0	1870	816	0	0	0	213	690	148
Turn Type			Prot			Free				Split		Prot
Protected Phases		2	2		6					4	4	4
Permitted Phases						Free						
Actuated Green, G (s)		62.1	62.1		62.1	120.0				47.7	47.7	47.7
Effective Green, g (s)		63.7	63.1		64.1	120.0				49.3	48.7	49.3
Actuated g/C Ratio		0.53	0.53		0.53	1.00				0.41	0.41	0.41
Clearance Time (s)		4.9	4.9		4.9					5.3	5.3	5.3
Vehicle Extension (s)		3.8	3.8		3.8					2.0	2.0	2.0
Lane Grp Cap (vph)		1879	832		1768	1441				691	642	650
v/s Ratio Prot		0.29	0.22		c0.57					0.13	c0.44	0.09
v/s Ratio Perm						0.57						
v/c Ratio		0.55	0.43		1.06	0.57				0.31	1.07	0.23
Uniform Delay, d1		18.7	17.4		28.0	0.0				23.8	35.6	23.0
Progression Factor		0.75	0.71		0.73	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.4	0.5		34.7	1.0				0.1	57.3	0.1
Delay (s)		14.5	12.8		55.0	1.0				23.9	93.0	23.0
Level of Service		B	B		E	A				C	F	C
Approach Delay (s)		14.1			38.7			0.0			68.6	
Approach LOS		B			D			A			E	

Intersection Summary			
HCM Average Control Delay	38.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	201	1012	0	0	1545	275	0	0	1395	0	0	1019
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.0			3.0			2.0
Lane Util. Factor	1.00	0.86			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			4793	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			4793	1362			1611			2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	212	1065	0	0	1626	289	0	0	1468	0	0	1073
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	7
Lane Group Flow (vph)	212	1065	0	0	1652	260	0	0	1468	0	0	1066
Turn Type	Prot					Free			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						Free			Free			
Actuated Green, G (s)	24.9	60.0			26.2	60.0			60.0			24.9
Effective Green, g (s)	26.9	60.0			28.2	60.0			60.0			26.9
Actuated g/C Ratio	0.45	1.00			0.47	1.00			1.00			0.45
Clearance Time (s)	4.0	4.9			4.9							4.0
Vehicle Extension (s)	2.0	3.9			3.8							2.0
Lane Grp Cap (vph)	794	6408			2253	1362			1611			1250
v/s Ratio Prot	0.12	0.17			0.34							0.38
v/s Ratio Perm						0.19			c0.91			
v/c Ratio	0.27	0.17			0.73	0.19			0.91			0.85
Uniform Delay, d1	10.4	0.0			12.9	0.0			0.0			14.8
Progression Factor	1.69	1.00			0.72	1.00			1.00			1.00
Incremental Delay, d2	0.1	0.0			1.7	0.2			9.3			5.6
Delay (s)	17.6	0.0			11.0	0.2			9.3			20.4
Level of Service	B	A			B	A			A			C
Approach Delay (s)		2.9			9.5			9.3			20.4	
Approach LOS		A			A			A			C	

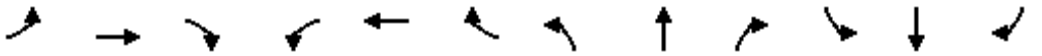
Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	388	1799	220	108	1328	64	332	567	69	54	164	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9	4.9	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1554	3433	6358		3433	3539	1547	3433	5085	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1554	3433	6358		3433	3539	1547	3433	5085	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	408	1894	232	114	1398	67	349	597	73	57	173	169
RTOR Reduction (vph)	0	0	76	0	5	0	0	0	55	0	0	5
Lane Group Flow (vph)	408	1894	156	114	1460	0	349	597	18	57	173	164
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		custom	Prot			Prot		Perm	Prot		custom
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2 3						8			4 5
Actuated Green, G (s)	23.7	61.5	80.9	6.8	44.6		14.5	29.9	29.9	4.0	19.0	42.7
Effective Green, g (s)	23.7	61.5	80.9	6.8	44.6		14.5	29.9	29.9	4.0	19.0	42.7
Actuated g/C Ratio	0.20	0.51	0.67	0.06	0.37		0.12	0.25	0.25	0.03	0.16	0.36
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.9	4.9	4.0	5.3	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5	4.5	2.0	5.1	
Lane Grp Cap (vph)	678	2606	1048	195	2363		415	882	385	114	805	553
v/s Ratio Prot	0.12	c0.37		0.03	c0.23		c0.10	c0.17		0.02	0.03	
v/s Ratio Perm			0.10						0.01			0.11
v/c Ratio	0.60	0.73	0.15	0.58	0.62		0.84	0.68	0.05	0.50	0.21	0.30
Uniform Delay, d1	43.9	22.7	7.1	55.2	30.7		51.6	40.7	34.2	57.0	44.0	27.8
Progression Factor	0.86	0.75	0.43	0.84	0.62		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	1.5	0.0	2.6	0.6		13.7	2.5	0.1	1.3	0.3	0.7
Delay (s)	38.4	18.5	3.1	49.0	19.7		65.3	43.1	34.3	58.3	44.3	28.5
Level of Service	D	B	A	D	B		E	D	C	E	D	C
Approach Delay (s)		20.3			21.9			50.1			39.6	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

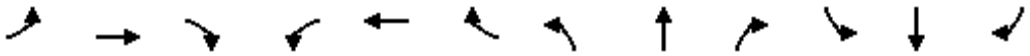
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	1937	46	43	1426	28	37	16	64	32	14	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5063		1770	5085	1523	1770	1863	1583	1681	1735	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (perm)	1770	5063		1770	5085	1523	1770	1863	1583	1681	1735	1555
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	94	2039	48	45	1501	29	39	17	67	34	15	41
RTOR Reduction (vph)	0	1	0	0	0	9	0	0	64	0	0	38
Lane Group Flow (vph)	94	2086	0	45	1501	20	39	17	3	24	25	3
Confl. Peds. (#/hr)			5			5						5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	10.3	82.8		4.8	77.3	77.3	5.6	5.6	5.6	9.9	9.9	9.9
Effective Green, g (s)	10.3	82.8		4.8	77.3	77.3	5.6	5.6	5.6	9.9	9.9	9.9
Actuated g/C Ratio	0.09	0.69		0.04	0.64	0.64	0.05	0.05	0.05	0.08	0.08	0.08
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.7		2.0	5.6	5.6	2.5	2.5	2.5	2.0	2.0	2.0
Lane Grp Cap (vph)	152	3493		71	3276	981	83	87	74	139	143	128
v/s Ratio Prot	0.05	c0.41		c0.03	0.30		c0.02	0.01		0.01	c0.01	
v/s Ratio Perm						0.01			0.00			0.00
v/c Ratio	0.62	0.60		0.63	0.46	0.02	0.47	0.20	0.04	0.17	0.17	0.03
Uniform Delay, d1	53.0	9.8		56.7	10.8	7.7	55.8	55.0	54.6	51.2	51.2	50.6
Progression Factor	1.24	0.35		0.50	0.11	0.04	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.6		11.5	0.2	0.0	3.0	0.8	0.2	0.2	0.2	0.0
Delay (s)	69.9	4.0		39.8	1.5	0.3	58.8	55.8	54.8	51.5	51.5	50.6
Level of Service	E	A		D	A	A	E	E	D	D	D	D
Approach Delay (s)		6.9			2.5			56.2			51.1	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

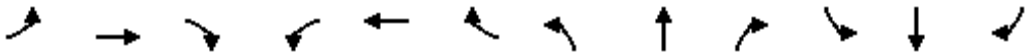
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	1908	37	15	1436	26	118	48	25	56	6	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	4.0		4.6	4.6	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00	0.90	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.97	
Satd. Flow (prot)	1770	5085	1435	1770	5085	1428	1681	1681		1681	1624	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.97	
Satd. Flow (perm)	1770	5085	1435	1770	5085	1428	1681	1681		1681	1624	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	2008	39	16	1512	27	124	51	26	59	6	12
RTOR Reduction (vph)	0	0	11	0	0	8	0	11	0	0	10	0
Lane Group Flow (vph)	12	2008	28	16	1512	19	100	90	0	39	28	0
Confl. Peds. (#/hr)			20			20						20
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.2	71.3	71.3	1.2	71.3	71.3	10.6	10.6		19.4	19.4	
Effective Green, g (s)	1.2	71.3	71.3	1.2	71.3	71.3	10.6	10.6		19.4	19.4	
Actuated g/C Ratio	0.01	0.59	0.59	0.01	0.59	0.59	0.09	0.09		0.16	0.16	
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	4.0		4.6	4.6	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.5	2.5		2.0	2.0	
Lane Grp Cap (vph)	18	3021	853	18	3021	848	148	148		272	263	
v/s Ratio Prot	0.01	c0.39		c0.01	0.30		c0.06	0.05		c0.02	0.02	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.67	0.66	0.03	0.89	0.50	0.02	0.68	0.61		0.14	0.11	
Uniform Delay, d1	59.2	16.3	10.1	59.3	14.1	10.0	53.0	52.7		43.2	42.9	
Progression Factor	0.68	0.35	0.25	0.74	0.08	0.01	1.00	1.00		1.00	1.00	
Incremental Delay, d2	46.8	0.7	0.0	147.1	0.6	0.0	10.5	5.9		0.1	0.1	
Delay (s)	87.1	6.5	2.5	191.3	1.7	0.1	63.6	58.6		43.3	43.0	
Level of Service	F	A	A	F	A	A	E	E		D	D	
Approach Delay (s)		6.9			3.6			61.1			43.1	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

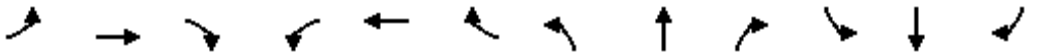
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	1771	66	6	1461	0	14	4	11	27	1	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.89		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5052		1770	5085		1770	1625		1770	1563	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5052		1770	5085		1770	1625		1770	1563	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	62	1864	69	6	1538	0	15	4	12	28	1	18
RTOR Reduction (vph)	0	2	0	0	0	0	0	11	0	0	17	0
Lane Group Flow (vph)	62	1931	0	6	1538	0	15	5	0	28	2	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	15.0	91.4		0.6	77.0		2.8	6.4		4.7	8.3	
Effective Green, g (s)	15.0	91.4		0.6	77.0		2.8	6.4		4.7	8.3	
Actuated g/C Ratio	0.12	0.76		0.00	0.64		0.02	0.05		0.04	0.07	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	5.8		2.0	5.8		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	221	3848		9	3263		41	87		69	108	
v/s Ratio Prot	0.04	c0.38		0.00	c0.30		0.01	c0.00		c0.02	0.00	
v/s Ratio Perm												
v/c Ratio	0.28	0.50		0.67	0.47		0.37	0.05		0.41	0.02	
Uniform Delay, d1	47.6	5.5		59.6	11.0		57.7	53.9		56.3	52.1	
Progression Factor	0.53	0.07		0.95	0.75		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.4		81.4	0.2		5.5	0.3		3.9	0.1	
Delay (s)	25.6	0.8		137.8	8.6		63.2	54.2		60.2	52.1	
Level of Service	C	A		F	A		E	D		E	D	
Approach Delay (s)		1.5			9.1			58.5			56.9	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

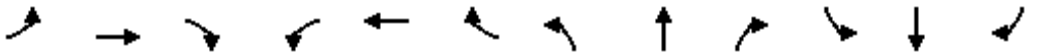
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	1579	49	44	1268	122	169	722	375	92	319	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.0	4.0	4.9	4.0	5.0	6.7	6.7	5.0	6.3	6.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1562	3433	5085	1555	3433	5085	1556
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1562	3433	5085	1555	3433	5085	1556
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	141	1662	52	46	1335	128	178	760	395	97	336	64
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	38	0	0	51
Lane Group Flow (vph)	141	1662	52	46	1335	128	178	760	357	97	336	13
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			8			4
Actuated Green, G (s)	8.3	62.9	120.0	2.4	57.0	120.0	9.8	29.1	29.1	5.0	24.7	24.7
Effective Green, g (s)	8.3	62.9	120.0	2.4	57.0	120.0	9.8	29.1	29.1	5.0	24.7	24.7
Actuated g/C Ratio	0.07	0.52	1.00	0.02	0.48	1.00	0.08	0.24	0.24	0.04	0.21	0.21
Clearance Time (s)	4.0	4.9		4.0	4.9		5.0	6.7	6.7	5.0	6.3	6.3
Vehicle Extension (s)	2.0	5.6		2.0	5.6		2.0	2.7	2.7	2.0	3.1	3.1
Lane Grp Cap (vph)	237	2665	1562	69	2415	1562	280	1233	377	143	1047	320
v/s Ratio Prot	0.04	c0.33		0.01	c0.26		0.05	0.15		c0.03	0.07	
v/s Ratio Perm			0.03			0.08			c0.23			0.01
v/c Ratio	0.59	0.62	0.03	0.67	0.55	0.08	0.64	0.62	0.95	0.68	0.32	0.04
Uniform Delay, d1	54.2	20.2	0.0	58.4	22.4	0.0	53.4	40.5	44.7	56.7	40.5	38.2
Progression Factor	0.88	0.74	1.00	0.70	0.51	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	1.0	0.0	12.7	0.4	0.1	3.4	0.8	32.6	9.6	0.2	0.1
Delay (s)	50.0	15.9	0.0	53.6	11.8	0.1	56.8	41.3	77.3	66.3	40.7	38.2
Level of Service	D	B	A	D	B	A	E	D	E	E	D	D
Approach Delay (s)		18.1			12.1			54.1			45.4	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

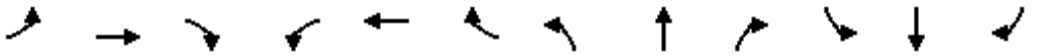


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	1463	215	265	1842	191	428	813	236	191	624	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	3.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	4.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1541
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1541
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	232	1540	226	279	1939	201	451	856	248	201	657	146
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	116
Lane Group Flow (vph)	232	1540	226	279	1939	201	451	856	248	201	657	30
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			4
Actuated Green, G (s)	9.8	45.1	120.0	12.0	49.3	120.0	17.6	30.1	120.0	11.1	23.6	23.6
Effective Green, g (s)	10.8	48.1	120.0	13.0	52.3	120.0	18.6	33.1	120.0	12.1	26.6	24.6
Actuated g/C Ratio	0.09	0.40	1.00	0.11	0.44	1.00	0.16	0.28	1.00	0.10	0.22	0.21
Clearance Time (s)	4.0	6.0		6.0	6.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.1		2.0	3.3		2.0	4.2		2.0	4.5	4.5
Lane Grp Cap (vph)	299	2038	1560	360	2216	1560	514	1403	1560	335	1127	316
v/s Ratio Prot	0.07	c0.30		0.08	c0.38		c0.14	c0.17		0.06	0.13	
v/s Ratio Perm			0.14			0.13			0.16			0.02
v/c Ratio	0.78	0.76	0.14	0.78	0.88	0.13	0.88	0.61	0.16	0.60	0.58	0.09
Uniform Delay, d1	53.4	30.9	0.0	52.1	30.9	0.0	49.6	37.8	0.0	51.6	41.7	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.9	2.7	0.2	9.2	4.3	0.2	15.1	1.0	0.2	1.9	1.1	0.2
Delay (s)	64.3	33.6	0.2	61.2	35.1	0.2	64.7	38.8	0.2	53.6	42.8	38.9
Level of Service	E	C	A	E	D	A	E	D	A	D	D	D
Approach Delay (s)		33.4			35.2			40.1			44.4	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

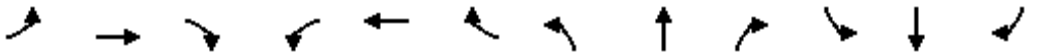
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	552	1683	410	553	2111	501
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	4.0	5.3	5.3	6.0	6.0
Lane Util. Factor	0.97	0.88	0.95	1.00	0.97	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	2787	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	3539	1583	3433	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	581	1772	432	582	2222	527
RTOR Reduction (vph)	0	0	0	193	0	0
Lane Group Flow (vph)	581	1772	432	389	2222	527
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	22.7	150.0	28.7	28.7	82.0	116.0
Effective Green, g (s)	22.7	150.0	28.7	28.7	82.0	116.0
Actuated g/C Ratio	0.15	1.00	0.19	0.19	0.55	0.77
Clearance Time (s)	5.3		5.3	5.3	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	520	2787	677	303	1877	1441
v/s Ratio Prot	c0.17		0.12		c0.65	0.28
v/s Ratio Perm		0.64		c0.25		
v/c Ratio	1.12	0.64	0.64	1.28	1.18	0.37
Uniform Delay, d1	63.6	0.0	55.9	60.6	34.0	5.4
Progression Factor	0.81	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	63.6	0.4	2.0	150.2	88.5	0.2
Delay (s)	114.9	0.4	57.8	210.8	122.5	5.5
Level of Service	F	A	E	F	F	A
Approach Delay (s)	28.7		145.6			100.1
Approach LOS	C		F			F

Intersection Summary			
HCM Average Control Delay	80.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	424	2141	66	99	1857	92	87	140	130	42	16	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3523		3433	3539	1583	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3523		3433	3539	1583	1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	446	2254	69	104	1955	97	92	147	137	44	17	322
RTOR Reduction (vph)	0	1	0	0	0	14	0	0	115	0	0	220
Lane Group Flow (vph)	446	2322	0	104	1955	83	92	147	22	44	17	102
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	18.3	94.1		8.9	84.7	84.7	11.9	23.7	23.7	5.4	16.1	16.1
Effective Green, g (s)	18.3	94.1		8.9	84.7	84.7	11.9	23.7	23.7	5.4	16.1	16.1
Actuated g/C Ratio	0.12	0.63		0.06	0.56	0.56	0.08	0.16	0.16	0.04	0.11	0.11
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.9		2.0	3.9	3.9	2.0	4.4	4.4	2.0	3.6	3.6
Lane Grp Cap (vph)	419	2210		204	1998	894	140	294	250	124	200	170
v/s Ratio Prot	0.13	c0.66		0.03	c0.55		c0.05	c0.08		0.01	0.01	
v/s Ratio Perm						0.05			0.01			0.06
v/c Ratio	1.06	1.05		0.51	0.98	0.09	0.66	0.50	0.09	0.35	0.09	0.60
Uniform Delay, d1	65.8	28.0		68.4	31.8	15.0	67.1	57.7	53.9	70.6	60.3	63.9
Progression Factor	0.64	0.20		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.4	24.2		0.7	15.2	0.1	8.2	2.2	0.2	0.6	0.2	6.3
Delay (s)	76.9	29.7		69.2	47.0	15.1	75.3	59.9	54.2	71.2	60.5	70.2
Level of Service	E	C		E	D	B	E	E	D	E	E	E
Approach Delay (s)		37.3			46.6			61.6			69.9	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	44.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

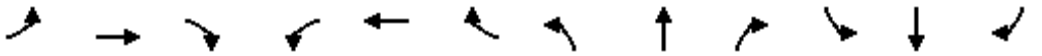


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	2339	6	13	2042	7	9	0	35	54	3	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3			11.0			11.0	11.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (prot)	1770	3538		1770	3537			1644			1778	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.92			0.70	1.00
Satd. Flow (perm)	1770	3538		1770	3537			1522			1310	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	2462	6	14	2149	7	9	0	37	57	3	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	35	0	0	0	22
Lane Group Flow (vph)	6	2468	0	14	2156	0	0	11	0	0	60	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	7	4		3	8			2			2	
Permitted Phases							2			2		2
Actuated Green, G (s)	0.8	80.4		2.4	82.0			6.9			6.9	6.9
Effective Green, g (s)	0.8	80.4		2.4	82.0			6.9			6.9	6.9
Actuated g/C Ratio	0.01	0.73		0.02	0.75			0.06			0.06	0.06
Clearance Time (s)	4.0	5.3		4.0	5.3			11.0			11.0	11.0
Vehicle Extension (s)	2.0	3.0		2.0	3.9			2.0			2.0	2.0
Lane Grp Cap (vph)	13	2586		39	2637			95			82	99
v/s Ratio Prot	c0.00	c0.70		0.01	c0.61							
v/s Ratio Perm								0.01			c0.05	0.00
v/c Ratio	0.46	0.95		0.36	0.82			0.12			0.73	0.02
Uniform Delay, d1	54.4	13.2		53.0	9.1			48.7			50.6	48.4
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	9.1	9.8		2.1	2.2			0.2			24.8	0.0
Delay (s)	63.5	23.0		55.1	11.3			48.9			75.5	48.4
Level of Service	E	C		E	B			D			E	D
Approach Delay (s)		23.1			11.6			48.9			67.7	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2448	21	368	2078	0	357
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0	5.3		6.0
Lane Util. Factor	0.91		0.97	0.91		1.00
Frt	1.00		1.00	1.00		0.86
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5079		3433	5085		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5079		3433	5085		1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2577	22	387	2187	0	376
RTOR Reduction (vph)	1	0	0	0	0	1
Lane Group Flow (vph)	2598	0	387	2187	0	375
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	41.7		20.0	75.0		20.0
Effective Green, g (s)	41.7		20.0	75.0		20.0
Actuated g/C Ratio	0.56		0.27	1.00		0.27
Clearance Time (s)	7.3		6.0	5.3		6.0
Vehicle Extension (s)	3.5		2.0	3.5		2.0
Lane Grp Cap (vph)	2824		915	5085		430
v/s Ratio Prot	c0.51		0.11	0.43		c0.23
v/s Ratio Perm						
v/c Ratio	0.92		0.42	0.43		0.87
Uniform Delay, d1	15.1		22.7	0.0		26.3
Progression Factor	1.00		1.17	1.00		1.00
Incremental Delay, d2	6.2		0.0	0.1		16.8
Delay (s)	21.4		26.6	0.1		43.1
Level of Service	C		C	A		D
Approach Delay (s)	21.4			4.1	43.1	
Approach LOS	C			A	D	

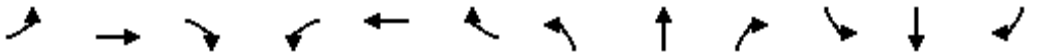
Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	303	1190	1312	72	1190	281	1149	686	150	215	172	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	4.0	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4916	2787	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4916	2787	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	319	1253	1381	76	1253	296	1209	722	158	226	181	117
RTOR Reduction (vph)	0	0	0	0	0	93	0	0	83	0	0	108
Lane Group Flow (vph)	319	1253	1381	76	1253	203	1209	722	75	226	181	9
Parking (#/hr)		0										
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			2			6
Actuated Green, G (s)	13.0	62.9	150.0	6.6	56.1	56.1	50.0	48.5	48.5	13.4	11.9	11.9
Effective Green, g (s)	13.0	62.9	150.0	6.6	56.1	56.1	50.0	48.5	48.5	13.4	11.9	11.9
Actuated g/C Ratio	0.09	0.42	1.00	0.04	0.37	0.37	0.33	0.32	0.32	0.09	0.08	0.08
Clearance Time (s)	4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.9		2.0	3.5	3.5	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	298	2061	2787	151	1324	592	1144	1144	512	307	403	126
v/s Ratio Prot	c0.09	0.25		0.02	c0.35		c0.35	0.20		c0.07	0.04	
v/s Ratio Perm			c0.50			0.13			0.05			0.01
v/c Ratio	1.07	0.61	0.50	0.50	0.95	0.34	1.06	0.63	0.15	0.74	0.45	0.07
Uniform Delay, d1	68.5	33.9	0.0	70.1	45.5	33.7	50.0	43.1	36.1	66.6	65.9	63.9
Progression Factor	0.86	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.1	0.2	0.2	1.0	14.9	1.6	43.0	1.3	0.2	7.7	1.1	0.3
Delay (s)	111.7	25.7	0.2	71.1	60.3	35.3	93.0	44.4	36.2	74.3	67.0	64.3
Level of Service	F	C	A	E	E	D	F	D	D	E	E	E
Approach Delay (s)		23.1			56.3			71.9			69.5	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	48.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

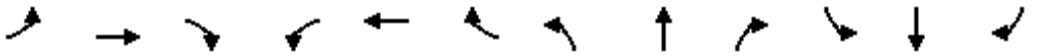


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	1323	79	22	1514	5	24	1	405	5	4	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.97	1.00
Satd. Flow (prot)	1762	3615		1711	3538			1777	1583		1812	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00		0.97	1.00
Satd. Flow (perm)	1762	3615		1711	3538			1777	1583		1812	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	1393	83	23	1594	5	25	1	426	5	4	6
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	63	0	0	6
Lane Group Flow (vph)	4	1473	0	23	1599	0	0	26	363	0	9	0
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	0.6	69.2		24.1	94.4			5.7	29.8		1.6	1.6
Effective Green, g (s)	1.6	71.7		25.1	96.9			7.2	32.8		3.1	3.1
Actuated g/C Ratio	0.01	0.60		0.21	0.81			0.06	0.27		0.03	0.03
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	23	2160		358	2857			107	466		47	38
v/s Ratio Prot	0.00	c0.41		0.01	0.45			0.01	c0.17		c0.00	
v/s Ratio Perm									0.06			0.00
v/c Ratio	0.17	0.68		0.06	0.56			0.24	0.78		0.19	0.00
Uniform Delay, d1	58.5	16.4		38.0	4.1			53.8	40.2		57.2	56.9
Progression Factor	1.00	1.00		1.23	0.62			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	1.0		0.0	0.7			0.4	7.3		0.7	0.0
Delay (s)	59.9	17.4		46.9	3.2			54.2	47.6		57.9	57.0
Level of Service	E	B		D	A			D	D		E	E
Approach Delay (s)		17.5			3.8			48.0			57.6	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

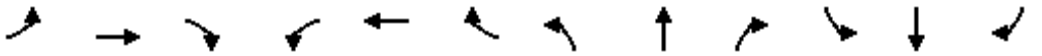
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1706	19	22	1368	170	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3533		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3533		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1796	20	23	1440	179	214
RTOR Reduction (vph)	1	0	0	0	0	88
Lane Group Flow (vph)	1815	0	23	1440	179	126
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	82.5		3.1	89.6	16.1	16.1
Effective Green, g (s)	84.5		5.1	91.6	18.1	18.1
Actuated g/C Ratio	0.70		0.04	0.76	0.15	0.15
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2488		75	2701	267	239
v/s Ratio Prot	c0.51		0.01	c0.41	c0.10	
v/s Ratio Perm						0.08
v/c Ratio	0.73		0.31	0.53	0.67	0.53
Uniform Delay, d1	10.8		55.7	5.7	48.1	47.0
Progression Factor	0.42		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.8	0.8	5.9	1.6
Delay (s)	5.4		56.6	6.4	54.0	48.6
Level of Service	A		E	A	D	D
Approach Delay (s)	5.4			7.2	51.1	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	301	895	685	150	510	28	764	1475	200	106	896	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3508		3433	3539	1552	3433	5085	1550
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3508		3433	3539	1552	3433	5085	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	317	942	721	158	537	29	804	1553	211	112	943	112
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	64	0	0	81
Lane Group Flow (vph)	317	942	721	158	563	0	804	1553	147	112	943	31
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	11.0	35.2	120.0	5.4	30.0		28.7	56.0	56.0	4.0	31.7	31.7
Effective Green, g (s)	12.0	36.7	120.0	6.4	31.5		29.7	57.5	57.0	5.0	33.2	32.7
Actuated g/C Ratio	0.10	0.31	1.00	0.05	0.26		0.25	0.48	0.48	0.04	0.28	0.27
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	343	1082	1561	183	921		850	1696	737	143	1407	422
v/s Ratio Prot	c0.09	c0.27		c0.05	0.16		c0.23	c0.44		0.03	c0.19	
v/s Ratio Perm			0.46						0.09			0.02
v/c Ratio	0.92	0.87	0.46	0.86	0.61		0.95	0.92	0.20	0.78	0.67	0.07
Uniform Delay, d1	53.5	39.4	0.0	56.4	38.9		44.4	29.0	18.3	57.0	38.5	32.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.82	1.25	1.56	1.00	1.00	1.00
Incremental Delay, d2	29.4	8.0	1.0	30.9	1.4		13.4	6.2	0.4	22.2	1.4	0.1
Delay (s)	83.0	47.4	1.0	87.3	40.2		50.0	42.6	28.9	79.2	39.9	32.5
Level of Service	F	D	A	F	D		D	D	C	E	D	C
Approach Delay (s)		36.2			50.5			43.8			43.0	
Approach LOS		D			D			D			D	

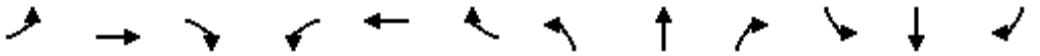
Intersection Summary			
HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	1179	2	19	673	85	43	72	90	4	8	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.98	1.00
Satd. Flow (prot)	1770	3538		1770	3465			1829	1550		1832	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00		0.98	1.00
Satd. Flow (perm)	1770	3538		1770	3465			1829	1550		1832	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	203	1241	2	20	708	89	45	76	95	4	8	4
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	52	0	0	4
Lane Group Flow (vph)	203	1243	0	20	791	0	0	121	43	0	12	0
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	20.4	84.6		2.9	67.1			12.8	12.8		2.4	2.4
Effective Green, g (s)	21.4	86.6		3.9	69.1			13.8	13.8		3.4	3.4
Actuated g/C Ratio	0.18	0.72		0.03	0.58			0.12	0.12		0.03	0.03
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	316	2553		58	1995			210	178		52	45
v/s Ratio Prot	c0.11	c0.35		0.01	c0.23			c0.07			c0.01	
v/s Ratio Perm									0.03			0.00
v/c Ratio	0.64	0.49		0.34	0.40			0.58	0.24		0.23	0.00
Uniform Delay, d1	45.7	7.2		56.8	14.0			50.3	48.3		57.0	56.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	3.3	0.3		1.3	0.6			2.4	0.3		0.8	0.0
Delay (s)	49.1	7.5		58.1	14.6			52.7	48.6		57.8	56.7
Level of Service	D	A		E	B			D	D		E	E
Approach Delay (s)		13.3			15.6			50.9			57.6	
Approach LOS		B			B			D			E	

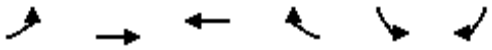
Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



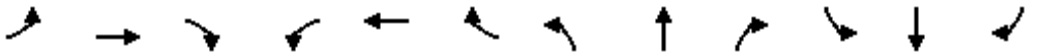
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	1233	0	25	661	14	68	2	26	43	0	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.8		3.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3528			1734			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.77	1.00
Satd. Flow (perm)	1770	3539		1770	3528			1379			1439	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	1298	0	26	696	15	72	2	27	45	0	68
RTOR Reduction (vph)	0	0	0	0	2	0	0	22	0	0	0	55
Lane Group Flow (vph)	22	1298	0	26	709	0	0	79	0	0	45	13
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	0.4	23.7		0.4	23.7			7.3			7.3	7.3
Effective Green, g (s)	1.4	26.2		1.4	26.2			8.3			8.3	8.3
Actuated g/C Ratio	0.03	0.59		0.03	0.59			0.19			0.19	0.19
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	55	2074		55	2068			256			267	294
v/s Ratio Prot	0.01	c0.37		c0.01	0.20							
v/s Ratio Perm								c0.06			0.03	0.01
v/c Ratio	0.40	0.63		0.47	0.34			0.31			0.17	0.04
Uniform Delay, d1	21.2	6.0		21.3	4.8			15.7			15.3	14.9
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.7	0.6		2.3	0.1			0.5			0.2	0.0
Delay (s)	23.0	6.7		23.6	4.9			16.2			15.5	15.0
Level of Service	C	A		C	A			B			B	B
Approach Delay (s)		6.9			5.6			16.2			15.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	44.7	Sum of lost time (s)	8.8
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	645	548	600	375	150	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.94		1.00	0.85
Flt Protected	0.95	0.98	1.00		0.95	1.00
Satd. Flow (prot)	1610	3337	3335		3433	1583
Flt Permitted	0.95	0.98	1.00		0.95	1.00
Satd. Flow (perm)	1610	3337	3335		3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	679	577	632	395	158	213
RTOR Reduction (vph)	0	0	118	0	0	43
Lane Group Flow (vph)	407	849	909	0	158	170
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	20.1	20.1	20.4		9.2	29.3
Effective Green, g (s)	22.6	22.6	22.9		10.2	34.3
Actuated g/C Ratio	0.36	0.36	0.36		0.16	0.54
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	578	1197	1212		556	932
v/s Ratio Prot	0.25	c0.25	c0.27		c0.05	0.07
v/s Ratio Perm						0.04
v/c Ratio	0.70	0.71	0.75		0.28	0.18
Uniform Delay, d1	17.3	17.4	17.5		23.2	7.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.3	2.2	2.3		0.1	0.1
Delay (s)	21.7	19.6	19.8		23.3	7.4
Level of Service	C	B	B		C	A
Approach Delay (s)		20.2	19.8		14.2	
Approach LOS		C	B		B	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	7.3
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



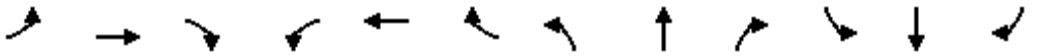
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	406	29	18	866	9	94	7	4	3	2	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.97	1.00
Satd. Flow (prot)	1770	3503		1770	3534			1561			1808	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.74			0.87	1.00
Satd. Flow (perm)	1770	3503		1770	3534			1213			1624	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	204	427	31	19	912	9	99	7	4	3	2	151
RTOR Reduction (vph)	0	5	0	0	1	0	0	2	0	0	0	124
Lane Group Flow (vph)	204	453	0	19	920	0	0	108	0	0	5	27
Parking (#/hr)								4				
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	7.8	30.4		1.0	23.6			8.6			8.6	8.6
Effective Green, g (s)	8.8	32.4		2.0	25.6			9.6			9.6	9.6
Actuated g/C Ratio	0.17	0.61		0.04	0.48			0.18			0.18	0.18
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3		2.0	4.3			2.0			2.0	2.0
Lane Grp Cap (vph)	292	2129		66	1697			218			293	285
v/s Ratio Prot	c0.12	0.13		0.01	c0.26							
v/s Ratio Perm								c0.09			0.00	0.02
v/c Ratio	0.70	0.21		0.29	0.54			0.49			0.02	0.10
Uniform Delay, d1	21.0	4.7		25.0	9.7			19.7			18.0	18.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	5.8	0.1		0.9	0.5			0.6			0.0	0.1
Delay (s)	26.8	4.8		25.8	10.2			20.3			18.0	18.3
Level of Service	C	A		C	B			C			B	B
Approach Delay (s)		11.6			10.5			20.3			18.3	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	9.3
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

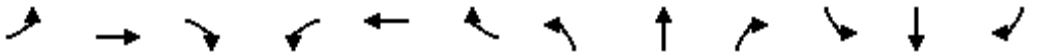
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	230	303	561	412	337	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5		2.8	2.5	3.0	2.8
Lane Util. Factor	0.97		1.00	1.00	1.00	1.00
Frt	0.91		1.00	0.85	1.00	1.00
Flt Protected	0.98		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3236		1863	1583	1770	1863
Flt Permitted	0.98		1.00	1.00	0.95	1.00
Satd. Flow (perm)	3236		1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	242	319	591	434	355	143
RTOR Reduction (vph)	251	0	0	47	0	0
Lane Group Flow (vph)	310	0	591	387	355	143
Turn Type				pm+ov	Prot	
Protected Phases	8		6	8	5	2
Permitted Phases				6		
Actuated Green, G (s)	12.9		25.0	37.9	15.9	44.9
Effective Green, g (s)	14.4		27.5	40.9	16.9	47.4
Actuated g/C Ratio	0.21		0.41	0.61	0.25	0.71
Clearance Time (s)	4.0		5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0		4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	694		764	965	446	1316
v/s Ratio Prot	c0.10		c0.32	0.09	c0.20	0.08
v/s Ratio Perm				0.16		
v/c Ratio	0.45		0.77	0.40	0.80	0.11
Uniform Delay, d1	22.9		17.1	6.8	23.5	3.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		5.4	0.1	8.9	0.1
Delay (s)	23.1		22.5	6.9	32.4	3.2
Level of Service	C		C	A	C	A
Approach Delay (s)	23.1		15.9			24.0
Approach LOS	C		B			C

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	8.3
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



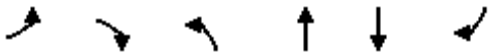
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	9	121	271	6	50	37	718	65	15	376	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	9	127	285	6	53	39	756	68	16	396	11
RTOR Reduction (vph)	0	0	109	0	0	36	0	0	47	0	0	8
Lane Group Flow (vph)	65	9	18	285	6	17	39	756	21	16	396	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.2	7.8	7.8	15.1	18.7	18.7	1.3	17.4	17.4	0.5	16.6	16.6
Effective Green, g (s)	5.2	8.8	8.8	16.1	19.7	19.7	2.3	19.4	18.4	1.5	18.6	17.6
Actuated g/C Ratio	0.09	0.14	0.14	0.26	0.32	0.32	0.04	0.32	0.30	0.02	0.31	0.29
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	151	270	229	469	604	513	67	1623	479	44	1556	458
v/s Ratio Prot	0.04	0.00		c0.16	0.00		c0.02	c0.15		0.01	0.08	
v/s Ratio Perm			c0.01			0.01			0.01			0.00
v/c Ratio	0.43	0.03	0.08	0.61	0.01	0.03	0.58	0.47	0.04	0.36	0.25	0.01
Uniform Delay, d1	26.4	22.3	22.5	19.6	13.9	14.0	28.8	16.6	15.0	29.2	15.9	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.1	0.2	2.2	0.0	0.0	12.2	0.2	0.0	5.1	0.1	0.0
Delay (s)	28.4	22.4	22.6	21.8	13.9	14.1	41.0	16.8	15.0	34.2	16.0	15.4
Level of Service	C	C	C	C	B	B	D	B	B	C	B	B
Approach Delay (s)		24.5			20.5			17.7			16.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	2	72	28	0	17	19	787	13	34	761	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0		5.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770		1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770		1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	2	76	29	0	18	20	828	14	36	801	8
RTOR Reduction (vph)	0	0	68	0	0	16	0	0	7	0	0	4
Lane Group Flow (vph)	36	2	8	29	0	2	20	828	7	36	801	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.2	5.9	5.9	2.1		5.8	0.8	28.5	28.5	2.2	29.9	29.9
Effective Green, g (s)	2.2	5.9	5.9	2.1		5.8	1.8	30.5	29.5	3.2	31.9	30.9
Actuated g/C Ratio	0.04	0.10	0.10	0.04		0.10	0.03	0.52	0.50	0.05	0.54	0.53
Clearance Time (s)	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	66	187	159	63		156	54	2642	796	96	2763	833
v/s Ratio Prot	c0.02	0.00		0.02			0.01	c0.16		c0.02	0.16	
v/s Ratio Perm			c0.00			0.00			0.00			0.00
v/c Ratio	0.55	0.01	0.05	0.46		0.01	0.37	0.31	0.01	0.38	0.29	0.01
Uniform Delay, d1	27.8	23.8	23.9	27.7		23.9	27.9	8.1	7.3	26.8	7.3	6.6
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.9	0.0	0.1	5.2		0.0	4.2	0.1	0.0	2.5	0.1	0.0
Delay (s)	36.7	23.8	24.0	33.0		23.9	32.1	8.2	7.3	29.2	7.3	6.6
Level of Service	D	C	C	C		C	C	A	A	C	A	A
Approach Delay (s)		28.0			29.5			8.7			8.2	
Approach LOS		C			C			A			A	

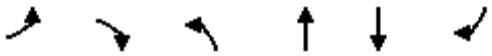
Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	200	118	55	1204	792	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1562	1770	5085	5085	1548
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1562	1770	5085	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	211	124	58	1267	834	94
RTOR Reduction (vph)	0	98	0	0	0	51
Lane Group Flow (vph)	211	26	58	1267	834	43
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.7	8.7	1.7	24.3	18.6	18.6
Effective Green, g (s)	8.7	8.7	1.7	24.3	18.6	18.6
Actuated g/C Ratio	0.21	0.21	0.04	0.59	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	376	331	73	3014	2307	702
v/s Ratio Prot	c0.12		0.03	c0.25	0.16	
v/s Ratio Perm		0.02				0.03
v/c Ratio	0.56	0.08	0.79	0.42	0.36	0.06
Uniform Delay, d1	14.4	12.9	19.5	4.5	7.3	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.1	43.3	0.1	0.1	0.0
Delay (s)	16.4	13.0	62.7	4.6	7.4	6.3
Level of Service	B	B	E	A	A	A
Approach Delay (s)	15.1			7.2	7.3	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

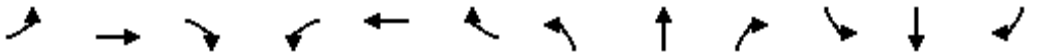
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	52	49	18	1208	899	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1563	1770	5085	5085	1549
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1563	1770	5085	5085	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	52	19	1272	946	13
RTOR Reduction (vph)	0	45	0	0	0	6
Lane Group Flow (vph)	55	7	19	1272	946	7
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	4.6	4.6	0.4	22.2	17.8	17.8
Effective Green, g (s)	4.6	4.6	0.4	22.2	17.8	17.8
Actuated g/C Ratio	0.13	0.13	0.01	0.64	0.51	0.51
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	234	207	20	3244	2601	792
v/s Ratio Prot	c0.03		0.01	c0.25	0.19	
v/s Ratio Perm		0.00				0.00
v/c Ratio	0.24	0.03	0.95	0.39	0.36	0.01
Uniform Delay, d1	13.5	13.2	17.2	3.0	5.1	4.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	175.6	0.1	0.1	0.0
Delay (s)	14.0	13.2	192.8	3.1	5.2	4.2
Level of Service	B	B	F	A	A	A
Approach Delay (s)	13.6			5.9	5.2	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	34.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



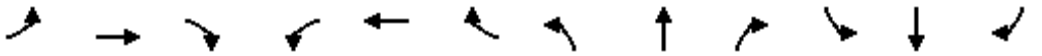
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	0	93	31	0	15	30	1387	11	3	869	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.93			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1681			1715		1770	5085	1547	1770	5085	1547
Flt Permitted		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1681			1715		1770	5085	1547	1770	5085	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	92	0	98	33	0	16	32	1460	12	3	915	16
RTOR Reduction (vph)	0	40	0	0	14	0	0	0	4	0	0	8
Lane Group Flow (vph)	0	150	0	0	35	0	32	1460	8	3	915	8
Confl. Peds. (#/hr)			2			2	2		2			2
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)		12.1			6.2		1.2	24.0	24.0	0.4	23.2	23.2
Effective Green, g (s)		12.1			6.2		1.2	24.0	24.0	0.4	23.2	23.2
Actuated g/C Ratio		0.21			0.11		0.02	0.41	0.41	0.01	0.40	0.40
Clearance Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		347			181		36	2079	633	12	2010	611
v/s Ratio Prot		c0.09			c0.02		c0.02	c0.29		0.00	0.18	
v/s Ratio Perm									0.01			0.01
v/c Ratio		0.43			0.19		0.89	0.70	0.01	0.25	0.46	0.01
Uniform Delay, d1		20.3			24.0		28.7	14.4	10.3	29.0	13.1	10.8
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.9			0.5		104.6	1.1	0.0	10.7	0.2	0.0
Delay (s)		21.2			24.5		133.2	15.5	10.3	39.7	13.3	10.8
Level of Service		C			C		F	B	B	D	B	B
Approach Delay (s)		21.2			24.5			17.9			13.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

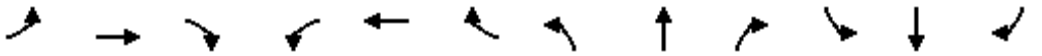
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	679	77	36	459	30	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	715	81	38	483	32	16
RTOR Reduction (vph)	0	32	0	0	0	14
Lane Group Flow (vph)	715	49	38	483	32	2
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	22.9	22.9	1.4	30.0	3.9	3.9
Effective Green, g (s)	26.3	26.3	2.4	33.4	4.9	4.9
Actuated g/C Ratio	0.60	0.60	0.06	0.77	0.11	0.11
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2135	955	97	2711	199	178
v/s Ratio Prot	c0.20		c0.02	0.14	c0.02	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.33	0.05	0.39	0.18	0.16	0.01
Uniform Delay, d1	4.3	3.5	19.9	1.4	17.5	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	1.0	0.1	0.1	0.0
Delay (s)	4.5	3.6	20.8	1.4	17.6	17.2
Level of Service	A	A	C	A	B	B
Approach Delay (s)	4.4			2.9	17.5	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	10	33	53	18	95	36	958	17	23	665	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	136	11	35	56	19	100	38	1008	18	24	700	25
RTOR Reduction (vph)	0	0	28	0	0	85	0	0	10	0	0	15
Lane Group Flow (vph)	136	11	7	56	19	15	38	1008	8	24	700	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.6	10.9	10.9	3.2	7.5	7.5	1.9	23.7	23.7	0.5	22.3	22.3
Effective Green, g (s)	7.6	11.9	11.9	4.2	8.5	8.5	2.9	25.7	24.7	1.5	24.3	23.3
Actuated g/C Ratio	0.13	0.20	0.20	0.07	0.15	0.15	0.05	0.44	0.42	0.03	0.42	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	231	380	323	128	272	231	88	2242	671	46	2119	633
v/s Ratio Prot	c0.08	c0.01		0.03	c0.01		c0.02	c0.20		0.01	0.14	
v/s Ratio Perm			0.00			0.01			0.00			0.01
v/c Ratio	0.59	0.03	0.02	0.44	0.07	0.06	0.43	0.45	0.01	0.52	0.33	0.02
Uniform Delay, d1	23.9	18.6	18.5	25.9	21.5	21.5	26.9	11.4	9.7	28.0	11.5	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.0	0.0	2.4	0.1	0.1	3.4	0.1	0.0	10.3	0.1	0.0
Delay (s)	27.7	18.6	18.6	28.3	21.6	21.6	30.3	11.5	9.7	38.3	11.6	10.6
Level of Service	C	B	B	C	C	C	C	B	A	D	B	B
Approach Delay (s)		25.4			23.7			12.2			12.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

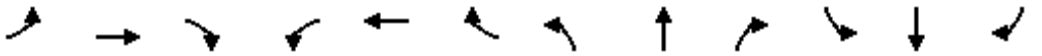


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	82	83	113	191	28	0	38	929	96	2	735	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	86	87	119	201	29	0	40	978	101	2	774	15
RTOR Reduction (vph)	0	0	101	0	0	0	0	0	64	0	0	10
Lane Group Flow (vph)	86	87	18	201	29	0	40	978	37	2	774	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.8	9.6	9.6	12.0	12.8		1.6	22.5	22.5	0.7	21.6	21.6
Effective Green, g (s)	8.8	9.6	9.6	12.0	12.8		1.6	22.5	22.5	0.7	21.6	21.6
Actuated g/C Ratio	0.14	0.16	0.16	0.19	0.21		0.03	0.36	0.36	0.01	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)	252	289	246	344	386		46	1851	576	20	1777	553
v/s Ratio Prot	0.05	c0.05		c0.11	c0.02		c0.02	c0.19		0.00	0.15	
v/s Ratio Perm			0.01						0.02			0.00
v/c Ratio	0.34	0.30	0.08	0.58	0.08		0.87	0.53	0.06	0.10	0.44	0.01
Uniform Delay, d1	23.9	23.1	22.3	22.6	19.7		30.0	15.5	12.8	30.2	15.4	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.6	0.1	2.5	0.1		83.5	0.6	0.1	2.2	0.4	0.0
Delay (s)	24.7	23.7	22.4	25.2	19.8		113.5	16.1	12.9	32.4	15.8	13.1
Level of Service	C	C	C	C	B		F	B	B	C	B	B
Approach Delay (s)		23.5			24.5			19.3			15.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

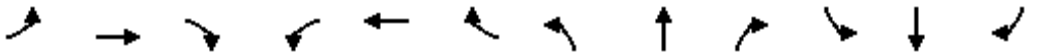
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	60	0	1068	30	0	1038
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		5.0
Lane Util. Factor	1.00		0.91	1.00		0.91
Frt	1.00		1.00	0.85		1.00
Flt Protected	0.95		1.00	1.00		1.00
Satd. Flow (prot)	1770		5085	1583		5085
Flt Permitted	0.95		1.00	1.00		1.00
Satd. Flow (perm)	1770		5085	1583		5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	0	1124	32	0	1093
RTOR Reduction (vph)	0	0	0	10	0	0
Lane Group Flow (vph)	63	0	1124	22	0	1093
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.6		34.3	34.3		34.3
Effective Green, g (s)	6.6		34.3	34.3		34.3
Actuated g/C Ratio	0.13		0.67	0.67		0.67
Clearance Time (s)	5.0		5.0	5.0		5.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	230		3427	1067		3427
v/s Ratio Prot	c0.04		c0.22			0.21
v/s Ratio Perm				0.01		
v/c Ratio	0.27		0.33	0.02		0.32
Uniform Delay, d1	20.0		3.5	2.7		3.4
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.6		0.1	0.0		0.1
Delay (s)	20.6		3.5	2.8		3.5
Level of Service	C		A	A		A
Approach Delay (s)	20.6		3.5			3.5
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	4.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	6	54	141	17	25	15	1104	58	5	1085	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	6	57	148	18	26	16	1162	61	5	1142	146
RTOR Reduction (vph)	0	0	51	0	0	21	0	0	35	0	0	88
Lane Group Flow (vph)	54	6	6	148	18	5	16	1162	26	5	1142	58
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.9	6.1	6.1	8.2	11.4	11.4	0.9	23.3	23.3	0.7	23.1	23.1
Effective Green, g (s)	2.9	6.1	6.1	8.2	11.4	11.4	0.9	23.3	23.3	0.7	23.1	23.1
Actuated g/C Ratio	0.05	0.10	0.10	0.14	0.20	0.20	0.02	0.40	0.40	0.01	0.40	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	88	195	166	249	364	310	27	2032	633	21	2015	627
v/s Ratio Prot	0.03	0.00		c0.08	c0.01		c0.01	c0.23		0.00	0.22	
v/s Ratio Perm			0.00			0.00			0.02			0.04
v/c Ratio	0.61	0.03	0.04	0.59	0.05	0.02	0.59	0.57	0.04	0.24	0.57	0.09
Uniform Delay, d1	27.2	23.4	23.5	23.5	19.0	18.9	28.5	13.6	10.7	28.5	13.7	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.0	0.1	0.1	3.8	0.1	0.0	30.3	0.4	0.0	5.8	0.4	0.1
Delay (s)	39.2	23.5	23.5	27.3	19.1	18.9	58.8	14.0	10.7	34.3	14.1	11.1
Level of Service	D	C	C	C	B	B	E	B	B	C	B	B
Approach Delay (s)		30.8			25.4			14.4			13.8	
Approach LOS		C			C			B			B	

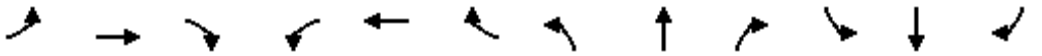
Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	99	64	80	42	188	44	1514	46	100	650	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1561	1770	1863	1561	1770	3539	1544	1770	3539	1544
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1561	1770	1863	1561	1770	3539	1544	1770	3539	1544
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	107	104	67	84	44	198	46	1594	48	105	684	46
RTOR Reduction (vph)	0	0	56	0	0	128	0	0	20	0	0	22
Lane Group Flow (vph)	107	104	11	84	44	70	46	1594	28	105	684	24
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	13.8	13.8	4.7	12.5	12.5	5.2	43.0	43.0	6.0	43.8	43.8
Effective Green, g (s)	6.0	13.8	13.8	4.7	12.5	12.5	5.2	43.0	43.0	6.0	43.8	43.8
Actuated g/C Ratio	0.07	0.17	0.17	0.06	0.15	0.15	0.06	0.51	0.51	0.07	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	127	308	258	100	279	234	110	1822	795	127	1856	810
v/s Ratio Prot	c0.06	c0.06		0.05	0.02		0.03	c0.45		c0.06	0.19	
v/s Ratio Perm			0.01			0.05			0.02			0.02
v/c Ratio	0.84	0.34	0.04	0.84	0.16	0.30	0.42	0.87	0.03	0.83	0.37	0.03
Uniform Delay, d1	38.3	30.8	29.3	39.0	30.9	31.6	37.7	17.9	10.0	38.2	11.7	9.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.0	0.7	0.1	43.1	0.3	0.7	2.6	5.0	0.0	33.6	0.1	0.0
Delay (s)	75.3	31.5	29.4	82.1	31.2	32.3	40.3	22.9	10.0	71.9	11.8	9.6
Level of Service	E	C	C	F	C	C	D	C	B	E	B	A
Approach Delay (s)		47.8			45.0			23.0			19.3	
Approach LOS		D			D			C			B	

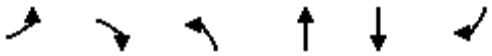
Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



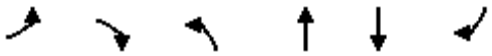
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	234	12	119	68	3	0	62	1248	65	0	741	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	4.0	4.0		3.0	5.0	6.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00		0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1593	1676	1425	1593	1676		1593	3185	1425		3185	1425
Flt Permitted	0.95	1.00	1.00	0.75	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1593	1676	1425	1256	1676		1593	3185	1425		3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	246	13	125	72	3	0	65	1314	68	0	780	16
RTOR Reduction (vph)	0	0	83	0	0	0	0	0	31	0	0	9
Lane Group Flow (vph)	246	13	42	72	3	0	65	1314	37	0	780	7
Turn Type	Prot		Perm	Perm		Perm	Prot		Perm	Perm		Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Actuated Green, G (s)	11.9	23.3	23.3	7.4	7.4		3.4	38.6	38.6		31.2	31.2
Effective Green, g (s)	12.9	23.3	24.3	7.4	7.4		4.4	39.6	38.6		32.2	32.2
Actuated g/C Ratio	0.18	0.32	0.34	0.10	0.10		0.06	0.55	0.54		0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.7	4.7		4.7	4.7
Lane Grp Cap (vph)	286	543	482	129	172		97	1754	765		1426	638
v/s Ratio Prot	c0.15	0.01			0.00		0.04	c0.41			0.24	
v/s Ratio Perm			0.03	c0.06					0.03			0.01
v/c Ratio	0.86	0.02	0.09	0.56	0.02		0.67	0.75	0.05		0.55	0.01
Uniform Delay, d1	28.6	16.6	16.2	30.7	29.0		33.0	12.4	7.9		14.5	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	21.6	0.0	0.0	3.0	0.0		13.3	2.1	0.0		0.7	0.0
Delay (s)	50.2	16.6	16.3	33.6	29.0		46.4	14.4	8.0		15.2	11.0
Level of Service	D	B	B	C	C		D	B	A		B	B
Approach Delay (s)		38.0			33.5			15.6			15.1	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



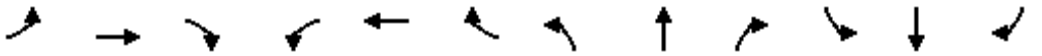
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	164	269	55	1230	875	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	283	58	1295	921	22
RTOR Reduction (vph)	0	226	0	0	0	12
Lane Group Flow (vph)	173	57	58	1295	921	10
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	11.4	11.4	4.4	34.8	25.4	25.4
Effective Green, g (s)	11.4	11.4	4.4	34.8	25.4	25.4
Actuated g/C Ratio	0.20	0.20	0.08	0.62	0.45	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	359	321	139	2191	1599	715
v/s Ratio Prot	c0.10		0.03	c0.37	0.26	
v/s Ratio Perm		0.04				0.01
v/c Ratio	0.48	0.18	0.42	0.59	0.58	0.01
Uniform Delay, d1	19.8	18.5	24.7	6.4	11.4	8.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.3	2.0	0.4	0.5	0.0
Delay (s)	20.8	18.8	26.7	6.9	11.9	8.5
Level of Service	C	B	C	A	B	A
Approach Delay (s)	19.6			7.7	11.8	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	56.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	223	103	93	1342	1117	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	235	108	98	1413	1176	171
RTOR Reduction (vph)	0	84	0	0	0	81
Lane Group Flow (vph)	235	24	98	1413	1176	90
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.3	13.3	6.8	41.8	31.0	31.0
Effective Green, g (s)	14.3	14.3	7.8	45.2	34.4	34.4
Actuated g/C Ratio	0.22	0.22	0.12	0.69	0.53	0.53
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	389	348	212	2457	1870	836
v/s Ratio Prot	c0.13		0.06	c0.40	c0.33	
v/s Ratio Perm		0.01				0.06
v/c Ratio	0.60	0.07	0.46	0.58	0.63	0.11
Uniform Delay, d1	22.9	20.1	26.7	5.1	10.8	7.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.0	0.6	0.5	0.9	0.1
Delay (s)	24.7	20.2	27.3	5.6	11.8	7.8
Level of Service	C	C	C	A	B	A
Approach Delay (s)	23.2			7.0	11.2	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	8.2
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

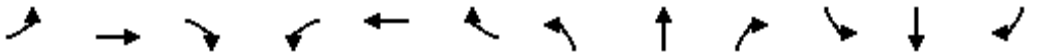


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	208	50	29	44	24	40	7	1177	51	38	1069	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9	3.7	3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	219	53	31	46	25	42	7	1239	54	40	1125	98
RTOR Reduction (vph)	0	0	25	0	0	38	0	0	28	0	0	47
Lane Group Flow (vph)	219	53	6	46	25	4	7	1239	26	40	1125	51
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	14.6	14.6	14.6	6.3	6.3	6.3	1.3	35.1	35.1	4.4	38.2	38.2
Effective Green, g (s)	16.2	16.2	15.6	7.9	7.9	7.9	2.3	38.5	38.5	5.4	41.6	41.6
Actuated g/C Ratio	0.20	0.20	0.19	0.10	0.10	0.10	0.03	0.48	0.48	0.07	0.52	0.52
Clearance Time (s)	4.9	4.9	4.9	5.3	5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1	2.0	2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	356	374	306	173	183	155	51	1690	756	119	1827	817
v/s Ratio Prot	c0.12	0.03		c0.03	0.01		0.00	c0.35		c0.02	0.32	
v/s Ratio Perm			0.00			0.00			0.02			0.03
v/c Ratio	0.62	0.14	0.02	0.27	0.14	0.03	0.14	0.73	0.03	0.34	0.62	0.06
Uniform Delay, d1	29.4	26.5	26.3	33.7	33.2	32.9	38.2	16.9	11.2	35.9	13.8	9.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.2	0.0	0.3	0.1	0.0	0.4	2.0	0.0	0.6	0.9	0.1
Delay (s)	32.5	26.7	26.3	34.0	33.4	32.9	38.6	18.9	11.2	36.5	14.7	9.8
Level of Service	C	C	C	C	C	C	D	B	B	D	B	A
Approach Delay (s)		30.9			33.4			18.7			15.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	12.6
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	72	40	1580	38	64	1522
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	0.95		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1718		5085	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1718		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	42	1663	40	67	1602
RTOR Reduction (vph)	35	0	0	20	0	0
Lane Group Flow (vph)	83	0	1663	20	67	1602
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Actuated Green, G (s)	9.1		28.8	28.8	4.9	38.7
Effective Green, g (s)	9.1		28.8	28.8	4.9	38.7
Actuated g/C Ratio	0.16		0.50	0.50	0.08	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	270		2534	789	150	3405
v/s Ratio Prot	c0.05		c0.33		0.04	c0.32
v/s Ratio Perm				0.01		
v/c Ratio	0.31		0.66	0.03	0.45	0.47
Uniform Delay, d1	21.6		10.8	7.4	25.2	4.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6		0.6	0.0	2.1	0.1
Delay (s)	22.2		11.4	7.4	27.3	4.7
Level of Service	C		B	A	C	A
Approach Delay (s)	22.2		11.3			5.6
Approach LOS	C		B			A

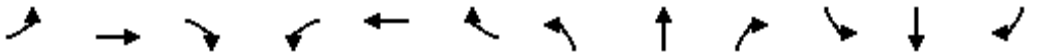
Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	0	93	31	0	15	30	1387	11	3	869	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1563		1770	1563		1770	5085	1547	1770	5085	1547
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1563		1770	1563		1770	5085	1547	1770	5085	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	92	0	98	33	0	16	32	1460	12	3	915	16
RTOR Reduction (vph)	0	81	0	0	15	0	0	0	6	0	0	8
Lane Group Flow (vph)	92	17	0	33	1	0	32	1460	6	3	915	8
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.6	10.1		1.6	4.1		1.6	31.5	31.5	0.5	30.4	30.4
Effective Green, g (s)	7.6	10.1		1.6	4.1		1.6	31.5	31.5	0.5	30.4	30.4
Actuated g/C Ratio	0.13	0.17		0.03	0.07		0.03	0.53	0.53	0.01	0.51	0.51
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	225	264		47	107		47	2683	816	15	2589	788
v/s Ratio Prot	c0.05	c0.01		0.02	0.00		c0.02	c0.29		0.00	0.18	
v/s Ratio Perm									0.00			0.01
v/c Ratio	0.41	0.06		0.70	0.01		0.68	0.54	0.01	0.20	0.35	0.01
Uniform Delay, d1	24.0	20.8		28.8	25.9		28.8	9.3	6.7	29.4	8.8	7.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1		38.0	0.0		33.6	0.8	0.0	6.5	0.4	0.0
Delay (s)	25.2	20.9		66.8	25.9		62.4	10.1	6.7	35.9	9.1	7.3
Level of Service	C	C		E	C		E	B	A	D	A	A
Approach Delay (s)		23.0			53.5			11.2			9.2	
Approach LOS		C			D			B			A	

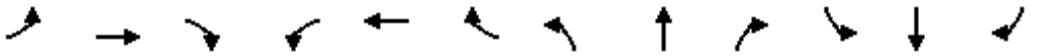
Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



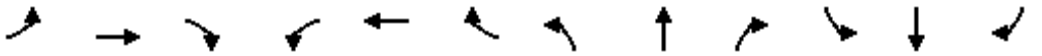
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	7	156	125	8	53	58	736	39	11	297	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1778	1583		1779	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1778	1583		1779	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	163	7	164	132	8	56	61	775	41	12	313	41
RTOR Reduction (vph)	0	0	132	0	0	48	0	0	25	0	0	29
Lane Group Flow (vph)	0	170	32	0	140	8	61	775	16	12	313	12
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		13.1	13.1		10.0	10.0	4.7	23.8	23.8	1.0	20.1	20.1
Effective Green, g (s)		13.1	13.1		10.0	10.0	4.7	23.8	23.8	1.0	20.1	20.1
Actuated g/C Ratio		0.19	0.19		0.15	0.15	0.07	0.35	0.35	0.01	0.30	0.30
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		343	305		262	233	123	1240	555	26	1048	469
v/s Ratio Prot		c0.10			c0.08		c0.03	c0.22		0.01	0.09	
v/s Ratio Perm			0.02			0.01			0.01			0.01
v/c Ratio		0.50	0.10		0.53	0.04	0.50	0.62	0.03	0.46	0.30	0.03
Uniform Delay, d1		24.5	22.6		26.8	24.8	30.5	18.3	14.5	33.2	18.5	17.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.1	0.2		2.1	0.1	3.1	1.0	0.0	12.4	0.2	0.0
Delay (s)		25.6	22.7		28.9	24.9	33.6	19.3	14.5	45.6	18.6	17.0
Level of Service		C	C		C	C	C	B	B	D	B	B
Approach Delay (s)		24.2			27.7			20.1			19.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



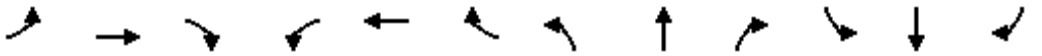
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	23	83	46	7	49	50	707	13	22	519	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1794	1583		1785	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1794	1583		1785	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	81	24	87	48	7	52	53	744	14	23	546	39
RTOR Reduction (vph)	0	0	75	0	0	46	0	0	8	0	0	24
Lane Group Flow (vph)	0	105	12	0	55	6	53	744	6	23	546	15
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		9.2	9.2		8.1	8.1	4.2	27.7	27.7	2.4	25.9	25.9
Effective Green, g (s)		9.2	9.2		8.1	8.1	4.2	27.7	27.7	2.4	25.9	25.9
Actuated g/C Ratio		0.14	0.14		0.12	0.12	0.06	0.41	0.41	0.04	0.38	0.38
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		245	216		215	190	110	1454	651	63	1360	608
v/s Ratio Prot		c0.06			c0.03		c0.03	c0.21		0.01	0.15	
v/s Ratio Perm			0.01			0.00			0.00			0.01
v/c Ratio		0.43	0.05		0.26	0.03	0.48	0.51	0.01	0.37	0.40	0.02
Uniform Delay, d1		26.7	25.3		26.9	26.2	30.5	14.8	11.7	31.8	15.1	12.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.2	0.1		0.6	0.1	3.3	0.3	0.0	3.6	0.2	0.0
Delay (s)		27.9	25.4		27.5	26.3	33.8	15.1	11.7	35.3	15.3	12.9
Level of Service		C	C		C	C	C	B	B	D	B	B
Approach Delay (s)		26.8			26.9			16.3			15.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	2	153	0	4	23	141	902	0	10	479	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1587			1863	1583	1770	3539		1770	3539	1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1587			1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	2	161	0	4	24	148	949	0	11	504	108
RTOR Reduction (vph)	0	113	0	0	0	22	0	0	0	0	0	71
Lane Group Flow (vph)	95	50	0	0	4	2	148	949	0	11	504	37
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	5.6	13.5			3.9	3.9	4.4	19.3		0.5	15.4	15.4
Effective Green, g (s)	5.6	13.5			3.9	3.9	4.4	19.3		0.5	15.4	15.4
Actuated g/C Ratio	0.12	0.30			0.09	0.09	0.10	0.43		0.01	0.34	0.34
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	219	473			160	136	172	1508		20	1203	538
v/s Ratio Prot	c0.05	c0.03			0.00		c0.08	c0.27		0.01	0.14	
v/s Ratio Perm						0.00						0.02
v/c Ratio	0.43	0.11			0.03	0.02	0.86	0.63		0.55	0.42	0.07
Uniform Delay, d1	18.4	11.5			19.0	18.9	20.1	10.2		22.3	11.5	10.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1			0.1	0.0	32.9	0.8		28.9	0.2	0.1
Delay (s)	19.8	11.6			19.0	19.0	53.0	11.0		51.2	11.7	10.2
Level of Service	B	B			B	B	D	B		D	B	B
Approach Delay (s)		14.6			19.0			16.7			12.2	
Approach LOS		B			B			B			B	

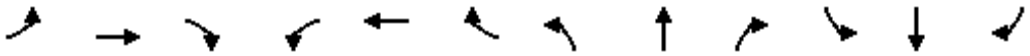
Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	0	25	43	0	44	12	776	32	20	264	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.99	1.00		0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1562	1770		1562	1770	3539	1545	1770	3539	1545
Flt Permitted		0.14	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		253	1562	1770		1562	1770	3539	1545	1770	3539	1545
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	0	26	45	0	46	13	817	34	21	278	12
RTOR Reduction (vph)	0	0	17	0	0	41	0	0	23	0	0	8
Lane Group Flow (vph)	0	64	9	45	0	5	13	817	11	21	278	4
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Perm		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Actuated Green, G (s)		29.4	29.4	9.0		9.0	0.6	25.1	25.1	1.3	25.8	25.8
Effective Green, g (s)		29.4	29.4	9.0		9.0	0.6	25.1	25.1	1.3	25.8	25.8
Actuated g/C Ratio		0.36	0.36	0.11		0.11	0.01	0.31	0.31	0.02	0.32	0.32
Clearance Time (s)		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		92	568	197		174	13	1099	480	28	1130	493
v/s Ratio Prot				c0.03			0.01	c0.23		c0.01	0.08	
v/s Ratio Perm		c0.25	0.01			0.00			0.01			0.00
v/c Ratio		0.70	0.02	0.23		0.03	1.00	0.74	0.02	0.75	0.25	0.01
Uniform Delay, d1		21.9	16.4	32.7		32.0	40.1	25.0	19.3	39.6	20.3	18.8
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		20.4	0.0	0.6		0.1	249.6	2.8	0.0	71.8	0.1	0.0
Delay (s)		42.3	16.5	33.3		32.1	289.7	27.7	19.3	111.4	20.4	18.8
Level of Service		D	B	C		C	F	C	B	F	C	B
Approach Delay (s)		34.8			32.7			31.3			26.5	
Approach LOS		C			C			C			C	

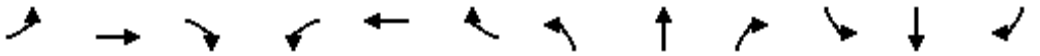
Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



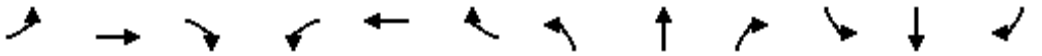
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	3	19	25	9	39	35	706	3	17	302	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4		3.0	3.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.95	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1776	1583		1796	1583	1770	3537		1770	3347	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1776	1583		1796	1583	1770	3537		1770	3347	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	151	3	20	26	9	41	37	743	3	18	318	180
RTOR Reduction (vph)	0	0	16	0	0	37	0	0	0	0	78	0
Lane Group Flow (vph)	0	154	4	0	35	4	37	746	0	18	420	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		8.8	8.8		4.6	4.6	2.1	20.8		0.8	19.5	
Effective Green, g (s)		9.8	9.8		5.6	5.6	3.1	23.1		1.8	21.8	
Actuated g/C Ratio		0.19	0.19		0.11	0.11	0.06	0.44		0.03	0.41	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		330	294		191	168	104	1550		60	1385	
v/s Ratio Prot		c0.09			c0.02		c0.02	c0.21		0.01	0.13	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.47	0.01		0.18	0.03	0.36	0.48		0.30	0.30	
Uniform Delay, d1		19.1	17.5		21.5	21.1	23.8	10.5		24.8	10.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		0.2	0.0	0.8	0.3		1.0	0.2	
Delay (s)		19.5	17.5		21.6	21.1	24.6	10.8		25.9	10.5	
Level of Service		B	B		C	C	C	B		C	B	
Approach Delay (s)		19.3			21.4			11.5			11.1	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



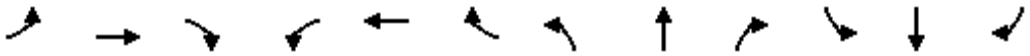
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	24	29	29	5	21	16	664	17	4	321	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.95		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1790	1583		1721		1770	3526		1770	3487	
Flt Permitted		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1790	1583		1721		1770	3526		1770	3487	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	108	25	31	31	5	22	17	699	18	4	338	37
RTOR Reduction (vph)	0	0	27	0	20	0	0	2	0	0	9	0
Lane Group Flow (vph)	0	133	4	0	38	0	17	715	0	4	366	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		7.4	7.4		4.6		0.9	23.1		0.8	23.0	
Effective Green, g (s)		7.4	7.4		4.6		0.9	23.1		0.8	23.0	
Actuated g/C Ratio		0.14	0.14		0.09		0.02	0.43		0.01	0.43	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		247	219		148		30	1520		26	1496	
v/s Ratio Prot		c0.07			c0.02		c0.01	c0.20		0.00	0.11	
v/s Ratio Perm			0.00									
v/c Ratio		0.54	0.02		0.26		0.57	0.47		0.15	0.24	
Uniform Delay, d1		21.5	20.0		22.9		26.2	10.9		26.1	9.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.1	0.0		0.3		13.8	0.3		1.0	0.1	
Delay (s)		22.6	20.0		23.2		39.9	11.2		27.1	9.9	
Level of Service		C	B		C		D	B		C	A	
Approach Delay (s)		22.1			23.2			11.8			10.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	6	142	13	11	13	97	615	12	2	402	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1781	1583		1814	1583	1770	3529		1770	3516	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1781	1583		1814	1583	1770	3529		1770	3516	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	71	6	149	14	12	14	102	647	13	2	423	19
RTOR Reduction (vph)	0	0	127	0	0	13	0	1	0	0	3	0
Lane Group Flow (vph)	0	77	22	0	26	1	102	659	0	2	439	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		7.3	7.3		4.0	4.0	4.8	26.1		0.6	21.9	
Effective Green, g (s)		8.3	8.3		5.0	5.0	5.8	28.8		1.6	24.6	
Actuated g/C Ratio		0.15	0.15		0.09	0.09	0.10	0.52		0.03	0.44	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		265	236		163	142	184	1825		51	1553	
v/s Ratio Prot		c0.04			c0.01		c0.06	c0.19		0.00	0.12	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.29	0.09		0.16	0.01	0.55	0.36		0.04	0.28	
Uniform Delay, d1		21.1	20.5		23.4	23.1	23.7	8.0		26.3	9.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.2		0.5	0.0	2.0	0.2		0.1	0.1	
Delay (s)		21.7	20.6		23.9	23.1	25.8	8.1		26.4	10.0	
Level of Service		C	C		C	C	C	A		C	B	
Approach Delay (s)		21.0			23.6			10.5			10.1	
Approach LOS		C			C			B			B	

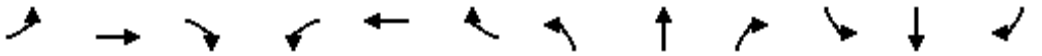
Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	24	35	99	51	98	35	1121	18	212	427	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1523	1681	1741	1583	1770	3527		1770	3469	
Flt Permitted		0.97	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799	1523	1681	1741	1583	1770	3527		1770	3469	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	25	37	104	54	103	37	1180	19	223	449	45
RTOR Reduction (vph)	0	0	32	0	0	93	0	1	0	0	6	0
Lane Group Flow (vph)	0	86	5	78	80	10	37	1198	0	223	488	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		10.9	10.9	8.8	8.8	8.8	3.1	40.9		17.0	54.8	
Effective Green, g (s)		11.9	11.9	9.8	9.8	9.8	5.1	42.9		19.0	56.8	
Actuated g/C Ratio		0.12	0.12	0.10	0.10	0.10	0.05	0.44		0.20	0.59	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		222	188	171	177	161	93	1566		348	2040	
v/s Ratio Prot		c0.05		c0.05	0.05		0.02	c0.34		c0.13	0.14	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.39	0.02	0.46	0.45	0.06	0.40	0.76		0.64	0.24	
Uniform Delay, d1		39.0	37.2	40.9	40.9	39.3	44.3	22.6		35.7	9.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.0	1.4	1.3	0.1	1.0	2.4		3.0	0.1	
Delay (s)		39.8	37.3	42.3	42.2	39.4	45.3	25.0		38.7	9.6	
Level of Service		D	D	D	D	D	D	C		D	A	
Approach Delay (s)		39.1			41.1			25.6			18.7	
Approach LOS		D			D			C			B	

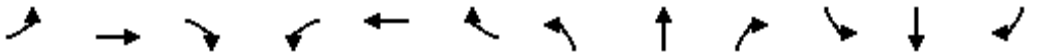
Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



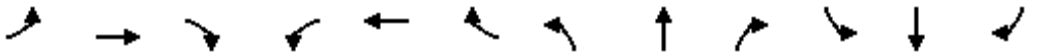
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	0	102	42	0	73	72	1064	33	43	439	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	66	0	107	44	0	77	76	1120	35	45	462	34
RTOR Reduction (vph)	0	0	97	0	0	69	0	2	0	0	0	18
Lane Group Flow (vph)	66	0	10	44	0	8	76	1153	0	45	462	16
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	6.8		6.8	6.5		6.5	6.0	35.4		3.8	33.2	33.2
Effective Green, g (s)	6.8		6.8	7.5		7.5	6.0	36.4		4.8	34.2	33.2
Actuated g/C Ratio	0.10		0.10	0.11		0.11	0.09	0.52		0.07	0.49	0.47
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	171		153	189		169	151	1827		121	1724	749
v/s Ratio Prot	c0.04			c0.02			c0.04	c0.33		0.03	0.13	
v/s Ratio Perm			0.01			0.01						0.01
v/c Ratio	0.39		0.07	0.23		0.05	0.50	0.63		0.37	0.27	0.02
Uniform Delay, d1	29.7		28.8	28.7		28.1	30.7	12.1		31.3	10.6	9.9
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5		0.1	0.2		0.0	1.0	0.9		0.7	0.1	0.0
Delay (s)	30.3		28.9	28.9		28.2	31.6	13.0		32.0	10.8	9.9
Level of Service	C		C	C		C	C	B		C	B	A
Approach Delay (s)		29.4			28.5			14.1			12.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.2	Sum of lost time (s)	11.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



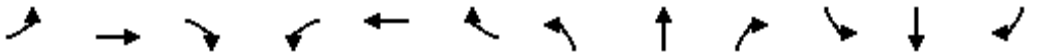
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	4	51	63	4	14	292	868	138	95	849	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1692	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1692	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	88	4	54	66	4	15	307	914	145	100	894	547
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	329
Lane Group Flow (vph)	46	46	54	66	4	15	307	914	145	100	894	218
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	8.2	8.2	74.9	6.4	6.4	74.9	15.8	36.0	74.9	6.3	26.5	26.5
Effective Green, g (s)	9.2	9.2	74.9	7.4	7.4	74.9	16.8	39.4	74.9	7.3	29.9	29.9
Actuated g/C Ratio	0.12	0.12	1.00	0.10	0.10	1.00	0.22	0.53	1.00	0.10	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	206	208	1583	175	184	1583	397	2675	1583	173	2030	632
v/s Ratio Prot	c0.03	0.03		c0.04	0.00		c0.17	0.18		0.06	c0.18	
v/s Ratio Perm			0.03			0.01			0.09			0.14
v/c Ratio	0.22	0.22	0.03	0.38	0.02	0.01	0.77	0.34	0.09	0.58	0.44	0.35
Uniform Delay, d1	29.6	29.6	0.0	31.6	30.5	0.0	27.3	10.3	0.0	32.3	16.4	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	0.0	1.4	0.0	0.0	8.3	0.1	0.1	4.6	0.3	0.6
Delay (s)	30.0	30.0	0.0	33.0	30.5	0.0	35.6	10.4	0.1	36.9	16.7	16.3
Level of Service	C	C	A	C	C	A	D	B	A	D	B	B
Approach Delay (s)		18.9			27.0			15.0			17.8	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	11.6
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



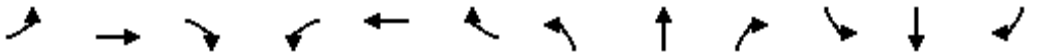
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	2	1	17	2	35	52	1429	123	182	788	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0		3.0	0.6	4.0	4.0	0.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1741	1583	1770	1598		1770	3539	1583	1770	4930	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00	0.17	1.00	
Satd. Flow (perm)	1681	1741	1583	1770	1598		1770	3539	1583	310	4930	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	2	1	18	2	37	55	1504	129	192	829	212
RTOR Reduction (vph)	0	0	1	0	35	0	0	0	21	0	19	0
Lane Group Flow (vph)	2	3	0	18	4	0	55	1504	108	192	1022	0
Turn Type	Split		Perm	Split			Prot		Perm	Perm		
Protected Phases	4	4		8	8		5	2			6	
Permitted Phases			4						2	6		
Actuated Green, G (s)	3.8	3.8	3.8	6.7	6.7		7.6	106.5	106.5	94.9	94.9	
Effective Green, g (s)	4.8	3.8	4.8	6.7	6.7		8.6	109.9	106.5	94.9	98.3	
Actuated g/C Ratio	0.04	0.03	0.04	0.05	0.05		0.07	0.85	0.82	0.73	0.76	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	62	51	58	91	82		117	2992	1297	226	3728	
v/s Ratio Prot	0.00	c0.00		c0.01	0.00		0.03	c0.42			0.21	
v/s Ratio Perm			0.00						0.07	c0.62		
v/c Ratio	0.03	0.06	0.00	0.20	0.05		0.47	0.50	0.08	0.85	0.27	
Uniform Delay, d1	60.4	61.4	60.3	59.1	58.6		58.5	2.7	2.3	12.5	4.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.5	0.0	1.1	0.2		3.0	0.1	0.0	24.6	0.0	
Delay (s)	60.6	61.8	60.3	60.1	58.9		61.5	2.8	2.3	37.0	4.9	
Level of Service	E	E	E	E	E		E	A	A	D	A	
Approach Delay (s)		61.2			59.3			4.7			9.9	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.6
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



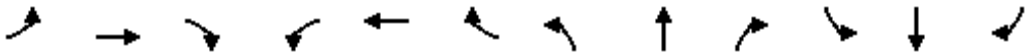
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	7	52	0	1	63	16	1800	0	265	554	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.95	0.95		1.00		1.00	0.95		1.00	0.95	
Frt		0.88	0.85		0.87		1.00	1.00		1.00	1.00	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1562	1504		1615		1770	3539		1770	3539	
Flt Permitted		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1562	1504		1615		1770	3539		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	7	55	0	1	66	17	1895	0	279	583	0
RTOR Reduction (vph)	0	23	28	0	61	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	9	2	0	6	0	17	1895	0	279	583	0
Turn Type	Perm		Perm				Prot			Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4									6
Actuated Green, G (s)		8.1	8.1		8.1		1.4	56.8		18.0	73.4	
Effective Green, g (s)		8.1	8.1		8.1		1.4	56.8		18.0	73.4	
Actuated g/C Ratio		0.08	0.08		0.08		0.01	0.58		0.18	0.75	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		129	124		134		25	2053		325	2653	
v/s Ratio Prot		c0.01			0.00		0.01	c0.54		c0.16	0.16	
v/s Ratio Perm			0.00									
v/c Ratio		0.07	0.02		0.05		0.68	0.92		0.86	0.22	
Uniform Delay, d1		41.4	41.3		41.4		48.0	18.6		38.7	3.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.1		0.1		56.0	7.5		19.5	0.0	
Delay (s)		41.7	41.3		41.5		104.0	26.1		58.3	3.7	
Level of Service		D	D		D		F	C		E	A	
Approach Delay (s)		41.5			41.5			26.8			21.4	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	97.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	9	17	42	1	2	8	1467	346	33	640	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	2.6		3.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786	1583	1681	1689	1583	1770	4940		1770	5077	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1786	1583	1681	1689	1583	1770	4940		1770	5077	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	9	18	44	1	2	8	1544	364	35	674	7
RTOR Reduction (vph)	0	0	16	0	0	2	0	33	0	0	1	0
Lane Group Flow (vph)	0	63	2	22	23	0	8	1875	0	35	680	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4						
Actuated Green, G (s)		5.2	5.2	6.4	6.4	6.4	0.9	36.3		1.3	36.7	
Effective Green, g (s)		6.2	6.2	7.4	7.4	7.4	1.9	39.7		2.3	40.1	
Actuated g/C Ratio		0.09	0.09	0.11	0.11	0.11	0.03	0.59		0.03	0.60	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2	0.2	2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)		165	146	185	186	174	50	2918		61	3030	
v/s Ratio Prot		c0.04		0.01	c0.01		0.00	c0.38		c0.02	0.13	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.38	0.01	0.12	0.12	0.00	0.16	0.64		0.57	0.22	
Uniform Delay, d1		28.7	27.7	27.0	27.0	26.6	31.9	9.1		32.0	6.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0	0.1	0.1	0.0	0.5	0.5		7.9	0.1	
Delay (s)		29.2	27.7	27.1	27.1	26.6	32.4	9.6		39.8	6.4	
Level of Service		C	C	C	C	C	C	A		D	A	
Approach Delay (s)		28.9			27.1			9.7			8.0	
Approach LOS		C			C			A			A	

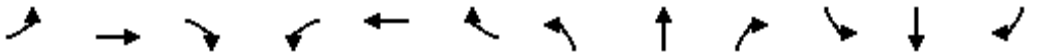
Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	67.2	Sum of lost time (s)	11.6
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	7	171	73	17	55	123	1633	17	11	1124	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1779	1550		1790	1583	1770	5075		1770	5068	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1779	1550		1790	1583	1770	5075		1770	5068	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	124	7	180	77	18	58	129	1719	18	12	1183	22
RTOR Reduction (vph)	0	0	146	0	0	53	0	1	0	0	2	0
Lane Group Flow (vph)	0	131	34	0	95	5	129	1736	0	12	1203	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		9.7	9.7		3.1	3.1	6.5	30.5		0.5	24.5	
Effective Green, g (s)		12.0	12.0		5.4	5.4	7.5	33.5		1.5	27.5	
Actuated g/C Ratio		0.19	0.19		0.09	0.09	0.12	0.53		0.02	0.44	
Clearance Time (s)		5.3	5.3		4.0	4.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		338	295		153	135	210	2694		42	2209	
v/s Ratio Prot		c0.07			c0.05		c0.07	c0.34		0.01	0.24	
v/s Ratio Perm			0.02			0.00						
v/c Ratio		0.39	0.12		0.62	0.04	0.61	0.64		0.29	0.54	
Uniform Delay, d1		22.3	21.2		27.9	26.5	26.4	10.6		30.3	13.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.1		5.5	0.0	3.7	0.7		1.4	0.5	
Delay (s)		22.6	21.2		33.4	26.5	30.1	11.3		31.6	13.7	
Level of Service		C	C		C	C	C	B		C	B	
Approach Delay (s)		21.8			30.8			12.6			13.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	7.7
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

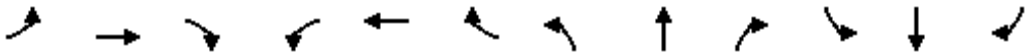
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	233	651	137	176	204	135	74	1491	196	153	1005	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1535	1770	5085	1534	3433	5085	1560	3433	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1535	1770	5085	1534	3433	5085	1560	3433	5085	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	245	685	144	185	215	142	78	1569	206	161	1058	146
RTOR Reduction (vph)	0	0	95	0	0	101	0	0	0	0	0	0
Lane Group Flow (vph)	245	685	49	185	215	41	78	1569	206	161	1058	146
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	12.9	29.0	29.0	15.9	32.0	32.0	5.6	47.4	120.0	8.3	49.8	120.0
Effective Green, g (s)	13.9	32.0	32.0	16.9	35.0	35.0	6.6	50.4	120.0	9.3	52.8	120.0
Actuated g/C Ratio	0.12	0.27	0.27	0.14	0.29	0.29	0.05	0.42	1.00	0.08	0.44	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	398	944	409	249	1483	447	189	2136	1560	266	2237	1560
v/s Ratio Prot	0.07	c0.19		c0.10	0.04		0.02	c0.31		c0.05	0.21	
v/s Ratio Perm			0.03			0.03			c0.13			0.09
v/c Ratio	0.62	0.73	0.12	0.74	0.14	0.09	0.41	0.73	0.13	0.61	0.47	0.09
Uniform Delay, d1	50.5	40.0	33.3	49.5	31.4	30.9	54.8	29.2	0.0	53.6	23.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	2.9	0.2	10.0	0.1	0.1	0.5	1.5	0.2	2.7	0.7	0.1
Delay (s)	52.5	42.9	33.5	59.5	31.5	31.1	55.4	30.7	0.2	56.2	24.5	0.1
Level of Service	D	D	C	E	C	C	E	C	A	E	C	A
Approach Delay (s)		43.8			40.9			28.4			25.6	
Approach LOS		D			D			C			C	

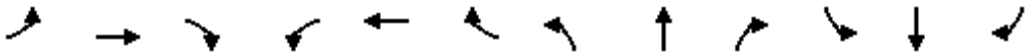
Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	0	39	44	2	21	23	1723	20	10	1346	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0	4.7	3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.91	
Frt		0.94			0.96		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1703			1727		1770	3539	1583	1770	5080	
Flt Permitted		0.80			0.73		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1409			1299		1770	3539	1583	1770	5080	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	0	41	46	2	22	24	1814	21	11	1417	9
RTOR Reduction (vph)	0	27	0	0	15	0	0	0	3	0	1	0
Lane Group Flow (vph)	0	65	0	0	55	0	24	1814	18	11	1425	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		11.2			11.2		13.3	94.5	94.5	0.6	81.8	
Effective Green, g (s)		12.2			12.2		14.3	97.2	95.5	1.6	84.5	
Actuated g/C Ratio		0.10			0.10		0.12	0.81	0.80	0.01	0.70	
Clearance Time (s)		4.0			4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8	3.8	2.0	3.8	
Lane Grp Cap (vph)		143			132		211	2867	1260	24	3577	
v/s Ratio Prot							0.01	c0.51		0.01	c0.28	
v/s Ratio Perm		c0.05			0.04				0.01			
v/c Ratio		0.45			0.41		0.11	0.63	0.01	0.46	0.40	
Uniform Delay, d1		50.8			50.6		47.2	4.4	2.5	58.8	7.3	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.3			2.1		0.1	1.1	0.0	5.0	0.1	
Delay (s)		53.1			52.7		47.3	5.5	2.6	63.7	7.4	
Level of Service		D			D		D	A	A	E	A	
Approach Delay (s)		53.1			52.7			6.0			7.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



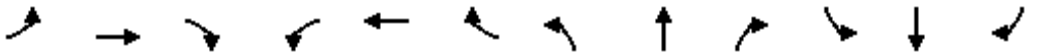
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	267	225	109	50	50	124	1767	48	137	2059	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5072	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5072	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	281	237	115	53	53	131	1860	51	144	2167	34
RTOR Reduction (vph)	0	0	103	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	105	281	134	115	53	53	131	1860	51	144	2200	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	14.3	17.8	17.8	6.8	10.3	120.0	8.0	67.5	120.0	8.2	67.7	
Effective Green, g (s)	15.3	20.8	20.8	7.8	13.3	120.0	9.0	70.5	120.0	9.2	70.7	
Actuated g/C Ratio	0.13	0.17	0.17	0.06	0.11	1.00	0.08	0.59	1.00	0.08	0.59	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	226	613	268	223	392	1562	257	2987	1562	263	2988	
v/s Ratio Prot	c0.06	0.08		c0.03	0.01		0.04	0.37		c0.04	c0.43	
v/s Ratio Perm			c0.09			c0.03			0.03			
v/c Ratio	0.46	0.46	0.50	0.52	0.14	0.03	0.51	0.62	0.03	0.55	0.74	
Uniform Delay, d1	48.6	44.5	44.9	54.3	48.2	0.0	53.4	16.1	0.0	53.4	17.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.7	1.9	0.8	0.2	0.0	0.6	0.4	0.0	1.3	1.7	
Delay (s)	49.1	45.2	46.8	55.1	48.4	0.0	54.0	16.5	0.0	54.6	19.5	
Level of Service	D	D	D	E	D	A	D	B	A	D	B	
Approach Delay (s)		46.5			40.3			18.5			21.7	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	168	276	1745	91	211	2230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	3.0	2.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	177	291	1837	96	222	2347
RTOR Reduction (vph)	0	0	0	28	0	0
Lane Group Flow (vph)	177	291	1837	68	222	2347
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	13.2	67.6	28.3	28.3	10.1	44.4
Effective Green, g (s)	14.2	67.6	30.3	30.3	11.1	46.4
Actuated g/C Ratio	0.21	1.00	0.45	0.45	0.16	0.69
Clearance Time (s)	6.0		6.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	372	1583	2279	710	291	3490
v/s Ratio Prot	c0.10		c0.36		c0.13	0.46
v/s Ratio Perm		0.18		0.04		
v/c Ratio	0.48	0.18	0.81	0.10	0.76	0.67
Uniform Delay, d1	23.4	0.0	16.1	10.8	27.0	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.3	2.2	0.1	10.2	0.5
Delay (s)	24.4	0.3	18.3	10.8	37.2	6.7
Level of Service	C	A	B	B	D	A
Approach Delay (s)	9.4		18.0			9.3
Approach LOS	A		B			A

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

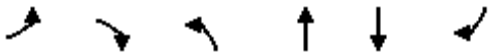


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	4	9	96	2	180	41	705	372	464	1010	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	0.85	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1863	1583	3433	1510	1504	1770	3539	1583	3433	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1863	1583	3433	1510	1504	1770	3539	1583	3433	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	4	9	101	2	189	43	742	392	488	1063	0
RTOR Reduction (vph)	0	0	9	0	87	86	0	0	215	0	0	0
Lane Group Flow (vph)	0	4	0	101	10	8	43	742	177	488	1063	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		1.3	1.3	6.7	6.7	6.7	5.0	33.9	33.9	17.1	46.0	
Effective Green, g (s)		1.3	1.3	6.7	6.7	6.7	5.0	33.9	33.9	17.1	46.0	
Actuated g/C Ratio		0.02	0.02	0.09	0.09	0.09	0.07	0.45	0.45	0.23	0.61	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		32	27	307	135	134	118	1600	716	783	2171	
v/s Ratio Prot		c0.00		c0.03	0.01		0.02	0.21		c0.14	c0.30	
v/s Ratio Perm			0.00			0.01			0.11			
v/c Ratio		0.12	0.01	0.33	0.08	0.06	0.36	0.46	0.25	0.62	0.49	
Uniform Delay, d1		36.3	36.2	32.0	31.3	31.3	33.5	14.2	12.7	26.1	8.0	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.8	0.1	0.6	0.2	0.2	1.9	1.0	0.8	1.6	0.8	
Delay (s)		38.0	36.3	32.7	31.6	31.5	35.4	15.2	13.5	27.6	8.8	
Level of Service		D	D	C	C	C	D	B	B	C	A	
Approach Delay (s)		36.8			31.9			15.4			14.7	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

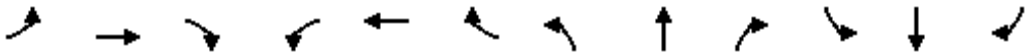
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	95	50	528	169	51	554
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	53	556	178	54	583
RTOR Reduction (vph)	0	41	0	82	0	0
Lane Group Flow (vph)	100	12	556	96	54	583
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.0	9.0	22.7	22.7	1.9	28.6
Effective Green, g (s)	10.5	10.5	25.7	25.7	2.9	31.6
Actuated g/C Ratio	0.22	0.22	0.54	0.54	0.06	0.66
Clearance Time (s)	4.0	4.0	6.0	6.0	4.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	390	349	1911	855	108	2349
v/s Ratio Prot	c0.06		c0.16		c0.03	0.16
v/s Ratio Perm		0.01		0.06		
v/c Ratio	0.26	0.03	0.29	0.11	0.50	0.25
Uniform Delay, d1	15.3	14.6	6.0	5.4	21.6	3.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.2	0.1	1.3	0.1
Delay (s)	15.7	14.6	6.1	5.5	23.0	3.3
Level of Service	B	B	A	A	C	A
Approach Delay (s)	15.3		6.0			5.0
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	47.6	Sum of lost time (s)	8.5
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1	155	436	1184	731	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	163	459	1246	769	16
RTOR Reduction (vph)	0	145	0	0	0	11
Lane Group Flow (vph)	1	18	459	1246	769	5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	6.2	6.2	17.5	38.7	16.2	16.2
Effective Green, g (s)	6.2	6.2	17.5	38.7	16.2	16.2
Actuated g/C Ratio	0.11	0.11	0.32	0.70	0.30	0.30
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	200	179	564	2495	1044	467
v/s Ratio Prot	0.00		c0.26	0.35	c0.22	
v/s Ratio Perm		c0.01				0.00
v/c Ratio	0.01	0.10	0.81	0.50	0.74	0.01
Uniform Delay, d1	21.6	21.9	17.2	3.7	17.4	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.3	8.8	0.2	2.7	0.0
Delay (s)	21.6	22.1	26.0	3.8	20.2	13.7
Level of Service	C	C	C	A	C	B
Approach Delay (s)	22.1			9.8	20.0	
Approach LOS	C			A	C	

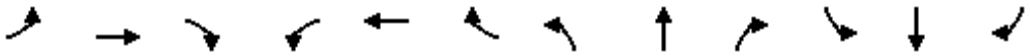
Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	54.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	9	10	55	1	189	6	1253	94	91	599	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1738			1775	1557	1770	3496		1770	3512	
Flt Permitted		0.94			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1662			1397	1557	1770	3496		1770	3512	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	9	11	58	1	199	6	1319	99	96	631	28
RTOR Reduction (vph)	0	9	0	0	0	148	0	6	0	0	3	0
Lane Group Flow (vph)	0	18	0	0	59	51	6	1412	0	96	656	0
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						
Actuated Green, G (s)		10.9			10.9	10.9	1.2	33.0		3.9	35.7	
Effective Green, g (s)		11.9			11.9	11.9	2.2	36.0		4.9	38.7	
Actuated g/C Ratio		0.19			0.19	0.19	0.04	0.59		0.08	0.63	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		322			270	301	63	2046		141	2210	
v/s Ratio Prot							0.00	c0.40		c0.05	c0.19	
v/s Ratio Perm		0.01			c0.04	0.03						
v/c Ratio		0.06			0.22	0.17	0.10	0.69		0.68	0.30	
Uniform Delay, d1		20.2			20.9	20.7	28.7	8.9		27.5	5.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			0.1	0.1	0.2	1.2		10.3	0.1	
Delay (s)		20.2			21.0	20.8	28.9	10.0		37.8	5.3	
Level of Service		C			C	C	C	B		D	A	
Approach Delay (s)		20.2			20.8			10.1			9.5	
Approach LOS		C			C			B			A	

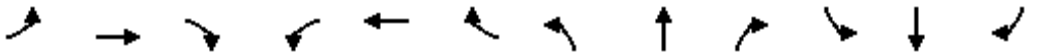
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	61.5	Sum of lost time (s)	11.4
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1	47	14	1	15	32	1210	64	26	608	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1775	1531		1779	1465	1770	3539	1544	1770	3520	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1775	1531		1779	1465	1770	3539	1544	1770	3520	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	1	49	15	1	16	34	1274	67	27	640	20
RTOR Reduction (vph)	0	0	44	0	0	15	0	0	14	0	2	0
Lane Group Flow (vph)	0	85	5	0	16	1	34	1274	53	27	658	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		8.4	8.4		2.4	2.4	3.8	59.4	59.4	2.1	57.7	
Effective Green, g (s)		9.4	9.4		3.4	3.4	4.8	62.4	60.4	3.1	60.7	
Actuated g/C Ratio		0.10	0.10		0.04	0.04	0.05	0.69	0.67	0.03	0.67	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		185	160		67	55	94	2454	1036	61	2374	
v/s Ratio Prot		c0.05			c0.01		0.02	c0.36		c0.02	0.19	
v/s Ratio Perm			0.00			0.00			0.03			
v/c Ratio		0.46	0.03		0.24	0.01	0.36	0.52	0.05	0.44	0.28	
Uniform Delay, d1		37.9	36.2		42.0	41.7	41.1	6.6	5.0	42.6	5.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.7	0.0		0.7	0.0	0.9	0.4	0.0	1.9	0.3	
Delay (s)		38.6	36.2		42.7	41.7	42.0	7.0	5.1	44.5	6.2	
Level of Service		D	D		D	D	D	A	A	D	A	
Approach Delay (s)		37.7			42.2			7.8			7.7	
Approach LOS		D			D			A			A	

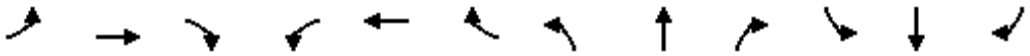
Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	491	0	697	11	3	1	294	807	0	1	520	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	517	0	734	12	3	1	309	849	0	1	547	147
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	78
Lane Group Flow (vph)	258	259	734	12	3	0	309	849	0	1	547	69
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	18.2	18.2	90.0	4.2	4.2		11.6	48.5		1.4	40.3	40.3
Effective Green, g (s)	20.2	20.2	90.0	6.2	6.2		13.6	50.5		3.4	42.3	42.3
Actuated g/C Ratio	0.22	0.22	1.00	0.07	0.07		0.15	0.56		0.04	0.47	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.9		2.0	4.3	4.3
Lane Grp Cap (vph)	377	377	1478	122	124		519	1986		67	1663	695
v/s Ratio Prot	0.15	c0.15		0.01	0.00		c0.09	0.24		0.00	0.15	
v/s Ratio Perm			c0.50									0.05
v/c Ratio	0.68	0.69	0.50	0.10	0.02		0.60	0.43		0.01	0.33	0.10
Uniform Delay, d1	32.0	32.0	0.0	39.3	39.1		35.6	11.4		41.7	15.0	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.1	4.1	1.2	0.1	0.0		1.2	0.7		0.0	0.2	0.1
Delay (s)	36.0	36.1	1.2	39.4	39.1		36.9	12.1		41.7	15.1	13.4
Level of Service	D	D	A	D	D		D	B		D	B	B
Approach Delay (s)		15.6			39.3			18.7			14.8	
Approach LOS		B			D			B			B	

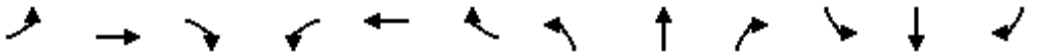
Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	2.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	1	13	0	1	25	30	743	0	22	713	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	3.0		4.0	3.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1602			1863	1583	1770	3539		1770	3498	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1602			1863	1583	1770	3539		1770	3498	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	1	14	0	1	26	32	782	0	23	751	63
RTOR Reduction (vph)	0	12	0	0	0	24	0	0	0	0	4	0
Lane Group Flow (vph)	89	3	0	0	1	2	32	782	0	23	810	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	8.1	8.1			3.7	3.7	2.5	32.4		1.0	30.9	
Effective Green, g (s)	9.1	9.1			4.7	4.7	3.5	34.4		2.0	32.9	
Actuated g/C Ratio	0.14	0.14			0.07	0.07	0.05	0.53		0.03	0.50	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	247	224			134	114	95	1867		54	1765	
v/s Ratio Prot	c0.05	0.00			0.00		c0.02	0.22		0.01	c0.23	
v/s Ratio Perm						c0.00						
v/c Ratio	0.36	0.01			0.01	0.02	0.34	0.42		0.43	0.46	
Uniform Delay, d1	25.4	24.2			28.1	28.1	29.7	9.3		31.0	10.4	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.0			0.0	0.1	2.1	0.2		5.3	0.2	
Delay (s)	26.3	24.2			28.1	28.2	31.8	9.5		36.4	10.6	
Level of Service	C	C			C	C	C	A		D	B	
Approach Delay (s)		26.0			28.2			10.4			11.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

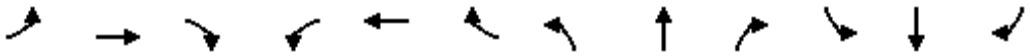


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	0	36	40	1	49	64	449	5	25	383	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583	1770	1589		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1583	1770	1589		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	0	38	42	1	52	67	473	5	26	403	99
RTOR Reduction (vph)	0	0	33	0	46	0	0	0	3	0	0	61
Lane Group Flow (vph)	36	36	5	42	7	0	67	473	2	26	403	38
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	8.2	8.2	8.2	6.8	6.8		4.1	25.7	25.7	1.0	22.6	22.6
Effective Green, g (s)	8.2	8.2	8.2	6.8	6.8		4.1	25.7	25.7	1.0	22.6	22.6
Actuated g/C Ratio	0.14	0.14	0.14	0.12	0.12		0.07	0.44	0.44	0.02	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	234	234	220	204	183		123	1542	690	30	1356	606
v/s Ratio Prot	c0.02	0.02		c0.02	0.00		c0.04	c0.13		0.01	0.11	
v/s Ratio Perm			0.00						0.00			0.02
v/c Ratio	0.15	0.15	0.02	0.21	0.04		0.54	0.31	0.00	0.87	0.30	0.06
Uniform Delay, d1	22.3	22.3	21.9	23.7	23.2		26.5	10.8	9.4	28.9	12.7	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0	0.2	0.0		2.6	0.2	0.0	105.7	0.2	0.1
Delay (s)	22.5	22.5	22.0	23.8	23.2		29.2	11.0	9.4	134.6	12.8	11.6
Level of Service	C	C	C	C	C		C	B	A	F	B	B
Approach Delay (s)		22.3			23.5			13.2			18.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	17.3
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

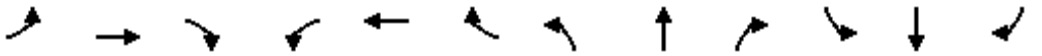
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	33	34	6	45	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	35	36	6	47	18
RTOR Reduction (vph)	0	32	0	6	0	0
Lane Group Flow (vph)	5	3	36	0	47	18
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	2.2	2.2	2.2	2.2	8.6	15.8
Effective Green, g (s)	2.2	2.2	2.2	2.2	8.6	15.8
Actuated g/C Ratio	0.08	0.08	0.08	0.08	0.31	0.56
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	139	124	146	124	544	1051
v/s Ratio Prot	c0.00		c0.02		c0.03	0.01
v/s Ratio Perm		0.00		0.00		
v/c Ratio	0.04	0.02	0.25	0.00	0.09	0.02
Uniform Delay, d1	11.9	11.9	12.1	11.9	6.9	2.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.9	0.0	0.1	0.0
Delay (s)	12.0	12.0	13.0	11.9	7.0	2.7
Level of Service	B	B	B	B	A	A
Approach Delay (s)	12.0		12.8			5.8
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.10		
Actuated Cycle Length (s)	28.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	362	38	44	459	11	38	8	36	6	46	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1713	1583		1809	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1713	1583		1809	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	381	40	46	483	12	40	8	38	6	48	12
RTOR Reduction (vph)	0	0	20	0	0	6	0	0	34	0	10	0
Lane Group Flow (vph)	3	381	20	46	483	6	24	24	4	0	56	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	0.6	22.7	22.7	2.1	24.2	24.2	3.8	3.8	3.8		3.7	
Effective Green, g (s)	2.6	24.7	24.7	3.1	26.2	26.2	4.8	4.8	4.8		5.7	
Actuated g/C Ratio	0.05	0.49	0.49	0.06	0.52	0.52	0.10	0.10	0.10		0.11	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	92	1748	782	110	1854	829	161	164	152		206	
v/s Ratio Prot	0.00	0.11		c0.03	c0.14		c0.01	0.01			c0.03	
v/s Ratio Perm			0.01			0.00			0.00			
v/c Ratio	0.03	0.22	0.03	0.42	0.26	0.01	0.15	0.15	0.02		0.27	
Uniform Delay, d1	22.5	7.2	6.5	22.6	6.6	5.7	20.7	20.7	20.5		20.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.9	0.1	0.0	0.2	0.2	0.0		0.3	
Delay (s)	22.6	7.3	6.5	23.5	6.7	5.7	20.9	20.9	20.5		20.5	
Level of Service	C	A	A	C	A	A	C	C	C		C	
Approach Delay (s)		7.3			8.1			20.7			20.5	
Approach LOS		A			A			C			C	

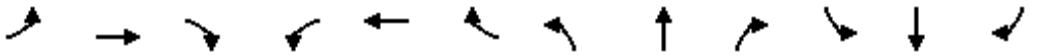
Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	345	119	69	366	7	70	9	30	14	36	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1703	1478	1770	1863	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1703	1478	1770	1863	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	363	125	73	385	7	74	9	32	15	38	81
RTOR Reduction (vph)	0	0	65	0	0	3	0	0	30	0	0	70
Lane Group Flow (vph)	26	363	60	73	385	4	41	42	2	15	38	11
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	0.4	18.3	18.3	1.5	19.4	19.4	2.0	2.0	2.0	3.8	3.8	3.8
Effective Green, g (s)	1.4	21.0	21.0	2.5	22.1	22.1	3.0	3.0	3.0	4.8	5.7	5.7
Actuated g/C Ratio	0.03	0.48	0.48	0.06	0.50	0.50	0.07	0.07	0.07	0.11	0.13	0.13
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	56	1693	707	101	1782	744	115	116	101	194	242	192
v/s Ratio Prot	0.01	0.10		c0.04	c0.11		0.02	c0.02		0.01	c0.02	
v/s Ratio Perm			0.04			0.00			0.00			0.01
v/c Ratio	0.46	0.21	0.08	0.72	0.22	0.00	0.36	0.36	0.02	0.08	0.16	0.05
Uniform Delay, d1	20.9	6.7	6.2	20.4	6.1	5.4	19.5	19.5	19.1	17.6	17.0	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.1	0.1	19.3	0.1	0.0	0.7	0.7	0.0	0.2	0.4	0.2
Delay (s)	23.1	6.7	6.3	39.7	6.2	5.4	20.2	20.2	19.1	17.8	17.4	16.9
Level of Service	C	A	A	D	A	A	C	C	B	B	B	B
Approach Delay (s)		7.5			11.4			19.9			17.1	
Approach LOS		A			B			B			B	

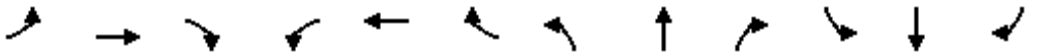
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	8.7
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



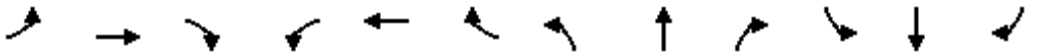
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	289	56	30	359	3	52	15	4	0	7	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1793	1583		1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1793	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	304	59	32	378	3	55	16	4	0	7	28
RTOR Reduction (vph)	0	0	28	0	0	1	0	0	4	0	0	27
Lane Group Flow (vph)	63	304	31	32	378	2	0	71	0	0	7	1
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	1.3	20.8	20.8	0.4	19.9	19.9		3.7	3.7		1.1	1.1
Effective Green, g (s)	2.3	22.8	22.8	1.4	21.9	21.9		4.7	4.7		2.1	2.1
Actuated g/C Ratio	0.05	0.53	0.53	0.03	0.51	0.51		0.11	0.11		0.05	0.05
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3		3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	95	1876	839	58	1802	806		196	173		91	77
v/s Ratio Prot	c0.04	0.09		0.02	c0.11			c0.04			c0.00	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.66	0.16	0.04	0.55	0.21	0.00		0.36	0.00		0.08	0.02
Uniform Delay, d1	20.0	5.2	4.8	20.5	5.8	5.2		17.8	17.1		19.5	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	12.7	0.1	0.0	6.3	0.1	0.0		1.3	0.0		0.1	0.0
Delay (s)	32.6	5.3	4.9	26.8	5.9	5.2		19.1	17.1		19.7	19.5
Level of Service	C	A	A	C	A	A		B	B		B	B
Approach Delay (s)		9.3			7.5			19.0			19.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	43.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	163	134	7	294	110	83	12	4	28	63	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1706	1583		1835	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1706	1583		1835	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	28	172	141	7	309	116	87	13	4	29	66	8
RTOR Reduction (vph)	0	0	59	0	0	69	0	0	3	0	0	7
Lane Group Flow (vph)	28	172	82	7	309	47	50	50	1	0	95	1
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	0.5	16.9	24.6	0.3	16.7	16.7	7.7	7.7	7.7		3.9	3.9
Effective Green, g (s)	1.5	18.9	26.6	1.3	18.7	18.7	8.7	8.7	8.7		4.9	4.9
Actuated g/C Ratio	0.03	0.41	0.58	0.03	0.41	0.41	0.19	0.19	0.19		0.11	0.11
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	58	1460	919	50	1445	646	319	324	301		196	169
v/s Ratio Prot	c0.02	0.05	0.02	0.00	c0.09		c0.03	0.03			c0.05	
v/s Ratio Perm			0.03			0.03			0.00			0.00
v/c Ratio	0.48	0.12	0.09	0.14	0.21	0.07	0.16	0.15	0.00		0.48	0.01
Uniform Delay, d1	21.8	8.3	4.2	21.7	8.8	8.3	15.5	15.5	15.0		19.3	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.3	0.1	0.0	0.5	0.1	0.1	0.3	0.3	0.0		0.7	0.0
Delay (s)	24.1	8.4	4.3	22.2	8.9	8.3	15.8	15.7	15.0		19.9	18.3
Level of Service	C	A	A	C	A	A	B	B	B		B	B
Approach Delay (s)		8.0			9.0			15.7			19.8	
Approach LOS		A			A			B			B	

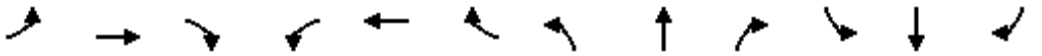
Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	35	84	43	12	5	23	704	71	38	1111	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1641		3433	1778		1676	4984	1414	1745	5187	1472
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1641		3433	1778		1676	4984	1414	1745	5187	1472
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	117	37	88	45	13	5	24	741	75	40	1169	99
RTOR Reduction (vph)	0	75	0	0	5	0	0	0	37	0	0	48
Lane Group Flow (vph)	117	50	0	45	13	0	24	741	38	40	1169	51
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	11.0	9.1		5.6	5.0		1.7	30.8	30.8	2.5	31.6	31.6
Effective Green, g (s)	12.0	10.1		6.6	6.0		2.7	34.2	34.2	3.5	35.0	35.0
Actuated g/C Ratio	0.18	0.15		0.10	0.09		0.04	0.51	0.51	0.05	0.52	0.52
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	314	246		337	159		67	2533	719	91	2698	766
v/s Ratio Prot	c0.07	0.03		c0.01	0.01		0.01	0.15		c0.02	c0.23	
v/s Ratio Perm									0.03			0.03
v/c Ratio	0.37	0.20		0.13	0.08		0.36	0.29	0.05	0.44	0.43	0.07
Uniform Delay, d1	24.3	25.1		27.7	28.1		31.5	9.6	8.4	30.9	10.0	8.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3		0.1	0.1		1.2	0.1	0.1	1.2	0.2	0.1
Delay (s)	24.6	25.4		27.8	28.2		32.7	9.7	8.4	32.2	10.2	8.1
Level of Service	C	C		C	C		C	A	A	C	B	A
Approach Delay (s)		25.0			27.9			10.2			10.7	
Approach LOS		C			C			B			B	

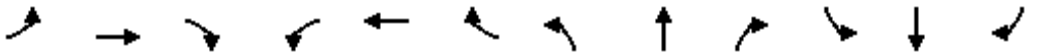
Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	6.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



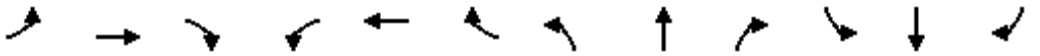
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	102	96	166	245	10	114	766	85	27	1170	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	1851		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	1851		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	107	101	175	258	11	120	806	89	28	1232	63
RTOR Reduction (vph)	0	0	87	0	1	0	0	0	33	0	0	26
Lane Group Flow (vph)	31	107	14	175	268	0	120	806	56	28	1232	37
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	5.0	21.1	21.1	12.0	28.1		9.6	94.5	94.5	3.8	87.6	87.6
Effective Green, g (s)	5.0	21.1	21.1	12.0	28.1		9.6	94.5	94.5	3.8	87.6	87.6
Actuated g/C Ratio	0.03	0.14	0.14	0.08	0.19		0.06	0.63	0.63	0.03	0.58	0.58
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	5.6	5.6	2.0	4.3	4.3
Lane Grp Cap (vph)	59	498	223	275	347		220	3204	997	87	2970	924
v/s Ratio Prot	0.02	0.03		c0.05	c0.14		c0.03	0.16		0.01	c0.24	
v/s Ratio Perm			0.01						0.04			0.02
v/c Ratio	0.53	0.21	0.06	0.64	0.77		0.55	0.25	0.06	0.32	0.41	0.04
Uniform Delay, d1	71.3	57.1	55.9	66.9	57.9		68.1	12.2	10.6	71.8	17.1	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.50	0.33	0.04	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.3	0.2	3.5	10.7		1.4	0.2	0.1	0.8	0.1	0.0
Delay (s)	75.2	57.4	56.0	70.4	68.6		103.6	4.2	0.6	72.6	17.3	13.3
Level of Service	E	E	E	E	E		F	A	A	E	B	B
Approach Delay (s)		59.1			69.3			15.6			18.3	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



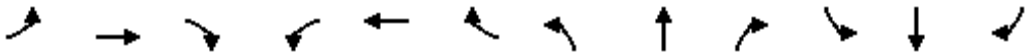
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	31	129	175	47	59	108	931	270	108	1344	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.3	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1762	1583	1610	3161		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1762	1583	1610	3161		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	33	136	184	49	62	114	980	284	114	1415	56
RTOR Reduction (vph)	0	0	128	0	35	0	0	0	73	0	0	19
Lane Group Flow (vph)	22	36	8	99	161	0	114	980	211	114	1415	37
Turn Type	Split		Perm	Split			Prot		pm+ov	Prot		Perm
Protected Phases	8	8		7	7		5	2	7	1	6	
Permitted Phases			8						2			6
Actuated Green, G (s)	8.8	8.8	8.8	16.0	16.0		10.3	95.5	111.5	10.1	95.3	95.3
Effective Green, g (s)	8.8	8.8	8.8	16.0	16.0		10.3	95.5	111.5	10.1	95.3	95.3
Actuated g/C Ratio	0.06	0.06	0.06	0.11	0.11		0.07	0.64	0.74	0.07	0.64	0.64
Clearance Time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.3	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	4.3	4.3
Lane Grp Cap (vph)	99	103	93	172	337		236	3237	1233	231	3231	1006
v/s Ratio Prot	0.01	c0.02		c0.06	0.05		c0.03	0.19	0.02	0.03	c0.28	
v/s Ratio Perm			0.01						0.12			0.02
v/c Ratio	0.22	0.35	0.09	0.58	0.48		0.48	0.30	0.17	0.49	0.44	0.04
Uniform Delay, d1	67.3	67.8	66.8	63.8	63.1		67.3	12.3	5.7	67.5	13.8	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.81	0.74	0.89	0.51	0.26
Incremental Delay, d2	1.1	2.1	0.4	4.6	1.1		1.5	0.2	0.1	1.6	0.1	0.0
Delay (s)	68.5	69.9	67.2	68.4	64.1		66.7	10.2	4.2	61.8	7.2	2.7
Level of Service	E	E	E	E	E		E	B	A	E	A	A
Approach Delay (s)		67.8			65.6			13.7			11.0	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



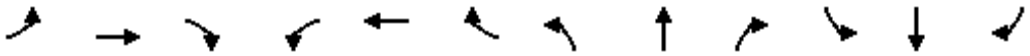
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	290	0	0	535	375	774	0	0	1518	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0			4.0	3.0	4.0			4.0	4.0
Lane Util. Factor			1.00			1.00	0.97	0.91			0.91	1.00
Frt			0.86			0.86	1.00	1.00			1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1611			1611	3433	5085			5085	1583
Flt Permitted			1.00			1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1611			1611	3433	5085			5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	305	0	0	563	395	815	0	0	1598	185
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	50
Lane Group Flow (vph)	0	0	305	0	0	563	395	815	0	0	1598	135
Turn Type			Free			Free	Prot					Perm
Protected Phases							5	2			6	
Permitted Phases			Free			Free						6
Actuated Green, G (s)			75.0			75.0	13.8	75.0			52.2	52.2
Effective Green, g (s)			75.0			75.0	14.8	75.0			53.2	53.2
Actuated g/C Ratio			1.00			1.00	0.20	1.00			0.71	0.71
Clearance Time (s)							4.0	5.0			5.0	5.0
Vehicle Extension (s)							3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			1611			1611	677	5085			3607	1123
v/s Ratio Prot							c0.12	0.16			c0.31	
v/s Ratio Perm			0.19			0.35						0.09
v/c Ratio			0.19			0.35	0.58	0.16			0.44	0.12
Uniform Delay, d1			0.0			0.0	27.3	0.0			4.6	3.5
Progression Factor			1.00			1.00	0.94	1.00			0.86	1.66
Incremental Delay, d2			0.3			0.6	1.3	0.1			0.4	0.2
Delay (s)			0.3			0.6	27.0	0.1			4.3	6.0
Level of Service			A			A	C	A			A	A
Approach Delay (s)		0.3			0.6			8.9			4.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



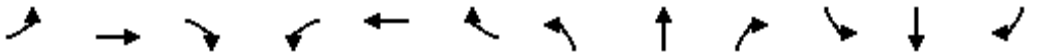
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	1222	0	0	212	0	955	183	530	1302	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.3			3.0		4.7	4.7	4.7	4.7	
Lane Util. Factor			1.00			1.00		0.91	1.00	0.97	0.91	
Frt			0.86			0.86		1.00	0.85	1.00	1.00	
Flt Protected			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1611			1611		5085	1583	3433	5085	
Flt Permitted			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1611			1611		5085	1583	3433	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	1286	0	0	223	0	1005	193	558	1371	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	0	0	1286	0	0	223	0	1005	180	558	1371	0
Turn Type			custom			Free			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases			5			Free			2			
Actuated Green, G (s)			103.7			150.0		104.3	104.3	34.3	35.3	
Effective Green, g (s)			103.7			150.0		105.3	105.3	35.3	36.3	
Actuated g/C Ratio			0.69			1.00		0.70	0.70	0.24	0.24	
Clearance Time (s)			5.3					5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)			1114			1611		3570	1111	808	1231	
v/s Ratio Prot								0.20		0.16	c0.27	
v/s Ratio Perm			c0.80			c0.14			0.11			
v/c Ratio			1.15			0.14		0.28	0.16	0.69	1.11	
Uniform Delay, d1			23.1			0.0		8.3	7.5	52.4	56.9	
Progression Factor			1.00			1.00		0.99	0.85	0.70	0.78	
Incremental Delay, d2			80.0			0.2		0.2	0.3	2.4	62.3	
Delay (s)			103.1			0.2		8.5	6.7	38.8	106.9	
Level of Service			F			A		A	A	D	F	
Approach Delay (s)		103.1			0.2			8.2			87.2	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM Average Control Delay	67.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	5.3
Intersection Capacity Utilization	109.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



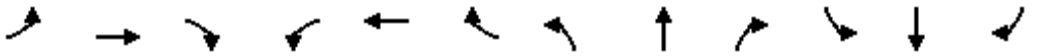
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	1	9	8	9	17	43	0	4	13	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.95			0.95		1.00	1.00		1.00	0.92	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750			1745		1770	3539		1770	1710	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1779			1776		1770	3539		1770	1710	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	1	1	9	8	9	18	45	0	4	14	17
RTOR Reduction (vph)	0	1	0	0	9	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	2	0	0	17	0	18	45	0	4	23	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		0.7			0.7		0.7	19.2		0.7	19.2	
Effective Green, g (s)		0.7			0.7		0.7	19.2		0.7	19.2	
Actuated g/C Ratio		0.02			0.02		0.02	0.51		0.02	0.51	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		33			33		33	1822		33	880	
v/s Ratio Prot							c0.01	0.01		0.00	c0.01	
v/s Ratio Perm		c0.00			c0.01							
v/c Ratio		0.06			0.52		0.55	0.02		0.12	0.03	
Uniform Delay, d1		18.0			18.1		18.1	4.4		18.0	4.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			6.7		9.5	0.0		0.6	0.0	
Delay (s)		18.3			24.8		27.6	4.5		18.6	4.5	
Level of Service		B			C		C	A		B	A	
Approach Delay (s)		18.3			24.8			11.1			6.1	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	37.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



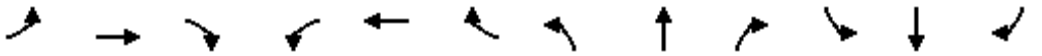
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	9	8	59	10	64	20	987	89	291	1954	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.4	3.4	3.0	2.5	3.2	3.0	2.5	3.2	3.2
Lane Util. Factor	0.86	0.86	1.00	0.86	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3044	3090	1583	3044	3104	1583	3335	4940	1538	3335	4940	1489
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3044	3090	1583	3044	3104	1583	3335	4940	1538	3335	4940	1489
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	9	8	62	11	67	21	1039	94	306	2057	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	52	34	8	42	31	67	21	1039	94	306	2057	44
Confl. Peds. (#/hr)												10
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	7.3	7.3	150.0	5.9	5.9	150.0	3.6	100.1	150.0	18.1	114.6	114.6
Effective Green, g (s)	8.8	8.8	150.0	7.4	7.4	150.0	5.1	102.6	150.0	19.6	117.1	117.1
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.05	1.00	0.03	0.68	1.00	0.13	0.78	0.78
Clearance Time (s)	4.0	4.0		4.9	4.9		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.9	3.9		2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	179	181	1583	150	153	1583	113	3379	1538	436	3856	1162
v/s Ratio Prot	c0.02	0.01		c0.01	0.01		0.01	0.21		c0.09	c0.42	
v/s Ratio Perm			0.01			0.04			0.06			0.03
v/c Ratio	0.29	0.19	0.01	0.28	0.20	0.04	0.19	0.31	0.06	0.70	0.53	0.04
Uniform Delay, d1	67.6	67.2	0.0	68.7	68.5	0.0	70.4	9.5	0.0	62.4	6.2	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.10	0.10	1.00	0.95	0.45	0.20
Incremental Delay, d2	0.9	0.5	0.0	1.4	0.9	0.1	0.2	0.1	0.1	0.4	0.0	0.0
Delay (s)	68.5	67.7	0.0	70.1	69.3	0.1	77.8	1.1	0.1	59.8	2.8	0.7
Level of Service	E	E	A	E	E	A	E	A	A	E	A	A
Approach Delay (s)		62.4			36.4			2.4			10.0	
Approach LOS		E			D			A			A	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1	118	5	2	4	42	1466	1	5	1534	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1775	1583		1799	1583	1770	3539		1770	3539	1583
Flt Permitted		0.95	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1775	1583		1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	181	1	124	5	2	4	44	1543	1	5	1615	164
RTOR Reduction (vph)	0	0	101	0	0	4	0	0	0	0	0	46
Lane Group Flow (vph)	0	182	23	0	7	0	44	1544	0	5	1615	118
Turn Type	Split		Perm	Perm		Perm	Prot			Prot		Perm
Protected Phases	4	4			3		5	2		1	6	
Permitted Phases			4	3		3						6
Actuated Green, G (s)		12.5	12.5		1.4	1.4	2.9	39.4		0.8	37.3	37.3
Effective Green, g (s)		13.5	13.5		2.4	2.4	5.9	41.4		1.8	40.3	40.3
Actuated g/C Ratio		0.18	0.18		0.03	0.03	0.08	0.57		0.02	0.55	0.55
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		328	293		61	52	143	2007		44	1954	874
v/s Ratio Prot		c0.10					c0.02	0.44		0.00	c0.46	
v/s Ratio Perm			0.01		c0.00	0.00						0.07
v/c Ratio		0.55	0.08		0.11	0.00	0.31	0.77		0.11	0.83	0.13
Uniform Delay, d1		27.0	24.6		34.3	34.1	31.6	12.1		34.8	13.5	7.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		1.2	0.0		0.3	0.0	0.4	2.0		0.4	3.2	0.1
Delay (s)		28.2	24.6		34.6	34.1	32.1	14.1		35.2	16.7	8.0
Level of Service		C	C		C	C	C	B		D	B	A
Approach Delay (s)		26.7			34.4			14.6			15.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	10.9
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

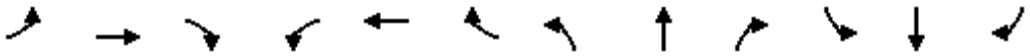


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	14	373	3	6	18	81	1209	8	7	1371	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	0.86		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1594		1770	1863	1583	3433	3536		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1594		1770	1863	1583	3433	3536		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	314	15	393	3	6	19	85	1273	8	7	1443	325
RTOR Reduction (vph)	0	118	0	0	0	19	0	0	0	0	0	93
Lane Group Flow (vph)	314	290	0	3	6	0	85	1281	0	7	1443	232
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						6
Actuated Green, G (s)	18.4	18.4		1.0	1.0	1.0	2.3	40.9		0.5	39.1	39.1
Effective Green, g (s)	19.4	19.4		2.0	2.0	2.0	3.3	43.4		1.5	41.6	41.6
Actuated g/C Ratio	0.25	0.25		0.03	0.03	0.03	0.04	0.55		0.02	0.53	0.53
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0		2.0	2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	851	395		45	48	40	145	1960		34	1880	841
v/s Ratio Prot	0.09	c0.18		0.00	c0.00		c0.02	0.36		0.00	c0.41	
v/s Ratio Perm						0.00						0.15
v/c Ratio	0.37	0.73		0.07	0.12	0.01	0.59	0.65		0.21	0.77	0.28
Uniform Delay, d1	24.4	27.1		37.2	37.3	37.2	36.8	12.2		37.8	14.5	10.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	6.9		0.2	0.4	0.0	3.9	1.1		1.1	2.3	0.4
Delay (s)	24.7	34.0		37.5	37.7	37.2	40.7	13.3		38.9	16.8	10.5
Level of Service	C	C		D	D	D	D	B		D	B	B
Approach Delay (s)		29.9			37.4			15.0			15.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

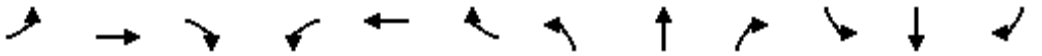
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	143	477	864	406	927	828
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	4.3
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	151	502	909	427	976	872
RTOR Reduction (vph)	0	23	0	240	0	0
Lane Group Flow (vph)	151	479	909	187	976	872
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	7.9	23.8	24.7	24.7	15.9	44.6
Effective Green, g (s)	8.9	28.4	27.0	27.0	18.2	45.6
Actuated g/C Ratio	0.14	0.46	0.44	0.44	0.29	0.74
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	5.3
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	494	771	1546	692	1011	2611
v/s Ratio Prot	0.04	c0.18	c0.26		c0.28	0.25
v/s Ratio Perm		0.12		0.12		
v/c Ratio	0.31	0.62	0.59	0.27	0.97	0.33
Uniform Delay, d1	23.7	12.6	13.2	11.1	21.5	2.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.1	0.7	0.3	20.1	0.1
Delay (s)	23.8	13.8	13.9	11.4	41.6	2.9
Level of Service	C	B	B	B	D	A
Approach Delay (s)	16.1		13.1			23.3
Approach LOS	B		B			C

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	4.7
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	9	18	36	20	45	13	1050	0	47	783	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.94		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1669			1720		1770	3539		1770	3484	
Flt Permitted	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1669			1720		1770	3539		1770	3484	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	295	9	19	38	21	47	14	1105	0	49	824	95
RTOR Reduction (vph)	0	8	0	0	45	0	0	0	0	0	11	0
Lane Group Flow (vph)	162	153	0	0	61	0	14	1105	0	49	908	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	10.3	10.3			3.1		0.5	26.3		1.7	27.1	
Effective Green, g (s)	10.3	10.3			3.1		0.5	26.3		1.7	27.1	
Actuated g/C Ratio	0.18	0.18			0.05		0.01	0.45		0.03	0.46	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Vehicle Extension (s)	2.0	2.0			2.0		2.0	4.2		2.0	3.2	
Lane Grp Cap (vph)	297	295			91		15	1596		52	1619	
v/s Ratio Prot	c0.10	0.09			c0.04		0.01	c0.31		c0.03	0.26	
v/s Ratio Perm												
v/c Ratio	0.55	0.52			0.68		0.93	0.69		0.94	0.56	
Uniform Delay, d1	21.9	21.7			27.1		28.9	12.8		28.3	11.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.6			14.5		195.4	1.5		102.2	0.5	
Delay (s)	23.0	22.4			41.6		224.3	14.2		130.4	11.8	
Level of Service	C	C			D		F	B		F	B	
Approach Delay (s)		22.7			41.6			16.9			17.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	16.9
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

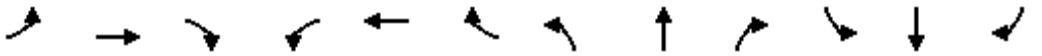


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	10	27	25	1	7	40	1061	21	8	809	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1777	1583	1770	3529		1770	3522	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1777	1583	1770	3529		1770	3522	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	11	28	26	1	7	42	1117	22	8	852	28
RTOR Reduction (vph)	0	0	25	0	0	7	0	1	0	0	2	0
Lane Group Flow (vph)	0	91	3	0	27	0	42	1138	0	8	878	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		7.3	7.3		2.2	2.2	4.6	33.5		0.6	29.5	
Effective Green, g (s)		7.3	7.3		2.2	2.2	4.6	33.5		0.6	29.5	
Actuated g/C Ratio		0.12	0.12		0.04	0.04	0.08	0.55		0.01	0.49	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)		215	191		65	58	135	1954		18	1717	
v/s Ratio Prot		c0.05			c0.02		0.02	c0.32		0.00	c0.25	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.42	0.02		0.42	0.00	0.31	0.58		0.44	0.51	
Uniform Delay, d1		24.6	23.4		28.5	28.1	26.5	8.9		29.8	10.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		1.6	0.0	0.5	0.6		6.2	0.4	
Delay (s)		25.1	23.5		30.1	28.1	26.9	9.5		36.0	11.0	
Level of Service		C	C		C	C	C	A		D	B	
Approach Delay (s)		24.7			29.7			10.1			11.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	17.8
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

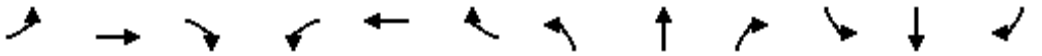
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	53	148	322	7	366	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	156	339	7	385	614
RTOR Reduction (vph)	0	122	0	5	0	0
Lane Group Flow (vph)	56	34	339	2	385	614
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.0	9.0	10.1	10.1	17.2	31.3
Effective Green, g (s)	11.0	11.0	12.8	12.8	19.2	34.0
Actuated g/C Ratio	0.22	0.22	0.26	0.26	0.38	0.68
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	755	348	1302	405	680	3458
v/s Ratio Prot	0.02		c0.07		c0.22	0.12
v/s Ratio Perm		c0.02		0.00		
v/c Ratio	0.07	0.10	0.26	0.00	0.57	0.18
Uniform Delay, d1	15.5	15.5	14.8	13.9	12.1	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.2	0.0	0.6	0.0
Delay (s)	15.5	15.6	15.0	13.9	12.8	3.0
Level of Service	B	B	B	B	B	A
Approach Delay (s)	15.6		15.0			6.7
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	449	54	204	368	93	18	3	161	89	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	5003		1770	5085	1583		1786	1583	1681	1690	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	5003		1770	5085	1583		1786	1583	1681	1690	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	473	57	215	387	98	19	3	169	94	3	16
RTOR Reduction (vph)	0	16	0	0	0	59	0	0	139	0	0	14
Lane Group Flow (vph)	36	514	0	215	387	39	0	22	30	49	48	2
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	5.9	18.7		12.4	25.2	25.2		11.0	11.0	8.9	8.9	8.9
Effective Green, g (s)	6.9	21.0		13.4	27.5	27.5		12.0	12.0	9.9	9.9	9.9
Actuated g/C Ratio	0.10	0.31		0.20	0.40	0.40		0.18	0.18	0.14	0.14	0.14
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	179	1538		347	2047	637		314	278	244	245	229
v/s Ratio Prot	0.02	c0.10		c0.12	0.08			0.01		c0.03	0.03	
v/s Ratio Perm						0.02			c0.02			0.00
v/c Ratio	0.20	0.33		0.62	0.19	0.06		0.07	0.11	0.20	0.20	0.01
Uniform Delay, d1	28.2	18.3		25.1	13.2	12.5		23.5	23.6	25.7	25.7	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3		2.3	0.1	0.1		0.0	0.1	0.1	0.1	0.0
Delay (s)	28.4	18.5		27.4	13.3	12.6		23.5	23.7	25.9	25.8	25.0
Level of Service	C	B		C	B	B		C	C	C	C	C
Approach Delay (s)		19.1			17.5			23.7			25.7	
Approach LOS		B			B			C			C	

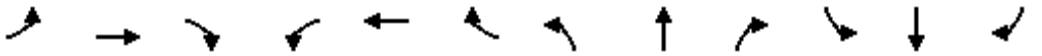
Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	217	745	282	65	217	76	378	432	35	80	331	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	228	784	297	68	228	80	398	455	37	84	348	48
RTOR Reduction (vph)	0	0	187	0	0	57	0	0	28	0	0	37
Lane Group Flow (vph)	228	784	110	68	228	23	398	455	9	84	348	11
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	10.4	23.5	23.5	4.3	17.0	17.0	9.3	16.5	16.5	6.3	13.5	13.5
Effective Green, g (s)	11.4	25.5	25.5	5.3	19.7	19.7	10.3	18.8	17.5	7.3	15.8	15.8
Actuated g/C Ratio	0.17	0.37	0.37	0.08	0.29	0.29	0.15	0.27	0.25	0.11	0.23	0.23
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	293	1312	587	136	1013	453	514	1390	403	377	1209	376
v/s Ratio Prot	c0.13	c0.22		0.04	0.06		c0.12	c0.09		0.02	0.07	
v/s Ratio Perm			0.07			0.01			0.01			0.01
v/c Ratio	0.78	0.60	0.19	0.50	0.23	0.05	0.77	0.33	0.02	0.22	0.29	0.03
Uniform Delay, d1	27.5	17.5	14.6	30.5	18.7	17.8	28.1	20.0	19.2	28.2	21.9	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.2	1.1	0.3	1.1	0.2	0.1	6.5	0.2	0.0	0.1	0.2	0.1
Delay (s)	38.7	18.6	15.0	31.5	18.9	17.9	34.7	20.2	19.3	28.3	22.1	20.6
Level of Service	D	B	B	C	B	B	C	C	B	C	C	C
Approach Delay (s)		21.3			21.0			26.6			23.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

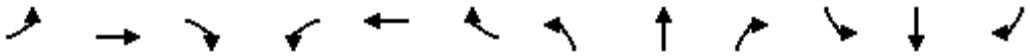


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	2	13	25	2	137	50	795	41	134	457	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.91	1.00
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1786	1583		1807	1600	1770	3737		1832	5790	1639
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1786	1583		1807	1600	1770	3737		1832	5790	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	2	14	26	2	144	53	837	43	141	481	22
RTOR Reduction (vph)	0	0	13	0	0	108	0	4	0	0	0	10
Lane Group Flow (vph)	0	14	1	0	28	36	53	876	0	141	481	12
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		2.5	2.5		3.7	11.6	1.6	22.8		7.9	29.1	29.1
Effective Green, g (s)		2.5	2.5		3.7	13.6	1.6	25.1		8.9	31.4	29.1
Actuated g/C Ratio		0.05	0.05		0.07	0.25	0.03	0.46		0.16	0.58	0.54
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		82	73		123	490	52	1731		301	3354	880
v/s Ratio Prot		c0.01			c0.02	0.01	c0.03	c0.23		c0.08	0.08	
v/s Ratio Perm			0.00			0.01						0.01
v/c Ratio		0.17	0.01		0.23	0.07	1.02	0.51		0.47	0.14	0.01
Uniform Delay, d1		24.9	24.7		23.9	15.5	26.3	10.2		20.5	5.2	5.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4	0.0		0.3	0.0	130.4	0.5		0.4	0.0	0.0
Delay (s)		25.2	24.7		24.2	15.5	156.7	10.7		20.9	5.3	5.9
Level of Service		C	C		C	B	F	B		C	A	A
Approach Delay (s)		24.9			16.9			19.0			8.7	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

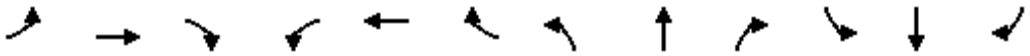
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	190	800	1	17	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	2.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3539		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3539		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	200	842	1	18	466
RTOR Reduction (vph)	0	156	0	0	0	0
Lane Group Flow (vph)	2	44	843	0	18	466
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	8.0	8.0	19.6		0.9	24.4
Effective Green, g (s)	9.0	9.0	21.6		1.9	26.4
Actuated g/C Ratio	0.22	0.22	0.52		0.05	0.64
Clearance Time (s)	4.0	4.0	4.8		4.0	4.9
Vehicle Extension (s)	2.0	2.0	3.9		2.0	2.9
Lane Grp Cap (vph)	386	345	1851		81	2262
v/s Ratio Prot	0.00		c0.24		0.01	c0.13
v/s Ratio Perm		c0.03				
v/c Ratio	0.01	0.13	0.46		0.22	0.21
Uniform Delay, d1	12.6	13.0	6.2		19.0	3.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.1	0.2		0.5	0.0
Delay (s)	12.6	13.0	6.4		19.5	3.1
Level of Service	B	B	A		B	A
Approach Delay (s)	13.0		6.4			3.7
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	41.3	Sum of lost time (s)	8.7
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	5	0	10	0	1477	27	23	1229	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		3.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3530		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3530		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	5	0	11	0	1555	28	24	1294	0
RTOR Reduction (vph)	0	0	0	0	0	11	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	5	0	0	0	1582	0	24	1294	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				1.3		1.3		51.5		0.9	56.4	
Effective Green, g (s)				2.3		2.3		53.5		1.9	58.4	
Actuated g/C Ratio				0.03		0.03		0.72		0.03	0.79	
Clearance Time (s)				4.0		4.0		4.9		4.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				55		49		2549		45	2789	
v/s Ratio Prot				c0.00				c0.45		0.01	c0.37	
v/s Ratio Perm						0.00						
v/c Ratio				0.09		0.01		0.62		0.53	0.46	
Uniform Delay, d1				34.9		34.8		5.2		35.7	2.6	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.3		0.0		0.7		6.0	0.3	
Delay (s)				35.1		34.8		5.9		41.6	2.9	
Level of Service				D		C		A		D	A	
Approach Delay (s)		0.0			34.9			5.9			3.6	
Approach LOS		A			C			A			A	

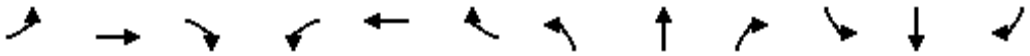
Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	16.3
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	24	31	60	27	54	35	1678	41	84	1175	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1645		1770	3522		1770	3523	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1645		1770	3522		1770	3523	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	25	33	63	28	57	37	1766	43	88	1237	29
RTOR Reduction (vph)	0	0	30	0	51	0	0	2	0	0	2	0
Lane Group Flow (vph)	51	25	3	63	34	0	37	1807	0	88	1264	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3									
Actuated Green, G (s)	6.1	6.1	6.1	7.7	7.7		3.9	47.0		5.3	48.8	
Effective Green, g (s)	7.1	7.1	7.1	8.7	8.7		4.9	49.0		6.3	50.8	
Actuated g/C Ratio	0.09	0.09	0.09	0.10	0.10		0.06	0.59		0.08	0.61	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	151	159	135	185	172		104	2069		134	2146	
v/s Ratio Prot	c0.03	0.01		c0.04	0.02		0.02	c0.51		c0.05	0.36	
v/s Ratio Perm			0.00									
v/c Ratio	0.34	0.16	0.02	0.34	0.20		0.36	0.87		0.66	0.59	
Uniform Delay, d1	35.9	35.4	35.0	34.7	34.2		37.7	14.6		37.5	9.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.4	0.1	0.9	0.5		0.8	4.6		8.5	0.5	
Delay (s)	37.0	35.8	35.0	35.6	34.6		38.5	19.2		46.0	10.4	
Level of Service	D	D	D	D	C		D	B		D	B	
Approach Delay (s)		36.1			35.0			19.6			12.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	83.4	Sum of lost time (s)	12.3
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

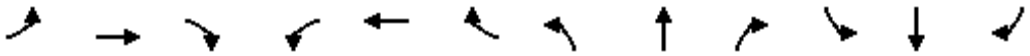
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	23	5	59	18	21	11	2516	16	12	1610	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.97		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2026			1983		1770	4983		1770	4962	
Flt Permitted		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2026			1983		1770	4983		1770	4962	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	24	5	62	19	22	12	2648	17	13	1695	57
RTOR Reduction (vph)	0	4	0	0	17	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	77	0	0	86	0	12	2664	0	13	1747	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split			Split			Prot			Prot		
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)		3.2			5.7		0.6	32.8		0.6	32.8	
Effective Green, g (s)		4.2			6.7		1.6	35.5		1.6	35.5	
Actuated g/C Ratio		0.07			0.11		0.03	0.59		0.03	0.59	
Clearance Time (s)		4.0			4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0		2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		142			221		47	2948		47	2936	
v/s Ratio Prot		c0.04			c0.04		0.01	c0.53		c0.01	0.35	
v/s Ratio Perm												
v/c Ratio		0.54			0.39		0.26	0.90		0.28	0.60	
Uniform Delay, d1		27.0			24.8		28.6	10.8		28.6	7.7	
Progression Factor		1.00			1.00		1.25	0.66		1.23	0.64	
Incremental Delay, d2		2.3			0.4		0.8	3.9		0.9	0.3	
Delay (s)		29.3			25.2		36.6	11.1		36.1	5.2	
Level of Service		C			C		D	B		D	A	
Approach Delay (s)		29.3			25.2			11.2			5.4	
Approach LOS		C			C			B			A	

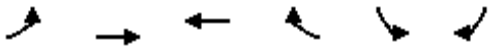
Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



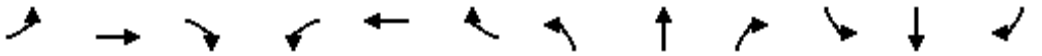
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	0	20	64	0	18	16	2501	97	4	1630	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00		0.97	1.00		0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1531	1770		1531	1770	5051		1770	5083	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1531	1770		1531	1770	5051		1770	5083	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	49	0	21	67	0	19	17	2633	102	4	1716	4
RTOR Reduction (vph)	0	0	19	0	0	18	0	5	0	0	0	0
Lane Group Flow (vph)	49	0	2	67	0	1	17	2730	0	4	1720	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	3.6		3.6	3.6		3.6	0.6	39.1		0.6	39.1	
Effective Green, g (s)	4.6		4.6	4.6		4.6	1.6	40.6		2.6	40.6	
Actuated g/C Ratio	0.08		0.08	0.08		0.08	0.03	0.68		0.04	0.68	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	136		117	136		117	47	3418		77	3439	
v/s Ratio Prot	0.03			c0.04			c0.01	c0.54		0.00	0.34	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.36		0.01	0.49		0.01	0.36	0.80		0.05	0.50	
Uniform Delay, d1	26.3		25.6	26.6		25.6	28.7	6.8		27.5	4.7	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.24	0.69	
Incremental Delay, d2	0.6		0.0	1.0		0.0	1.7	2.0		0.1	0.1	
Delay (s)	26.9		25.6	27.6		25.6	30.4	8.9		34.3	3.4	
Level of Service	C		C	C		C	C	A		C	A	
Approach Delay (s)		26.5			27.2			9.0			3.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



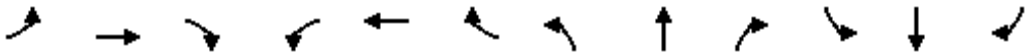
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	9	164	246	67	27	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	3539	3539	1583	1770	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1770	3539	3539	1583	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	173	259	71	28	0
RTOR Reduction (vph)	0	0	0	26	0	0
Lane Group Flow (vph)	9	173	259	45	28	0
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.6	31.4	26.8	26.8	2.3	
Effective Green, g (s)	1.6	32.4	27.8	27.8	3.3	
Actuated g/C Ratio	0.04	0.73	0.63	0.63	0.07	
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	
Lane Grp Cap (vph)	64	2588	2221	993	132	
v/s Ratio Prot	c0.01	0.05	c0.07		c0.02	
v/s Ratio Perm				0.03		
v/c Ratio	0.14	0.07	0.12	0.04	0.21	
Uniform Delay, d1	20.7	1.7	3.3	3.2	19.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.0	0.0	0.0	0.3	
Delay (s)	21.1	1.7	3.4	3.2	19.6	
Level of Service	C	A	A	A	B	
Approach Delay (s)		2.7	3.3		19.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	44.3	Sum of lost time (s)	11.6
Intersection Capacity Utilization	18.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



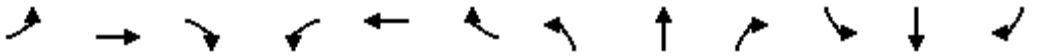
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	346	301	80	185	37	255	552	87	54	217	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4939	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4939	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	49	364	317	84	195	39	268	581	92	57	228	54
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	39	0
Lane Group Flow (vph)	49	364	317	84	195	39	268	581	92	57	243	0
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			
Actuated Green, G (s)	3.2	14.3	66.1	5.3	16.8	66.1	11.5	23.8	66.1	3.7	16.0	
Effective Green, g (s)	4.2	17.0	66.1	6.3	19.5	66.1	12.5	26.1	66.1	4.7	18.3	
Actuated g/C Ratio	0.06	0.26	1.00	0.10	0.30	1.00	0.19	0.39	1.00	0.07	0.28	
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	112	910	1583	169	1044	1583	335	1397	1583	126	1367	
v/s Ratio Prot	0.03	c0.10		c0.05	0.06		c0.15	c0.16		0.03	0.05	
v/s Ratio Perm			c0.20			0.02			0.06			
v/c Ratio	0.44	0.40	0.20	0.50	0.19	0.02	0.80	0.42	0.06	0.45	0.18	
Uniform Delay, d1	29.8	20.3	0.0	28.4	17.4	0.0	25.6	14.5	0.0	29.5	18.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.5	0.3	0.8	0.2	0.0	12.1	0.4	0.1	0.9	0.1	
Delay (s)	30.8	20.8	0.3	29.2	17.6	0.0	37.7	14.9	0.1	30.4	18.3	
Level of Service	C	C	A	C	B	A	D	B	A	C	B	
Approach Delay (s)		12.6			18.5			19.9			20.3	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	41	31	47	11	38	18	1291	64	47	342	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1791	1583	1770	3514		1770	3528	
Flt Permitted		0.93	1.00		0.73	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1734	1583		1363	1583	1770	3514		1770	3528	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	43	33	49	12	40	19	1359	67	49	360	8
RTOR Reduction (vph)	0	0	28	0	0	34	0	5	0	0	2	0
Lane Group Flow (vph)	0	54	5	0	61	6	19	1421	0	49	366	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		6.7	6.7		6.7	6.7	0.6	35.4		3.3	38.1	
Effective Green, g (s)		8.3	8.3		8.3	8.3	1.6	38.1		4.3	40.8	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.03	0.64		0.07	0.68	
Clearance Time (s)		4.9	4.9		4.9	4.9	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		240	219		189	219	47	2231		127	2399	
v/s Ratio Prot							0.01	c0.40		c0.03	0.10	
v/s Ratio Perm		0.03	0.00		c0.04	0.00						
v/c Ratio		0.23	0.02		0.32	0.03	0.40	0.64		0.39	0.15	
Uniform Delay, d1		23.0	22.3		23.3	22.4	28.7	6.7		26.6	3.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.7	0.0	2.1	0.7		0.7	0.1	
Delay (s)		23.3	22.4		24.0	22.4	30.8	7.4		27.3	3.6	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		23.0			23.4			7.7			6.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

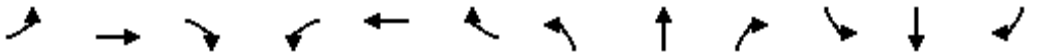


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	4	2	21	1	22	6	1244	31	20	342	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1583		1778	1583	1770	3526		1770	3532	
Flt Permitted		0.88	1.00		0.79	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1634	1583		1471	1583	1770	3526		1770	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	4	2	22	1	23	6	1309	33	21	360	5
RTOR Reduction (vph)	0	0	2	0	0	20	0	1	0	0	1	0
Lane Group Flow (vph)	0	11	0	0	23	3	6	1341	0	21	364	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4		4						
Actuated Green, G (s)		9.9	9.9		9.9	9.9	0.6	64.4		2.0	65.8	
Effective Green, g (s)		10.9	10.9		10.9	10.9	1.6	67.4		3.0	68.8	
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.02	0.75		0.03	0.76	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)		198	192		178	192	31	2641		59	2700	
v/s Ratio Prot							0.00	c0.38		c0.01	0.10	
v/s Ratio Perm		0.01	0.00		c0.02	0.00						
v/c Ratio		0.06	0.00		0.13	0.01	0.19	0.51		0.36	0.13	
Uniform Delay, d1		35.0	34.8		35.3	34.8	43.6	4.6		42.6	2.8	
Progression Factor		1.00	1.00		1.00	1.00	0.75	0.25		1.00	1.00	
Incremental Delay, d2		0.0	0.0		0.1	0.0	1.0	0.2		1.3	0.1	
Delay (s)		35.0	34.8		35.4	34.8	33.6	1.4		43.9	2.9	
Level of Service		D	C		D	C	C	A		D	A	
Approach Delay (s)		35.0			35.1			1.5			5.1	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	3.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

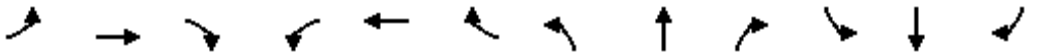
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	28	105	1164	45	34	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3520		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3520		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	111	1225	47	36	347
RTOR Reduction (vph)	0	97	2	0	0	0
Lane Group Flow (vph)	29	14	1270	0	36	347
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	10.1	10.1	62.6		3.6	70.2
Effective Green, g (s)	11.1	11.1	65.6		4.6	73.2
Actuated g/C Ratio	0.12	0.12	0.73		0.05	0.81
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	218	195	2566		90	2878
v/s Ratio Prot	c0.02		c0.36		c0.02	0.10
v/s Ratio Perm		0.01				
v/c Ratio	0.13	0.07	0.49		0.40	0.12
Uniform Delay, d1	35.2	34.9	5.2		41.4	1.7
Progression Factor	1.00	1.00	1.00		1.15	0.81
Incremental Delay, d2	0.1	0.1	0.2		1.1	0.1
Delay (s)	35.3	34.9	5.4		48.5	1.5
Level of Service	D	C	A		D	A
Approach Delay (s)	35.0		5.4			5.9
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



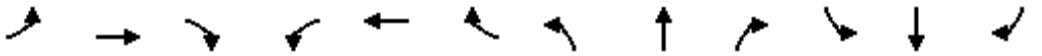
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	0	199	0	1	0	204	694	1	0	506	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5			3.0		3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00	0.98			1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85			1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400	1542			1863		1660	3417	1544		3491	1500
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400	1542			1863		1660	3417	1544		3491	1500
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	136	0	209	0	1	0	215	731	1	0	533	214
RTOR Reduction (vph)	0	160	0	0	0	0	0	0	0	0	0	146
Lane Group Flow (vph)	136	49	0	0	1	0	215	731	1	0	533	68
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	10.4	10.4			1.1		8.6	26.6	26.6		14.0	14.0
Effective Green, g (s)	12.9	12.9			2.1		9.6	30.0	30.0		17.4	17.4
Actuated g/C Ratio	0.24	0.24			0.04		0.18	0.55	0.55		0.32	0.32
Clearance Time (s)	6.0	6.0			4.0		4.0	6.4	6.4		6.4	6.4
Vehicle Extension (s)	4.1	4.1			2.0		2.0	4.3	4.3		4.3	4.3
Lane Grp Cap (vph)	805	365			72		292	1881	850		1115	479
v/s Ratio Prot	c0.04	0.03			c0.00		c0.13	0.21			c0.15	
v/s Ratio Perm									0.00			0.05
v/c Ratio	0.17	0.14			0.01		0.74	0.39	0.00		0.48	0.14
Uniform Delay, d1	16.5	16.4			25.2		21.3	7.0	5.5		14.9	13.2
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.2			0.0		8.1	0.2	0.0		0.5	0.2
Delay (s)	16.7	16.6			25.2		29.3	7.2	5.5		15.4	13.4
Level of Service	B	B			C		C	A	A		B	B
Approach Delay (s)		16.7			25.2			12.2			14.9	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	54.5	Sum of lost time (s)	12.5
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



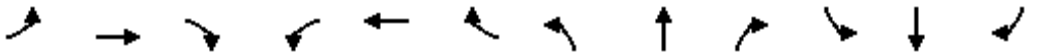
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	0	130	2	0	2	47	847	0	7	676	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4		4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539		1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1770	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	0	137	2	0	2	49	892	0	7	712	16
RTOR Reduction (vph)	0	0	115	0	0	2	0	0	0	0	0	9
Lane Group Flow (vph)	0	60	22	0	2	0	49	892	0	7	712	7
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)		8.1	8.1		2.6	2.6	2.5	26.5		0.7	24.7	24.7
Effective Green, g (s)		8.1	9.1		2.6	2.6	3.5	27.5		0.7	25.7	25.7
Actuated g/C Ratio		0.14	0.16		0.05	0.05	0.06	0.49		0.01	0.46	0.46
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)		255	256		82	73	110	1729		22	1615	723
v/s Ratio Prot		c0.03			c0.00		c0.03	c0.25		0.00	0.20	
v/s Ratio Perm			0.01			0.00						0.00
v/c Ratio		0.24	0.09		0.02	0.00	0.45	0.52		0.32	0.44	0.01
Uniform Delay, d1		21.4	20.1		25.6	25.6	25.5	9.8		27.6	10.4	8.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2	0.1		0.0	0.0	1.0	0.4		3.0	0.3	0.0
Delay (s)		21.5	20.1		25.7	25.6	26.5	10.2		30.6	10.7	8.4
Level of Service		C	C		C	C	C	B		C	B	A
Approach Delay (s)		20.5			25.6			11.1			10.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	11.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



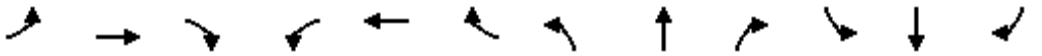
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	1	276	13	1	7	460	828	32	21	673	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1610	3070		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1610	3070		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	1	291	14	1	7	484	872	34	22	708	102
RTOR Reduction (vph)	0	0	237	0	7	0	0	0	15	0	0	74
Lane Group Flow (vph)	40	39	54	8	7	0	484	872	19	22	708	28
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.0	11.0	11.0	2.8	2.8		21.2	36.9	36.9	1.9	17.2	17.2
Effective Green, g (s)	13.7	13.7	13.7	3.8	3.8		22.2	40.3	40.3	2.9	20.6	20.6
Actuated g/C Ratio	0.19	0.19	0.19	0.05	0.05		0.30	0.54	0.54	0.04	0.28	0.28
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	311	312	293	83	158		531	1927	862	69	1416	441
v/s Ratio Prot	0.02	0.02		c0.00	0.00		c0.27	c0.25		0.01	0.14	
v/s Ratio Perm			c0.03						0.01			0.02
v/c Ratio	0.13	0.12	0.18	0.10	0.05		0.91	0.45	0.02	0.32	0.50	0.06
Uniform Delay, d1	25.2	25.2	25.4	33.5	33.4		25.0	10.2	7.8	34.6	22.4	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.5	0.8	0.2		19.6	0.3	0.0	1.0	0.4	0.1
Delay (s)	25.5	25.4	25.9	34.3	33.6		44.6	10.5	7.8	35.6	22.8	19.7
Level of Service	C	C	C	C	C		D	B	A	D	C	B
Approach Delay (s)		25.8			33.8			22.3			22.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	2	131	45	3	23	153	1435	92	74	903	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1688	1583		1779	1583	1770	5039		1770	5013	
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1688	1583		1779	1583	1770	5039		1770	5013	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	139	2	138	47	3	24	161	1511	97	78	951	100
RTOR Reduction (vph)	0	0	122	0	0	22	0	4	0	0	8	0
Lane Group Flow (vph)	71	70	16	0	50	2	161	1604	0	78	1043	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)	13.0	13.0	13.0		10.8	10.8	14.6	71.0		7.5	63.9	
Effective Green, g (s)	14.0	14.0	14.0		11.8	11.8	15.6	74.0		8.5	66.9	
Actuated g/C Ratio	0.12	0.12	0.12		0.10	0.10	0.13	0.62		0.07	0.56	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3		2.0	5.3	
Lane Grp Cap (vph)	196	197	185		175	156	230	3107		125	2795	
v/s Ratio Prot	c0.04	0.04			c0.03		c0.09	c0.32		c0.04	0.21	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.36	0.36	0.09		0.29	0.02	0.70	0.52		0.62	0.37	
Uniform Delay, d1	48.9	48.8	47.3		50.2	48.9	50.0	12.9		54.2	14.8	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4	0.1		0.3	0.0	7.3	0.6		6.8	0.2	
Delay (s)	49.3	49.2	47.4		50.5	48.9	57.3	13.5		61.0	15.0	
Level of Service	D	D	D		D	D	E	B		E	B	
Approach Delay (s)		48.3			50.0			17.5			18.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

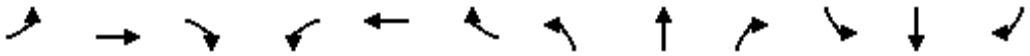


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	347	67	299	49	126	91	121	1691	18	28	1039	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.91	0.91			0.95		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.90			0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3030			3327		3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.73			0.78		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	2246			2610		3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	365	71	315	52	133	96	127	1780	19	29	1094	180
RTOR Reduction (vph)	0	114	0	0	60	0	0	0	8	0	0	97
Lane Group Flow (vph)	263	374	0	0	221	0	127	1780	11	29	1094	83
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	23.2	44.2			17.0		8.0	54.7	54.7	5.4	52.1	52.1
Effective Green, g (s)	24.2	46.9			19.7		9.0	57.7	57.7	6.4	55.1	55.1
Actuated g/C Ratio	0.20	0.39			0.16		0.08	0.48	0.48	0.05	0.46	0.46
Clearance Time (s)	4.0	5.7			5.7		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3			4.3		2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	325	1047			428		257	2445	761	94	2335	727
v/s Ratio Prot	c0.16	0.08					c0.04	c0.35		0.02	0.22	
v/s Ratio Perm		0.06			c0.08				0.01			0.05
v/c Ratio	0.81	0.36			1.33dr		0.49	0.73	0.01	0.31	0.47	0.11
Uniform Delay, d1	45.7	25.9			45.8		53.3	24.9	16.3	54.7	22.4	18.5
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.1	0.3			1.6		0.5	1.9	0.0	0.7	0.3	0.1
Delay (s)	58.7	26.2			47.4		53.9	26.8	16.3	55.4	22.6	18.6
Level of Service	E	C			D		D	C	B	E	C	B
Approach Delay (s)		37.6			47.4			28.5			22.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

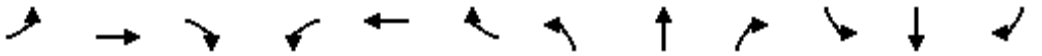
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	206	14	27	358	8	27	3	28	6	2	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.93			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	3505		1770	3528			1701			1705	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (perm)	1770	3505		1770	3528			1701			1705	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	217	15	28	377	8	28	3	29	6	2	8
RTOR Reduction (vph)	0	4	0	0	1	0	0	25	0	0	8	0
Lane Group Flow (vph)	1	228	0	28	384	0	0	35	0	0	8	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.9	22.5		0.8	22.4			6.3			1.0	
Effective Green, g (s)	1.9	25.2		1.8	25.1			7.3			2.0	
Actuated g/C Ratio	0.04	0.52		0.04	0.52			0.15			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	70	1829		66	1833			257			71	
v/s Ratio Prot	0.00	0.07		c0.02	c0.11			c0.02			c0.00	
v/s Ratio Perm												
v/c Ratio	0.01	0.12		0.42	0.21			0.14			0.12	
Uniform Delay, d1	22.3	5.9		22.7	6.3			17.8			22.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.1		1.6	0.1			0.1			0.3	
Delay (s)	22.3	6.0		24.3	6.4			17.9			22.6	
Level of Service	C	A		C	A			B			C	
Approach Delay (s)		6.0			7.6			17.9			22.6	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	227	6	20	489	18	9	2	9	43	0	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1711			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1711			1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	97	239	6	21	515	19	9	2	9	45	0	174
RTOR Reduction (vph)	0	0	3	0	0	12	0	9	0	0	0	135
Lane Group Flow (vph)	97	239	3	21	515	7	0	11	0	0	45	39
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	6.6	25.7	25.7	0.9	20.0	20.0		1.1			11.0	11.0
Effective Green, g (s)	7.6	28.7	28.7	1.9	23.0	23.0		2.1			13.0	13.0
Actuated g/C Ratio	0.13	0.49	0.49	0.03	0.39	0.39		0.04			0.22	0.22
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	230	1739	778	58	1394	623		62			394	352
v/s Ratio Prot	c0.05	0.07		0.01	c0.15			c0.01			c0.03	
v/s Ratio Perm			0.00			0.00						0.02
v/c Ratio	0.42	0.14	0.00	0.36	0.37	0.01		0.18			0.11	0.11
Uniform Delay, d1	23.4	8.1	7.6	27.7	12.6	10.8		27.3			18.1	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.5	0.0	0.0	1.4	0.2	0.0		0.5			0.0	0.1
Delay (s)	23.8	8.1	7.6	29.1	12.7	10.8		27.8			18.2	18.1
Level of Service	C	A	A	C	B	B		C			B	B
Approach Delay (s)		12.6			13.3			27.8			18.1	
Approach LOS		B			B			C			B	

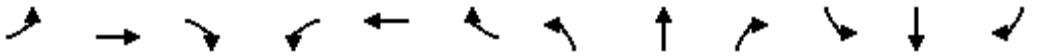
Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	12.7
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	185	12	53	315	6	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	195	13	56	332	6	58
RTOR Reduction (vph)	0	11	0	0	0	44
Lane Group Flow (vph)	195	2	56	332	6	15
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	5.5	5.5	2.3	12.8	7.6	7.6
Effective Green, g (s)	5.5	5.5	2.3	12.8	7.6	7.6
Actuated g/C Ratio	0.18	0.18	0.08	0.42	0.25	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	640	286	134	1490	443	396
v/s Ratio Prot	0.06		0.03	c0.09	0.00	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.30	0.01	0.42	0.22	0.01	0.04
Uniform Delay, d1	10.8	10.2	13.4	5.6	8.6	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	2.1	0.1	0.0	0.0
Delay (s)	11.1	10.2	15.5	5.7	8.6	8.7
Level of Service	B	B	B	A	A	A
Approach Delay (s)	11.0			7.1	8.7	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	30.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

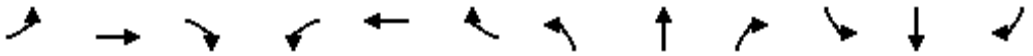
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	324	11	278	995	428	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	341	12	293	1047	451	271
RTOR Reduction (vph)	0	10	0	225	0	0
Lane Group Flow (vph)	341	2	293	822	451	271
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	15.1	15.1	59.0	59.0	30.0	94.0
Effective Green, g (s)	15.1	15.1	59.0	59.0	30.0	94.0
Actuated g/C Ratio	0.13	0.13	0.50	0.50	0.25	0.79
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	435	201	1753	784	446	2793
v/s Ratio Prot	c0.10		0.08		c0.25	0.08
v/s Ratio Perm		0.00		c0.52		
v/c Ratio	0.78	0.01	0.17	1.05	1.01	0.10
Uniform Delay, d1	50.4	45.5	16.5	30.0	44.5	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	0.0	0.0	45.8	45.5	0.0
Delay (s)	59.4	45.5	16.6	75.8	90.0	2.9
Level of Service	E	D	B	E	F	A
Approach Delay (s)	58.9		62.9			57.3
Approach LOS	E		E			E

Intersection Summary			
HCM Average Control Delay	60.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	119.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



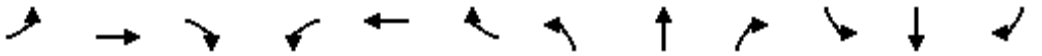
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	431	0	439	0	1664	217	0	806	768
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Lane Util. Factor				0.94		1.00		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				4990		1583		5085	1583		5085	1583
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				4990		1583		5085	1583		5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	454	0	462	0	1752	228	0	848	808
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	96	0	0	341
Lane Group Flow (vph)	0	0	0	454	0	445	0	1752	132	0	848	467
Turn Type				custom		custom			Perm			Perm
Protected Phases								2			6	
Permitted Phases				8		8			2			6
Actuated Green, G (s)				27.7		27.7		52.5	52.5		52.5	52.5
Effective Green, g (s)				27.7		27.7		52.5	52.5		52.5	52.5
Actuated g/C Ratio				0.31		0.31		0.58	0.58		0.58	0.58
Clearance Time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Vehicle Extension (s)				2.0		2.0		3.8	3.8		3.9	3.9
Lane Grp Cap (vph)				1522		483		2940	915		2940	915
v/s Ratio Prot								c0.34			0.17	
v/s Ratio Perm				0.09		c0.28			0.08			0.30
v/c Ratio				0.30		0.92		0.60	0.14		0.29	0.51
Uniform Delay, d1				24.1		30.5		12.3	8.8		9.7	11.5
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.0		22.8		0.4	0.1		0.1	0.6
Delay (s)				24.2		53.3		12.7	8.9		9.8	12.1
Level of Service				C		D		B	A		A	B
Approach Delay (s)		0.0			38.9			12.3			10.9	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	10.6
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



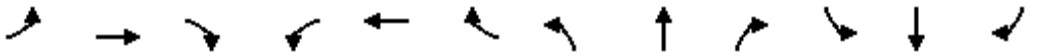
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	365	111	17	0	156	0	1682	62	57	928	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3	4.0		4.0		4.9	4.9	4.0	4.9	
Lane Util. Factor		0.95	1.00	0.97		1.00		0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	3433		1583		3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	3433		1583		3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	384	117	18	0	164	0	1771	65	60	977	0
RTOR Reduction (vph)	0	0	99	0	0	0	0	0	7	0	0	0
Lane Group Flow (vph)	0	384	18	18	0	164	0	1771	58	60	977	0
Turn Type			Perm	Prot		custom			Perm	Prot		
Protected Phases		4		3		3 1		2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		18.5	18.5	12.6		20.2		64.0	64.0	7.6	75.6	
Effective Green, g (s)		18.5	18.5	12.6		20.2		64.0	64.0	7.6	75.6	
Actuated g/C Ratio		0.15	0.15	0.10		0.17		0.53	0.53	0.06	0.63	
Clearance Time (s)		5.3	5.3	4.0				4.9	4.9	4.0	4.9	
Vehicle Extension (s)		2.8	2.8	2.0				3.6	3.6	2.0	3.6	
Lane Grp Cap (vph)		542	242	358		264		1873	838	111	2213	
v/s Ratio Prot		c0.11		0.01		c0.10		c0.50		0.03	0.28	
v/s Ratio Perm			0.01						0.04			
v/c Ratio		0.71	0.07	0.05		0.62		0.95	0.07	0.54	0.44	
Uniform Delay, d1		48.6	43.9	48.8		46.8		26.8	13.9	55.0	11.7	
Progression Factor		1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		4.1	0.1	0.0		3.2		10.7	0.0	2.9	0.2	
Delay (s)		52.7	44.0	48.8		50.0		37.5	13.9	57.8	11.9	
Level of Service		D	D	D		D		D	B	E	B	
Approach Delay (s)		50.7			49.9			36.6			14.6	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM Average Control Delay	32.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.9	Sum of lost time (s)	18.2
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



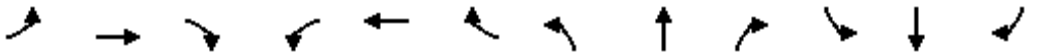
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	561	4	2	175	187	8	64	2	452	14	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1853	1583		1777	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1853	1583		1777	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	591	4	2	184	197	8	67	2	476	15	108
RTOR Reduction (vph)	0	0	3	0	0	150	0	0	2	0	0	38
Lane Group Flow (vph)	69	591	1	2	184	47	0	75	0	0	491	70
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	3.1	13.8	13.8	0.5	11.2	11.2		4.9	4.9		22.3	22.3
Effective Green, g (s)	4.1	16.8	16.8	1.5	14.2	14.2		5.9	5.9		23.3	23.3
Actuated g/C Ratio	0.07	0.28	0.28	0.03	0.24	0.24		0.10	0.10		0.39	0.39
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	122	999	447	45	845	378		184	157		696	620
v/s Ratio Prot	c0.04	c0.17		0.00	0.05			c0.04			c0.28	
v/s Ratio Perm			0.00			0.03			0.00			0.04
v/c Ratio	0.57	0.59	0.00	0.04	0.22	0.12		0.41	0.00		0.71	0.11
Uniform Delay, d1	26.8	18.4	15.3	28.3	18.2	17.8		25.2	24.1		15.2	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.5	1.0	0.0	0.1	0.1	0.2		0.5	0.0		2.7	0.0
Delay (s)	30.4	19.4	15.3	28.4	18.3	17.9		25.7	24.1		17.9	11.6
Level of Service	C	B	B	C	B	B		C	C		B	B
Approach Delay (s)		20.5			18.2			25.7			16.7	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



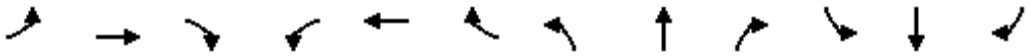
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	1004	13	74	350	52	12	92	92	113	49	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	1057	14	78	368	55	13	97	97	119	52	19
RTOR Reduction (vph)	0	0	9	0	0	32	0	0	80	0	0	14
Lane Group Flow (vph)	47	1057	5	78	368	23	13	97	17	119	52	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.5	29.5	29.5	6.6	31.6	31.6	1.2	13.2	13.2	7.3	19.3	19.3
Effective Green, g (s)	4.5	29.5	29.5	6.6	31.6	31.6	1.2	13.2	13.2	7.3	19.3	19.3
Actuated g/C Ratio	0.06	0.39	0.39	0.09	0.41	0.41	0.02	0.17	0.17	0.10	0.25	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	104	1363	610	153	1460	653	28	321	273	169	469	399
v/s Ratio Prot	0.03	c0.30		c0.04	0.10		0.01	c0.05		c0.07	0.03	
v/s Ratio Perm			0.00			0.01			0.01			0.00
v/c Ratio	0.45	0.78	0.01	0.51	0.25	0.03	0.46	0.30	0.06	0.70	0.11	0.01
Uniform Delay, d1	34.9	20.6	14.5	33.5	14.8	13.4	37.4	27.7	26.5	33.6	22.0	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	2.8	0.0	2.7	0.1	0.0	11.7	0.5	0.1	12.5	0.1	0.0
Delay (s)	38.0	23.5	14.5	36.1	14.8	13.4	49.1	28.2	26.6	46.1	22.2	21.5
Level of Service	D	C	B	D	B	B	D	C	C	D	C	C
Approach Delay (s)		24.0			18.0			28.8			37.1	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



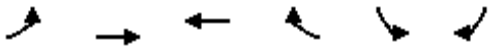
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	597	586	72	43	153	148	46	395	135	131	285	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	628	617	76	45	161	156	48	416	142	138	300	174
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	628	617	76	45	161	156	48	416	142	138	300	174
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	16.3	23.8	68.3	4.4	11.9	68.3	4.3	13.0	68.3	7.4	16.4	68.3
Effective Green, g (s)	17.3	26.8	68.3	5.4	14.9	68.3	5.3	15.7	68.3	8.4	19.1	68.3
Actuated g/C Ratio	0.25	0.39	1.00	0.08	0.22	1.00	0.08	0.23	1.00	0.12	0.28	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	870	1389	1583	271	772	1583	266	814	1583	422	990	1583
v/s Ratio Prot	c0.18	c0.17		0.01	0.05		0.01	c0.12		0.04	c0.08	
v/s Ratio Perm			0.05			0.10			0.09			0.11
v/c Ratio	0.72	0.44	0.05	0.17	0.21	0.10	0.18	0.51	0.09	0.33	0.30	0.11
Uniform Delay, d1	23.3	15.3	0.0	29.3	21.9	0.0	29.5	23.0	0.0	27.4	19.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.4	0.1	0.1	0.2	0.1	0.1	0.8	0.1	0.2	0.3	0.1
Delay (s)	25.8	15.7	0.1	29.5	22.1	0.1	29.6	23.7	0.1	27.5	19.7	0.1
Level of Service	C	B	A	C	C	A	C	C	A	C	B	A
Approach Delay (s)		19.6			13.5			18.6			15.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



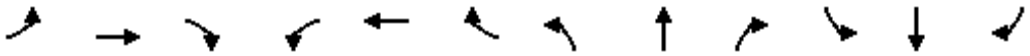
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	117	719	42	150	165	19	72	207	72	182	127	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3510		1770	3484		1770	1791		1770	1751	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3510		1770	3484		1770	1791		1770	1751	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	123	757	44	158	174	20	76	218	76	192	134	89
RTOR Reduction (vph)	0	5	0	0	10	0	0	16	0	0	29	0
Lane Group Flow (vph)	123	796	0	158	184	0	76	278	0	192	194	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.9	22.0		6.1	21.2		6.2	19.2		9.1	22.1	
Effective Green, g (s)	7.9	24.7		7.1	23.9		7.2	21.5		10.1	24.4	
Actuated g/C Ratio	0.11	0.33		0.09	0.32		0.10	0.29		0.13	0.33	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	186	1156		168	1110		170	513		238	570	
v/s Ratio Prot	0.07	c0.23		c0.09	0.05		0.04	c0.16		c0.11	c0.11	
v/s Ratio Perm												
v/c Ratio	0.66	0.69		0.94	0.17		0.45	0.54		0.81	0.34	
Uniform Delay, d1	32.3	21.8		33.7	18.4		32.0	22.6		31.5	19.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.7	1.8		51.6	0.1		0.7	1.4		16.9	0.5	
Delay (s)	38.9	23.7		85.3	18.5		32.7	24.0		48.4	19.7	
Level of Service	D	C		F	B		C	C		D	B	
Approach Delay (s)		25.7			48.5			25.8			33.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



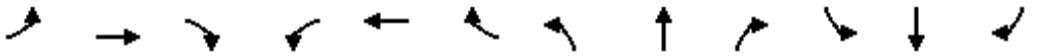
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	8	985	337	16	79	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		2.0	2.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3515		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3515		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	1037	355	17	83	14
RTOR Reduction (vph)	0	0	3	0	0	12
Lane Group Flow (vph)	8	1037	369	0	83	2
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	1.2	32.4	27.2		6.7	6.7
Effective Green, g (s)	2.2	35.1	29.9		7.7	7.7
Actuated g/C Ratio	0.05	0.73	0.63		0.16	0.16
Clearance Time (s)	4.0	5.7	5.7		3.0	3.0
Vehicle Extension (s)	2.0	3.8	3.8		2.0	2.0
Lane Grp Cap (vph)	81	2599	2199		285	255
v/s Ratio Prot	0.00	c0.29	0.10		c0.05	
v/s Ratio Perm						0.00
v/c Ratio	0.10	0.40	0.17		0.29	0.01
Uniform Delay, d1	21.8	2.4	3.7		17.6	16.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.1	0.0		0.2	0.0
Delay (s)	22.0	2.5	3.8		17.9	16.8
Level of Service	C	A	A		B	B
Approach Delay (s)		2.7	3.8		17.7	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	5.0
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1032	50	131	295	0	116	0	118	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7	4.7	2.0	2.7			2.0	2.0			
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00			
Frt		1.00	0.85	1.00	1.00			1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3539	1583	1770	3539			1770	1583			
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (perm)		3539	1583	1770	3539			1770	1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1086	53	138	311	0	122	0	124	0	0	0
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	95	0	0	0
Lane Group Flow (vph)	0	1086	26	138	311	0	0	122	29	0	0	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2						3			
Actuated Green, G (s)		26.1	26.1	5.1	35.2			11.0	11.0			
Effective Green, g (s)		29.1	27.1	7.1	38.2			13.0	13.0			
Actuated g/C Ratio		0.52	0.48	0.13	0.68			0.23	0.23			
Clearance Time (s)		5.7	5.7	4.0	5.7			4.0	4.0			
Vehicle Extension (s)		3.8	3.8	2.0	3.7			2.0	2.0			
Lane Grp Cap (vph)		1842	767	225	2418			412	368			
v/s Ratio Prot		c0.31		c0.08	0.09			c0.07				
v/s Ratio Perm			0.02						0.02			
v/c Ratio		0.59	0.03	0.61	0.13			0.30	0.08			
Uniform Delay, d1		9.3	7.5	23.1	3.1			17.7	16.8			
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.6	0.0	3.5	0.0			0.1	0.0			
Delay (s)		9.8	7.6	26.6	3.1			17.8	16.8			
Level of Service		A	A	C	A			B	B			
Approach Delay (s)		9.7			10.3			17.3			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	6.7
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

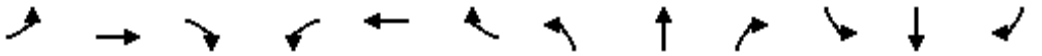


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1015	18	64	395	3	39	9	130	43	15	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3530		1770	3535			1789	1583		1796	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.77	1.00		0.79	1.00
Satd. Flow (perm)	1770	3530		1770	3535			1443	1583		1477	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	1068	19	67	416	3	41	9	137	45	16	16
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	110	0	0	13
Lane Group Flow (vph)	11	1086	0	67	419	0	0	50	27	0	61	3
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	0.9	26.0		2.6	27.7			9.0	9.0		9.0	9.0
Effective Green, g (s)	1.9	28.7		3.6	30.4			10.0	10.0		10.0	10.0
Actuated g/C Ratio	0.04	0.56		0.07	0.59			0.19	0.19		0.19	0.19
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	66	1975		124	2095			281	309		288	309
v/s Ratio Prot	0.01	c0.31		c0.04	0.12							
v/s Ratio Perm								0.03	0.02		c0.04	0.00
v/c Ratio	0.17	0.55		0.54	0.20			0.18	0.09		0.21	0.01
Uniform Delay, d1	23.9	7.2		23.1	4.8			17.2	16.9		17.3	16.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.4		2.6	0.1			0.1	0.0		0.1	0.0
Delay (s)	24.4	7.6		25.6	4.9			17.3	17.0		17.5	16.7
Level of Service	C	A		C	A			B	B		B	B
Approach Delay (s)		7.7			7.7			17.1			17.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	51.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

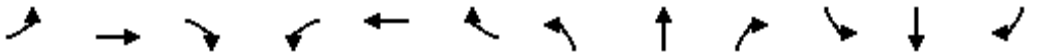
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	189	767	8	15	297	123	9	0	20	71	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.96			0.91		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	3534		1770	3384			1662		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (perm)	1770	3534		1770	3384			1662		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	199	807	8	16	313	129	9	0	21	75	0	35
RTOR Reduction (vph)	0	0	0	0	42	0	0	20	0	0	31	0
Lane Group Flow (vph)	199	815	0	16	400	0	0	10	0	75	4	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	11.5	31.4		0.9	20.8			2.3		6.0	6.0	
Effective Green, g (s)	12.5	34.1		1.9	23.5			3.3		7.0	7.0	
Actuated g/C Ratio	0.21	0.58		0.03	0.40			0.06		0.12	0.12	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	380	2067		58	1364			94		213	190	
v/s Ratio Prot	c0.11	c0.23		0.01	0.12			c0.01		c0.04	0.00	
v/s Ratio Perm												
v/c Ratio	0.52	0.39		0.28	0.29			0.11		0.35	0.02	
Uniform Delay, d1	20.3	6.5		27.5	11.8			26.1		23.6	22.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.2		0.9	0.2			0.4		0.4	0.0	
Delay (s)	20.9	6.7		28.5	11.9			26.5		23.9	22.6	
Level of Service	C	A		C	B			C		C	C	
Approach Delay (s)		9.5			12.5			26.5			23.5	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



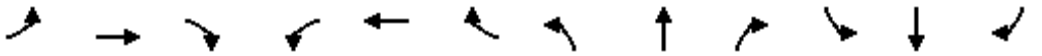
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1	9	99	4	47	22	1046	119	6	872	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	1	9	104	4	49	23	1101	125	6	918	17
RTOR Reduction (vph)	0	0	8	0	0	40	0	0	66	0	0	9
Lane Group Flow (vph)	6	1	1	104	4	9	23	1101	59	6	918	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	3.5	3.5	7.1	10.2	10.2	0.5	27.5	27.5	0.4	27.4	27.4
Effective Green, g (s)	0.4	3.5	3.5	7.1	10.2	10.2	0.5	27.5	27.5	0.4	27.4	27.4
Actuated g/C Ratio	0.01	0.06	0.06	0.12	0.17	0.17	0.01	0.47	0.47	0.01	0.47	0.47
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	12	111	95	215	325	276	15	2390	744	12	2382	741
v/s Ratio Prot	0.00	0.00		c0.06	0.00		c0.01	c0.22		0.00	0.18	
v/s Ratio Perm			0.00			c0.01			0.04			0.01
v/c Ratio	0.50	0.01	0.01	0.48	0.01	0.03	1.53	0.46	0.08	0.50	0.39	0.01
Uniform Delay, d1	29.0	25.9	25.9	24.0	20.0	20.0	29.0	10.5	8.5	29.0	10.1	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.2	0.0	0.0	1.7	0.0	0.0	431.8	0.1	0.0	29.2	0.1	0.0
Delay (s)	58.2	25.9	25.9	25.7	20.0	20.1	460.8	10.6	8.6	58.2	10.2	8.3
Level of Service	E	C	C	C	B	C	F	B	A	E	B	A
Approach Delay (s)		38.0			23.8			18.7			10.5	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



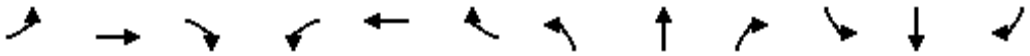
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	32	66	259	7	31	22	1135	125	16	957	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	34	69	273	7	33	23	1195	132	17	1007	7
RTOR Reduction (vph)	0	0	61	0	0	23	0	0	77	0	0	4
Lane Group Flow (vph)	23	34	8	273	7	10	23	1195	55	17	1007	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.3	8.6	8.6	15.1	22.4	22.4	1.3	27.1	27.1	0.5	26.3	26.3
Effective Green, g (s)	1.3	8.6	8.6	15.1	22.4	22.4	1.3	27.1	27.1	0.5	26.3	26.3
Actuated g/C Ratio	0.02	0.12	0.12	0.21	0.31	0.31	0.02	0.38	0.38	0.01	0.37	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	32	225	191	375	585	497	32	1933	602	12	1876	584
v/s Ratio Prot	0.01	c0.02		c0.15	0.00		c0.01	c0.23		0.01	0.20	
v/s Ratio Perm			0.01			0.01			0.03			0.00
v/c Ratio	0.72	0.15	0.04	0.73	0.01	0.02	0.72	0.62	0.09	1.42	0.54	0.00
Uniform Delay, d1	34.8	28.1	27.7	26.2	16.8	16.9	34.8	17.9	14.2	35.4	17.7	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	55.4	0.3	0.1	6.9	0.0	0.0	55.4	0.6	0.1	416.9	0.3	0.0
Delay (s)	90.2	28.4	27.8	33.1	16.8	16.9	90.2	18.5	14.3	452.3	18.0	14.2
Level of Service	F	C	C	C	B	B	F	B	B	F	B	B
Approach Delay (s)		39.4			31.0			19.3			25.1	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	9	100	113	4	15	28	1186	38	49	1281	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	9	105	119	4	16	29	1248	40	52	1348	16
RTOR Reduction (vph)	0	0	92	0	0	14	0	0	23	0	0	9
Lane Group Flow (vph)	59	9	13	119	4	2	29	1248	17	52	1348	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.2	8.1	8.1	6.7	8.6	8.6	1.3	29.2	29.2	3.7	31.6	31.6
Effective Green, g (s)	6.2	8.1	8.1	6.7	8.6	8.6	1.3	29.2	29.2	3.7	31.6	31.6
Actuated g/C Ratio	0.09	0.12	0.12	0.10	0.13	0.13	0.02	0.43	0.43	0.05	0.46	0.46
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	161	222	189	174	236	200	34	2184	680	96	2363	736
v/s Ratio Prot	0.03	0.00		c0.07	0.00		0.02	0.25		c0.03	c0.27	
v/s Ratio Perm			c0.01			0.00			0.01			0.00
v/c Ratio	0.37	0.04	0.07	0.68	0.02	0.01	0.85	0.57	0.03	0.54	0.57	0.01
Uniform Delay, d1	29.1	26.5	26.6	29.6	26.0	26.0	33.3	14.7	11.2	31.3	13.3	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1	0.1	10.6	0.0	0.0	95.5	0.4	0.0	6.1	0.3	0.0
Delay (s)	30.5	26.6	26.7	40.2	26.0	26.0	128.8	15.0	11.2	37.4	13.6	9.8
Level of Service	C	C	C	D	C	C	F	B	B	D	B	A
Approach Delay (s)		28.0			38.2			17.4			14.4	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	37	21	20	54	6	18	54	19	8	100	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1549	1770	1832		1770	1780		1770	1733	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1549	1770	1832		1770	1780		1770	1733	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	39	22	21	57	6	19	57	20	8	105	73
RTOR Reduction (vph)	0	0	19	0	5	0	0	14	0	0	30	0
Lane Group Flow (vph)	59	39	3	21	58	0	19	63	0	8	148	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	2.2	5.2	5.2	0.7	3.7		0.6	10.3		0.6	10.3	
Effective Green, g (s)	2.2	5.2	5.2	0.7	3.7		0.6	10.3		0.6	10.3	
Actuated g/C Ratio	0.06	0.15	0.15	0.02	0.11		0.02	0.30		0.02	0.30	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	112	278	231	36	195		31	527		31	513	
v/s Ratio Prot	c0.03	0.02		0.01	c0.03		c0.01	0.04		0.00	c0.09	
v/s Ratio Perm			0.00									
v/c Ratio	0.53	0.14	0.01	0.58	0.30		0.61	0.12		0.26	0.29	
Uniform Delay, d1	15.8	12.9	12.6	16.9	14.3		17.0	8.9		16.9	9.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	0.2	0.0	21.8	0.8		30.9	0.1		4.4	0.3	
Delay (s)	20.2	13.1	12.6	38.7	15.2		47.9	9.0		21.3	9.7	
Level of Service	C	B	B	D	B		D	A		C	A	
Approach Delay (s)		16.5			21.1			16.7			10.2	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	34.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	32.8%	ICU Level of Service	A
Analysis Period (min)	15		

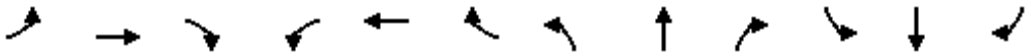
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	26	465	651	21	73	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	489	685	22	77	344
RTOR Reduction (vph)	0	235	0	12	0	0
Lane Group Flow (vph)	27	254	685	10	77	344
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	13.7	13.7	27.4	27.4	4.3	36.7
Effective Green, g (s)	13.7	13.7	27.4	27.4	4.3	36.7
Actuated g/C Ratio	0.23	0.23	0.45	0.45	0.07	0.61
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	401	359	845	718	126	1132
v/s Ratio Prot	0.02		c0.37		c0.04	0.18
v/s Ratio Perm		c0.16		0.01		
v/c Ratio	0.07	0.71	0.81	0.01	0.61	0.30
Uniform Delay, d1	18.3	21.5	14.3	9.1	27.2	5.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	6.2	5.9	0.0	8.5	0.2
Delay (s)	18.4	27.8	20.2	9.1	35.7	5.9
Level of Service	B	C	C	A	D	A
Approach Delay (s)	27.3		19.8			11.3
Approach LOS	C		B			B

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	60.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	2	590	17	4	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.43	1.00
Satd. Flow (perm)	1770	1583	1863	1583	796	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	2	621	18	4	546
RTOR Reduction (vph)	0	2	0	8	0	0
Lane Group Flow (vph)	5	0	621	10	4	546
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	0.6	0.6	13.0	13.0	13.0	13.0
Effective Green, g (s)	0.6	0.6	13.0	13.0	13.0	13.0
Actuated g/C Ratio	0.03	0.03	0.58	0.58	0.58	0.58
Clearance Time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	42	1072	911	458	1072
v/s Ratio Prot	c0.00		c0.33			0.29
v/s Ratio Perm		0.00		0.01	0.01	
v/c Ratio	0.11	0.00	0.58	0.01	0.01	0.51
Uniform Delay, d1	10.7	10.7	3.1	2.1	2.0	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0	0.8	0.0	0.0	0.4
Delay (s)	11.7	10.7	3.8	2.1	2.1	3.3
Level of Service	B	B	A	A	A	A
Approach Delay (s)	11.4		3.8			3.3
Approach LOS	B		A			A

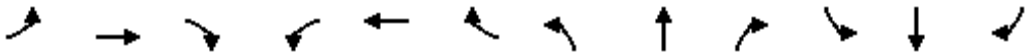
Intersection Summary			
HCM Average Control Delay	3.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	22.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	476	15	39	212	0	13	0	7	12	3	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.98	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.91	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1549	1770	3539		1770	1563		1770	1675	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3539	1549	1770	3539		1770	1563		1770	1675	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	501	16	41	223	0	14	0	7	13	3	5
RTOR Reduction (vph)	0	0	10	0	0	0	0	7	0	0	5	0
Lane Group Flow (vph)	0	501	6	41	223	0	14	0	0	13	3	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		11.9	11.9	0.6	16.5		0.4	1.9		0.4	1.9	
Effective Green, g (s)		11.9	11.9	0.6	16.5		0.4	1.9		0.4	1.9	
Actuated g/C Ratio		0.39	0.39	0.02	0.54		0.01	0.06		0.01	0.06	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1367	598	34	1896		23	96		23	103	
v/s Ratio Prot		c0.14		c0.02	0.06		c0.01	0.00		0.01	c0.00	
v/s Ratio Perm			0.00									
v/c Ratio		0.37	0.01	1.21	0.12		0.61	0.00		0.57	0.03	
Uniform Delay, d1		6.8	5.8	15.1	3.5		15.1	13.6		15.1	13.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0	222.0	0.0		38.0	0.0		28.1	0.1	
Delay (s)		6.9	5.8	237.1	3.6		53.2	13.6		43.2	13.7	
Level of Service		A	A	F	A		D	B		D	B	
Approach Delay (s)		6.9			39.8			40.0			32.0	
Approach LOS		A			D			D			C	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	30.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

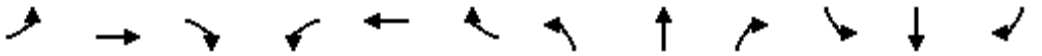
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	212	0	11	804	10	0	0	3	2	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.86		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1770	3531			1590		1770	1562	
Flt Permitted	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539		1770	3531			1590		1770	1562	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	223	0	12	846	11	0	0	3	2	0	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	11	0
Lane Group Flow (vph)	20	223	0	12	857	0	0	0	0	2	0	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Perm			Split		
Protected Phases	7	4		3	8			2		6	6	
Permitted Phases							2					
Actuated Green, G (s)	0.3	22.3		0.3	22.3			1.7		1.7	1.7	
Effective Green, g (s)	0.3	22.3		0.3	22.3			1.7		1.7	1.7	
Actuated g/C Ratio	0.01	0.53		0.01	0.53			0.04		0.04	0.04	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	13	1879		13	1875			64		72	63	
v/s Ratio Prot	c0.01	0.06		0.01	c0.24			c0.00		c0.00	0.00	
v/s Ratio Perm												
v/c Ratio	1.54	0.12		0.92	0.46			0.00		0.03	0.01	
Uniform Delay, d1	20.9	4.9		20.8	6.1			19.3		19.4	19.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	453.6	0.0		207.3	0.2			0.0		0.2	0.0	
Delay (s)	474.5	5.0		228.1	6.3			19.3		19.5	19.4	
Level of Service	F	A		F	A			B		B	B	
Approach Delay (s)		43.6			9.3			19.3			19.4	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

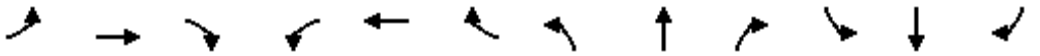
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	5	44	45	7	69	65	110	16	16	72	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1549	1770	1863	1549	1770	1863	1549	1770	1863	1549
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1549	1770	1863	1549	1770	1863	1549	1770	1863	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	82	5	46	47	7	73	68	116	17	17	76	112
RTOR Reduction (vph)	0	0	38	0	0	62	0	0	12	0	0	82
Lane Group Flow (vph)	82	5	8	47	7	11	68	116	5	17	76	30
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.4	6.1	6.1	1.4	5.1	5.1	1.9	11.0	11.0	0.4	9.5	9.5
Effective Green, g (s)	2.4	6.1	6.1	1.4	5.1	5.1	1.9	11.0	11.0	0.4	9.5	9.5
Actuated g/C Ratio	0.07	0.17	0.17	0.04	0.15	0.15	0.05	0.32	0.32	0.01	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	326	271	71	272	226	96	587	488	20	507	422
v/s Ratio Prot	c0.05	0.00		0.03	0.00		c0.04	c0.06		0.01	0.04	
v/s Ratio Perm			0.01			c0.01			0.00			0.02
v/c Ratio	0.67	0.02	0.03	0.66	0.03	0.05	0.71	0.20	0.01	0.85	0.15	0.07
Uniform Delay, d1	15.9	11.9	11.9	16.5	12.8	12.8	16.2	8.7	8.2	17.2	9.6	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.6	0.0	0.0	20.8	0.0	0.1	21.2	0.2	0.0	129.8	0.1	0.1
Delay (s)	29.5	11.9	12.0	37.3	12.8	12.9	37.4	8.9	8.2	147.0	9.8	9.5
Level of Service	C	B	B	D	B	B	D	A	A	F	A	A
Approach Delay (s)		22.8			21.9			18.5			21.0	
Approach LOS		C			C			B			C	

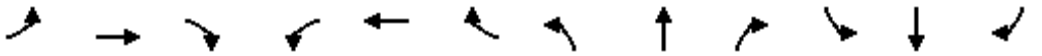
Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	34.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



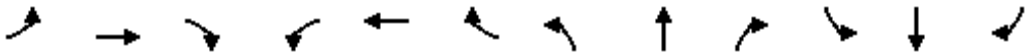
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	63	29	140	24	17	53	723	273	28	218	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0		3.0	4.3	4.3	3.0	3.2	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1857	1583		1770		1770	1863	1583	1770	3530	
Flt Permitted		1.00	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1857	1583		1770		1770	1863	1583	1770	3530	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	66	31	147	25	18	56	761	287	29	229	4
RTOR Reduction (vph)	0	0	28	0	5	0	0	0	136	0	1	0
Lane Group Flow (vph)	0	70	3	0	185	0	56	761	151	29	232	0
Turn Type	Split		Perm	Split			Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			
Actuated Green, G (s)		6.4	6.4		15.2		3.4	37.0	37.0	2.0	36.7	
Effective Green, g (s)		7.4	7.4		16.2		4.4	38.0	38.0	3.0	37.7	
Actuated g/C Ratio		0.09	0.09		0.21		0.06	0.49	0.49	0.04	0.48	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.3	5.3	4.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		176	150		368		100	909	772	68	1708	
v/s Ratio Prot		c0.04			c0.10		c0.03	c0.41		0.02	0.07	
v/s Ratio Perm			0.00						0.10			
v/c Ratio		0.40	0.02		0.50		0.56	0.84	0.20	0.43	0.14	
Uniform Delay, d1		33.2	32.0		27.3		35.8	17.3	11.3	36.6	11.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.0		0.4		4.2	6.5	0.0	1.6	0.0	
Delay (s)		33.7	32.0		27.7		40.0	23.8	11.3	38.2	11.1	
Level of Service		C	C		C		D	C	B	D	B	
Approach Delay (s)		33.2			27.7			21.4			14.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



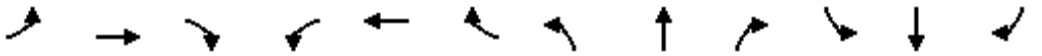
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	301	298	1	46	71	3	0	360	317	0	192	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	0.95	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1681	1761		1770	3519			1863	1583		1863	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1681	1761		1770	3519			1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	317	314	1	48	75	3	0	379	334	0	202	259
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	243	0	0	0
Lane Group Flow (vph)	285	347	0	48	75	0	0	379	91	0	202	259
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	16.8	16.8		5.9	5.9			17.8	17.8		9.8	68.9
Effective Green, g (s)	17.8	17.8		6.9	6.9			18.8	18.8		10.8	68.9
Actuated g/C Ratio	0.26	0.26		0.10	0.10			0.27	0.27		0.16	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			5.0	5.0		5.0	
Lane Grp Cap (vph)	434	455		177	352			508	432		292	1583
v/s Ratio Prot	0.17	c0.20		c0.03	0.02			c0.20			c0.11	
v/s Ratio Perm									0.06			0.16
v/c Ratio	0.66	0.76		0.27	0.21			0.75	0.21		0.69	0.16
Uniform Delay, d1	22.8	23.6		28.7	28.5			22.9	19.3		27.5	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	3.2	7.1		0.6	0.2			7.1	0.5		8.7	0.2
Delay (s)	26.0	30.7		29.3	28.7			29.9	19.8		36.2	0.2
Level of Service	C	C		C	C			C	B		D	A
Approach Delay (s)		28.6			28.9			25.2			16.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	14.6
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



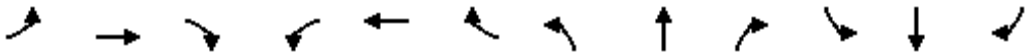
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	443	194	38	297	33	146	12	37	3	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00		0.99			0.96	1.00		0.99	
Satd. Flow (prot)		1860	1583		1831			1781	1583		1785	
Flt Permitted		0.99	1.00		0.94			0.72	1.00		0.97	
Satd. Flow (perm)		1842	1583		1721			1348	1583		1733	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	466	204	40	313	35	154	13	39	3	16	7
RTOR Reduction (vph)	0	0	81	0	5	0	0	0	29	0	5	0
Lane Group Flow (vph)	0	479	123	0	383	0	0	167	10	0	21	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		21.3	21.3		21.3			8.5	8.5		8.5	
Effective Green, g (s)		22.3	22.3		22.3			9.5	9.5		9.5	
Actuated g/C Ratio		0.59	0.59		0.59			0.25	0.25		0.25	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1081	929		1010			337	396		433	
v/s Ratio Prot												
v/s Ratio Perm		c0.26	0.08		0.22			c0.12	0.01		0.01	
v/c Ratio		0.44	0.13		0.38			0.50	0.02		0.05	
Uniform Delay, d1		4.4	3.5		4.2			12.2	10.8		10.8	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.2	0.1		0.2			0.4	0.0		0.0	
Delay (s)		4.6	3.6		4.4			12.6	10.8		10.8	
Level of Service		A	A		A			B	B		B	
Approach Delay (s)		4.3			4.4			12.3			10.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	38.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



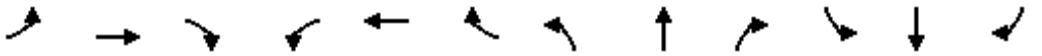
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	552	13	34	416	115	14	40	45	39	27	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.2		3.2	3.2		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.97		1.00	0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	1856		1770	1802		1770	1715			1809	1583
Flt Permitted	0.40	1.00		0.38	1.00		0.71	1.00			0.79	1.00
Satd. Flow (perm)	745	1856		701	1802		1326	1715			1478	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	101	581	14	36	438	121	15	42	47	41	28	28
RTOR Reduction (vph)	0	1	0	0	14	0	0	38	0	0	0	23
Lane Group Flow (vph)	101	594	0	36	545	0	15	51	0	0	69	5
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		4
Actuated Green, G (s)	23.4	23.4		23.4	23.4		6.4	6.4			6.4	6.4
Effective Green, g (s)	24.4	24.4		24.4	24.4		7.4	7.4			7.4	7.4
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.19	0.19			0.19	0.19
Clearance Time (s)	4.2	4.2		4.2	4.2		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	478	1192		450	1157		258	334			288	308
v/s Ratio Prot		c0.32			0.30			0.03				
v/s Ratio Perm	0.14			0.05			0.01				c0.05	0.00
v/c Ratio	0.21	0.50		0.08	0.47		0.06	0.15			0.24	0.02
Uniform Delay, d1	2.8	3.6		2.6	3.5		12.5	12.7			12.9	12.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.2	0.2		0.1	0.2		0.0	0.1			0.2	0.0
Delay (s)	3.0	3.8		2.6	3.7		12.5	12.8			13.1	12.4
Level of Service	A	A		A	A		B	B			B	B
Approach Delay (s)		3.7			3.6			12.7			12.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	38.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



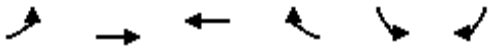
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	344	27	180	335	8	44	56	459	12	22	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0	3.0		3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.99	
Satd. Flow (prot)	1770	1843		1770	1857			1823	1583		1739	
Flt Permitted	0.95	1.00		0.95	1.00			0.86	1.00		0.93	
Satd. Flow (perm)	1770	1843		1770	1857			1599	1583		1642	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	362	28	189	353	8	46	59	483	13	23	26
RTOR Reduction (vph)	0	5	0	0	2	0	0	0	367	0	20	0
Lane Group Flow (vph)	78	385	0	189	359	0	0	105	116	0	42	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		
Actuated Green, G (s)	2.6	14.5		5.8	17.7			8.0	8.0		8.0	
Effective Green, g (s)	3.6	15.5		6.8	18.7			9.0	9.0		9.0	
Actuated g/C Ratio	0.09	0.38		0.17	0.46			0.22	0.22		0.22	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0	4.0		4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)	157	705		297	857			355	352		365	
v/s Ratio Prot	0.04	c0.21		c0.11	0.19							
v/s Ratio Perm								0.07	c0.07		0.03	
v/c Ratio	0.50	0.55		0.64	0.42			0.30	0.33		0.11	
Uniform Delay, d1	17.6	9.8		15.7	7.3			13.1	13.2		12.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.9	0.7		3.3	0.3			0.2	0.2		0.1	
Delay (s)	18.5	10.5		19.0	7.5			13.3	13.4		12.6	
Level of Service	B	B		B	A			B	B		B	
Approach Delay (s)		11.8			11.5			13.4			12.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	40.5	Sum of lost time (s)	9.2
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	86	398	91	63	4	247	742	20	29	868	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.6	3.9	3.0	1.6	2.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	91	419	96	66	4	260	781	21	31	914	31
RTOR Reduction (vph)	0	0	338	0	0	3	0	0	12	0	0	19
Lane Group Flow (vph)	95	91	81	96	66	1	260	781	9	31	914	12
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	15.3	15.3	15.3	10.4	10.4	10.4	11.4	36.5	36.5	5.4	32.5	32.5
Effective Green, g (s)	16.3	16.3	16.3	11.4	11.4	11.4	12.4	38.8	37.5	6.4	34.8	33.5
Actuated g/C Ratio	0.19	0.19	0.19	0.13	0.13	0.13	0.15	0.46	0.44	0.08	0.41	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.9	4.9	4.0	3.9	3.9
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	341	359	305	239	251	214	504	1625	703	134	1457	628
v/s Ratio Prot	c0.05	0.05		c0.05	0.04		c0.08	0.22		0.02	c0.26	
v/s Ratio Perm			0.05			0.00			0.01			0.01
v/c Ratio	0.28	0.25	0.26	0.40	0.26	0.00	0.52	0.48	0.01	0.23	0.63	0.02
Uniform Delay, d1	29.1	28.9	29.0	33.4	32.8	31.6	33.3	15.9	13.1	36.7	19.7	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.2	0.4	0.2	0.0	0.4	0.3	0.0	0.3	1.0	0.0
Delay (s)	29.2	29.1	29.2	33.8	33.0	31.6	33.7	16.2	13.2	37.1	20.7	15.5
Level of Service	C	C	C	C	C	C	C	B	B	D	C	B
Approach Delay (s)		29.2			33.4			20.4			21.0	
Approach LOS		C			C			C			C	

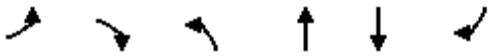
Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	9.6
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	359	390	305	202	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.97	
Frpb, ped/bikes		1.00	1.00	0.98	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	
Frt		1.00	1.00	0.85	1.00	
Flt Protected		1.00	1.00	1.00	0.95	
Satd. Flow (prot)		3539	1863	1547	3440	
Flt Permitted		1.00	1.00	1.00	0.95	
Satd. Flow (perm)		3539	1863	1547	3440	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	378	411	321	213	1
RTOR Reduction (vph)	0	0	0	165	1	0
Lane Group Flow (vph)	0	378	411	156	213	0
Confl. Peds. (#/hr)				4		4
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)		14.4	14.4	14.4	7.2	
Effective Green, g (s)		14.4	14.4	14.4	7.2	
Actuated g/C Ratio		0.49	0.49	0.49	0.24	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1722	906	753	837	
v/s Ratio Prot		0.11	c0.22		c0.06	
v/s Ratio Perm				0.10		
v/c Ratio		0.22	0.45	0.21	0.25	
Uniform Delay, d1		4.4	5.0	4.3	9.0	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.4	0.1	0.2	
Delay (s)		4.4	5.4	4.5	9.2	
Level of Service		A	A	A	A	
Approach Delay (s)		4.4	5.0		9.2	
Approach LOS		A	A		A	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	29.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		

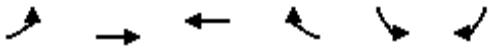
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	440	650	330	22	1	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.96	1.00	1.00
Satd. Flow (prot)	1770	1546	1681	1695	1863	1561
Flt Permitted	0.95	1.00	0.95	0.58	1.00	1.00
Satd. Flow (perm)	1770	1546	1681	1028	1863	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	463	684	347	23	1	22
RTOR Reduction (vph)	0	408	0	0	0	20
Lane Group Flow (vph)	463	276	184	186	1	2
Confl. Peds. (#/hr)		2				2
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	21.6	21.6	14.1	23.9	5.8	5.8
Effective Green, g (s)	21.6	21.6	14.1	23.9	5.8	5.8
Actuated g/C Ratio	0.40	0.40	0.26	0.45	0.11	0.11
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	715	624	443	635	202	169
v/s Ratio Prot			c0.11	0.08	0.00	
v/s Ratio Perm	c0.26	0.18		c0.05		0.00
v/c Ratio	0.65	0.44	0.42	0.29	0.00	0.01
Uniform Delay, d1	12.9	11.6	16.3	9.4	21.3	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.5	0.6	0.3	0.0	0.0
Delay (s)	14.9	12.1	16.9	9.7	21.3	21.3
Level of Service	B	B	B	A	C	C
Approach Delay (s)	13.2			13.3	21.3	
Approach LOS	B			B	C	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

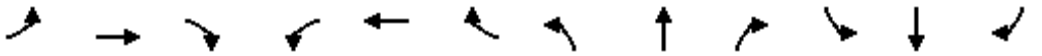
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	61	207	462	98	37	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1548	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	218	486	103	39	26
RTOR Reduction (vph)	0	0	0	79	0	14
Lane Group Flow (vph)	64	218	486	24	39	12
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.2	18.5	11.3	11.3	22.8	22.8
Effective Green, g (s)	3.2	18.5	11.3	11.3	22.8	22.8
Actuated g/C Ratio	0.06	0.38	0.23	0.23	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	115	1908	1166	355	819	722
v/s Ratio Prot	c0.04	0.04	c0.10		c0.02	
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.56	0.11	0.42	0.07	0.05	0.02
Uniform Delay, d1	22.4	10.1	16.2	14.9	7.3	7.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	0.0	0.2	0.1	0.1	0.0
Delay (s)	28.1	10.1	16.4	15.0	7.4	7.2
Level of Service	C	B	B	B	A	A
Approach Delay (s)		14.2	16.2		7.3	
Approach LOS		B	B		A	

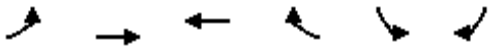
Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	166	25	795	439	263	69	711	310	135	724	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.91	0.88	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	175	26	837	462	277	73	748	326	142	762	80
RTOR Reduction (vph)	0	0	22	0	0	168	0	0	240	0	0	57
Lane Group Flow (vph)	63	175	4	837	462	109	73	748	86	142	762	23
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	12.3	12.3	26.4	32.7	32.7	6.1	22.6	22.6	8.2	24.7	24.7
Effective Green, g (s)	6.0	12.3	12.3	26.4	32.7	32.7	6.1	22.6	22.6	8.2	24.7	24.7
Actuated g/C Ratio	0.07	0.14	0.14	0.31	0.38	0.38	0.07	0.26	0.26	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	124	732	228	1060	1945	605	126	1344	737	170	1469	457
v/s Ratio Prot	0.04	0.03		c0.24	c0.09		0.04	0.15		c0.08	c0.15	
v/s Ratio Perm			0.00			0.07			0.03			0.01
v/c Ratio	0.51	0.24	0.02	0.79	0.24	0.18	0.58	0.56	0.12	0.84	0.52	0.05
Uniform Delay, d1	38.3	32.5	31.4	27.0	17.9	17.5	38.5	27.1	23.9	38.0	25.4	21.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.2	0.0	4.0	0.1	0.1	6.3	0.5	0.1	28.3	0.3	0.0
Delay (s)	41.6	32.6	31.4	31.0	18.0	17.7	44.8	27.6	23.9	66.3	25.7	22.0
Level of Service	D	C	C	C	B	B	D	C	C	E	C	C
Approach Delay (s)		34.6			24.8			27.7			31.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	85.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	25	599	1304	25	124	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1547	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1547	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	631	1373	26	131	89
RTOR Reduction (vph)	0	0	0	16	0	55
Lane Group Flow (vph)	26	631	1373	10	131	34
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.4	26.5	21.1	21.1	21.3	21.3
Effective Green, g (s)	1.4	26.5	21.1	21.1	21.3	21.3
Actuated g/C Ratio	0.03	0.47	0.38	0.38	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	44	2415	1923	585	676	596
v/s Ratio Prot	c0.01	0.12	c0.27		c0.07	
v/s Ratio Perm				0.01		0.02
v/c Ratio	0.59	0.26	0.71	0.02	0.19	0.06
Uniform Delay, d1	26.9	8.8	14.8	10.9	11.5	10.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.5	0.1	1.3	0.0	0.6	0.2
Delay (s)	46.4	8.8	16.1	10.9	12.2	11.1
Level of Service	D	A	B	B	B	B
Approach Delay (s)		10.3	16.0		11.7	
Approach LOS		B	B		B	

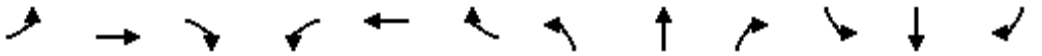
Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	715	8	19	1341	10	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1547	1770	5085	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1547	1770	5085	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	753	8	20	1412	11	1
RTOR Reduction (vph)	0	5	0	0	0	1
Lane Group Flow (vph)	753	3	20	1412	11	0
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	22.6	22.6	0.7	27.3	22.2	22.2
Effective Green, g (s)	22.6	22.6	0.7	27.3	22.2	22.2
Actuated g/C Ratio	0.39	0.39	0.01	0.47	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1999	608	22	2414	683	603
v/s Ratio Prot	0.15		0.01	c0.28	c0.01	
v/s Ratio Perm		0.00				0.00
v/c Ratio	0.38	0.01	0.91	0.58	0.02	0.00
Uniform Delay, d1	12.4	10.6	28.4	11.0	10.9	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	148.5	0.4	0.0	0.0
Delay (s)	12.6	10.6	176.8	11.3	10.9	10.8
Level of Service	B	B	F	B	B	B
Approach Delay (s)	12.5			13.7	10.9	
Approach LOS	B			B	B	

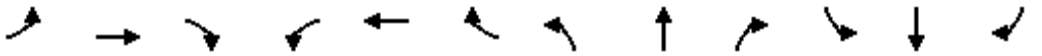
Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	549	52	130	1246	286	44	66	74	112	75	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	133	578	55	137	1312	301	46	69	78	118	79	80
RTOR Reduction (vph)	0	0	35	0	0	186	0	0	64	0	0	63
Lane Group Flow (vph)	133	578	20	137	1312	115	46	69	14	118	79	17
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.1	28.9	28.9	10.5	30.3	30.3	4.0	14.0	14.0	7.1	17.1	17.1
Effective Green, g (s)	9.1	28.9	28.9	10.5	30.3	30.3	4.0	14.0	14.0	7.1	17.1	17.1
Actuated g/C Ratio	0.11	0.36	0.36	0.13	0.38	0.38	0.05	0.17	0.17	0.09	0.21	0.21
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	200	1826	568	231	1914	596	88	324	275	156	396	336
v/s Ratio Prot	0.08	0.11		c0.08	c0.26		0.03	0.04		c0.07	c0.04	
v/s Ratio Perm			0.01			0.07			0.01			0.01
v/c Ratio	0.67	0.32	0.03	0.59	0.69	0.19	0.52	0.21	0.05	0.76	0.20	0.05
Uniform Delay, d1	34.2	18.7	16.7	33.0	21.1	16.9	37.3	28.5	27.7	35.9	26.1	25.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	0.1	0.0	4.0	1.0	0.2	5.5	0.3	0.1	18.7	0.2	0.1
Delay (s)	42.3	18.8	16.8	37.0	22.1	17.0	42.8	28.9	27.8	54.5	26.3	25.3
Level of Service	D	B	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		22.7			22.4			31.7			38.0	
Approach LOS		C			C			C			D	

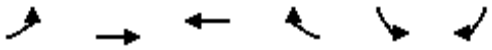
Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	141	538	34	530	1383	243	75	961	344	115	1050	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1552	3433	5085	1553	3433	3539	1557	3433	3539	1557
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1552	3433	5085	1553	3433	3539	1557	3433	3539	1557
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	148	566	36	558	1456	256	79	1012	362	121	1105	153
RTOR Reduction (vph)	0	0	30	0	0	161	0	0	233	0	0	88
Lane Group Flow (vph)	148	566	6	558	1456	95	79	1012	129	121	1105	65
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.6	17.8	17.8	25.8	34.0	34.0	7.2	33.9	33.9	9.0	35.7	35.7
Effective Green, g (s)	10.6	20.8	18.8	26.8	37.0	35.0	8.2	37.3	34.9	10.0	39.1	36.7
Actuated g/C Ratio	0.10	0.20	0.18	0.25	0.35	0.33	0.08	0.35	0.33	0.09	0.37	0.34
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	342	993	274	864	1767	510	264	1239	510	322	1299	537
v/s Ratio Prot	0.04	0.11		c0.16	c0.29		0.02	c0.29		0.04	c0.31	
v/s Ratio Perm			0.00			0.06			0.08			0.04
v/c Ratio	0.43	0.57	0.02	0.65	0.82	0.19	0.30	0.82	0.25	0.38	0.85	0.12
Uniform Delay, d1	45.1	38.8	36.3	35.6	31.8	25.6	46.4	31.5	26.2	45.3	31.0	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.0	0.0	1.3	3.5	0.3	0.2	4.8	0.5	0.3	6.0	0.2
Delay (s)	45.4	39.8	36.3	36.9	35.2	25.8	46.7	36.3	26.7	45.6	37.0	24.1
Level of Service	D	D	D	D	D	C	D	D	C	D	D	C
Approach Delay (s)		40.7			34.6			34.5			36.4	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	35.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	106.5	Sum of lost time (s)	5.6
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

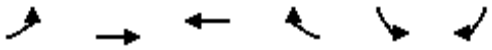


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	5	988	2121	260	141	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1040	2233	274	148	4
RTOR Reduction (vph)	0	0	0	92	0	3
Lane Group Flow (vph)	5	1040	2233	182	148	1
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.0	49.1	44.1	44.1	13.8	13.8
Effective Green, g (s)	2.0	52.1	47.1	47.1	14.8	14.8
Actuated g/C Ratio	0.03	0.71	0.65	0.65	0.20	0.20
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	49	3634	3285	1023	359	321
v/s Ratio Prot	0.00	c0.20	c0.44		c0.08	
v/s Ratio Perm				0.11		0.00
v/c Ratio	0.10	0.29	0.68	0.18	0.41	0.00
Uniform Delay, d1	34.6	3.7	8.1	5.2	25.3	23.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.6	0.1	0.3	0.0
Delay (s)	34.9	3.8	8.8	5.3	25.5	23.2
Level of Service	C	A	A	A	C	C
Approach Delay (s)		3.9	8.4		25.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1146	18	219	2381	16	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1206	19	231	2506	17	140
RTOR Reduction (vph)	0	10	0	0	0	115
Lane Group Flow (vph)	1206	9	231	2506	17	25
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	29.8	29.8	11.5	45.3	10.8	10.8
Effective Green, g (s)	32.8	32.8	12.5	48.3	11.8	11.8
Actuated g/C Ratio	0.49	0.49	0.19	0.72	0.18	0.18
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	2489	775	330	3666	312	279
v/s Ratio Prot	0.24		0.13	c0.49	0.01	
v/s Ratio Perm		0.01				c0.02
v/c Ratio	0.48	0.01	0.70	0.68	0.05	0.09
Uniform Delay, d1	11.4	8.8	25.5	5.1	23.0	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	5.2	0.6	0.0	0.1
Delay (s)	11.7	8.8	30.7	5.7	23.0	23.1
Level of Service	B	A	C	A	C	C
Approach Delay (s)	11.6			7.8	23.1	
Approach LOS	B			A	C	

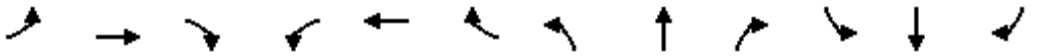
Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	42	1220	2570	341	207	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1534	1770	1557
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1534	1770	1557
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	1284	2705	359	218	31
RTOR Reduction (vph)	0	0	0	78	0	25
Lane Group Flow (vph)	44	1284	2705	281	218	6
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.4	68.3	60.9	60.9	17.5	17.5
Effective Green, g (s)	4.4	71.3	63.9	63.9	18.5	18.5
Actuated g/C Ratio	0.05	0.74	0.66	0.66	0.19	0.19
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	81	3749	3360	1014	339	298
v/s Ratio Prot	c0.02	0.25	c0.53		c0.12	
v/s Ratio Perm				0.18		0.00
v/c Ratio	0.54	0.34	0.81	0.28	0.64	0.02
Uniform Delay, d1	45.2	4.5	11.9	6.8	36.1	31.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.1	1.6	0.2	3.1	0.0
Delay (s)	49.1	4.5	13.5	7.0	39.2	31.8
Level of Service	D	A	B	A	D	C
Approach Delay (s)		6.0	12.7		38.2	
Approach LOS		A	B		D	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	96.7	Sum of lost time (s)	9.9
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

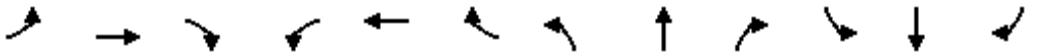


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	275	447	5	431	28	695	488	8	66	889	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	289	471	5	454	29	732	514	8	69	936	0
RTOR Reduction (vph)	0	0	387	0	0	22	0	0	4	0	0	0
Lane Group Flow (vph)	0	289	84	5	454	7	732	514	4	69	936	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		14.1	14.1	1.1	20.2	20.2	19.1	37.4	37.4	6.9	25.2	
Effective Green, g (s)		14.1	14.1	1.1	20.2	20.2	19.1	37.4	37.4	6.9	25.2	
Actuated g/C Ratio		0.18	0.18	0.01	0.25	0.25	0.24	0.47	0.47	0.09	0.32	
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		628	281	24	899	402	825	1665	745	154	1122	
v/s Ratio Prot		0.08		0.00	c0.13		c0.21	0.15		0.04	c0.26	
v/s Ratio Perm			0.05			0.00			0.00			
v/c Ratio		0.46	0.30	0.21	0.51	0.02	0.89	0.31	0.01	0.45	0.83	
Uniform Delay, d1		29.3	28.4	38.8	25.4	22.2	29.2	13.0	11.2	34.5	25.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.6	4.3	0.4	0.0	11.3	0.1	0.0	2.1	5.5	
Delay (s)		29.8	29.0	43.1	25.8	22.2	40.5	13.1	11.2	36.6	30.7	
Level of Service		C	C	D	C	C	D	B	B	D	C	
Approach Delay (s)		29.3			25.8			29.1			31.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

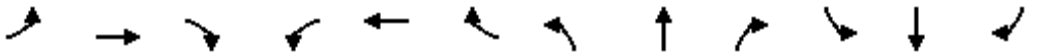
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	367	6	58	457	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3539	1583	1770	3539	1770	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (perm)	3539	1583	1770	3539	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	386	6	61	481	8	0
RTOR Reduction (vph)	0	4	0	0	0	0
Lane Group Flow (vph)	386	2	61	481	8	0
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	10.5	10.5	2.0	17.5	7.9	
Effective Green, g (s)	10.5	10.5	2.0	17.5	7.9	
Actuated g/C Ratio	0.30	0.30	0.06	0.49	0.22	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1050	470	100	1750	395	
v/s Ratio Prot	c0.11		0.03	c0.14		
v/s Ratio Perm		0.00			c0.00	
v/c Ratio	0.37	0.00	0.61	0.27	0.02	
Uniform Delay, d1	9.8	8.8	16.3	5.2	10.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.0	10.1	0.1	0.0	
Delay (s)	10.0	8.8	26.4	5.3	10.8	
Level of Service	B	A	C	A	B	
Approach Delay (s)	10.0			7.7	10.8	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	35.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



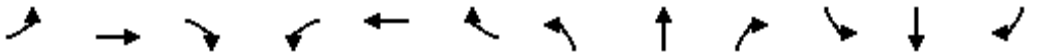
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	322	10	65	500	278	9	864	47	265	1278	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	120	339	11	68	526	293	9	909	49	279	1345	152
RTOR Reduction (vph)	0	0	8	0	0	138	0	0	30	0	0	77
Lane Group Flow (vph)	120	339	3	68	526	155	9	909	19	279	1345	75
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.7	21.9	21.9	3.0	21.2	21.2	0.7	32.3	32.3	10.6	42.2	42.2
Effective Green, g (s)	4.7	23.9	22.9	4.0	23.2	22.2	1.7	34.3	33.3	11.6	44.2	43.2
Actuated g/C Ratio	0.05	0.27	0.26	0.05	0.26	0.25	0.02	0.39	0.38	0.13	0.50	0.49
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	184	1384	413	156	935	400	66	1383	600	454	2560	779
v/s Ratio Prot	c0.03	0.07		0.02	c0.15		0.00	c0.26		c0.08	0.26	
v/s Ratio Perm			0.00			0.10			0.01			0.05
v/c Ratio	0.65	0.24	0.01	0.44	0.56	0.39	0.14	0.66	0.03	0.61	0.53	0.10
Uniform Delay, d1	40.7	24.9	24.0	40.8	27.9	27.2	42.3	21.9	17.1	36.0	14.7	11.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0	0.1	0.0	1.9	0.8	0.6	0.9	1.1	0.0	2.5	0.2	0.1
Delay (s)	48.8	25.0	24.0	42.7	28.7	27.8	43.3	23.1	17.1	38.5	14.9	11.9
Level of Service	D	C	C	D	C	C	D	C	B	D	B	B
Approach Delay (s)		31.1			29.5			23.0			18.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



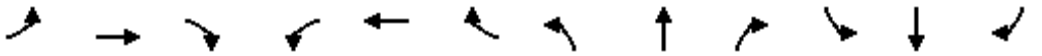
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	628	12	86	837	33	5	0	32	16	8	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	1770	1583		1770	1732	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	1770	1583		1770	1732	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	661	13	91	881	35	5	0	34	17	8	7
RTOR Reduction (vph)	0	0	9	0	0	17	0	27	0	0	6	0
Lane Group Flow (vph)	0	661	4	91	881	18	5	7	0	17	9	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		14.1	14.1	4.5	22.6	22.6	6.0	9.0		0.4	3.4	
Effective Green, g (s)		14.1	14.1	4.5	22.6	22.6	6.0	9.0		0.4	3.4	
Actuated g/C Ratio		0.32	0.32	0.10	0.51	0.51	0.14	0.20		0.01	0.08	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1134	507	181	1818	813	241	324		16	134	
v/s Ratio Prot		c0.19		0.05	c0.25		c0.00	0.00		c0.01	c0.00	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.58	0.01	0.50	0.48	0.02	0.02	0.02		1.06	0.06	
Uniform Delay, d1		12.5	10.2	18.7	6.9	5.3	16.5	14.0		21.8	18.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.0	2.2	0.2	0.0	0.2	0.0		246.4	0.2	
Delay (s)		13.3	10.2	20.9	7.1	5.3	16.6	14.0		268.2	19.0	
Level of Service		B	B	C	A	A	B	B		F	B	
Approach Delay (s)		13.2			8.3			14.3			151.4	
Approach LOS		B			A			B			F	

Intersection Summary					
HCM Average Control Delay	12.9	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.42				
Actuated Cycle Length (s)	44.0	Sum of lost time (s)		16.0	
Intersection Capacity Utilization	44.0%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	598	14	229	1045	89	12	126	179	11	169	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	3.0	4.7	4.7	4.3	4.3	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	629	15	241	1100	94	13	133	188	12	178	113
RTOR Reduction (vph)	0	0	11	0	0	57	0	0	155	0	0	93
Lane Group Flow (vph)	53	629	4	241	1100	37	13	133	33	12	178	20
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	4.0	21.3	21.3	13.4	30.7	30.7	12.8	12.8	12.8	13.3	13.3	13.3
Effective Green, g (s)	5.0	22.3	22.3	14.4	31.7	31.7	13.8	13.8	13.8	14.3	14.3	14.3
Actuated g/C Ratio	0.06	0.28	0.28	0.18	0.40	0.40	0.17	0.17	0.17	0.18	0.18	0.18
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	5.3	5.3	5.3	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	111	989	442	319	1406	629	306	322	274	317	334	284
v/s Ratio Prot	0.03	0.18		c0.14	c0.31		0.01	c0.07		0.01	c0.10	
v/s Ratio Perm			0.00			0.02			0.02			0.01
v/c Ratio	0.48	0.64	0.01	0.76	0.78	0.06	0.04	0.41	0.12	0.04	0.53	0.07
Uniform Delay, d1	36.1	25.2	20.8	31.0	21.0	14.8	27.5	29.4	27.9	27.1	29.7	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.7	0.0	8.7	3.3	0.1	0.0	0.3	0.1	0.0	0.8	0.0
Delay (s)	37.3	26.9	20.8	39.8	24.3	14.9	27.5	29.7	27.9	27.1	30.5	27.3
Level of Service	D	C	C	D	C	B	C	C	C	C	C	C
Approach Delay (s)		27.5			26.3			28.6			29.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	10.3
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

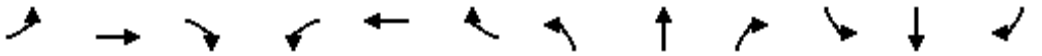


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	876	12	93	1227	52	15	16	14	34	38	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	5.7	4.0	4.7	4.7	4.9	4.9	4.9	3.9	4.9	3.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	922	13	98	1292	55	16	17	15	36	40	40
RTOR Reduction (vph)	0	0	7	0	0	18	0	0	14	0	0	36
Lane Group Flow (vph)	18	922	6	98	1292	37	16	17	1	36	40	4
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	0.5	35.0	35.0	6.0	40.5	40.5	4.7	4.7	4.7	6.4	6.4	6.4
Effective Green, g (s)	1.5	36.0	35.0	6.0	41.5	41.5	4.7	4.7	4.7	7.4	6.4	7.4
Actuated g/C Ratio	0.02	0.50	0.49	0.08	0.58	0.58	0.07	0.07	0.07	0.10	0.09	0.10
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.9	4.9	4.9	4.9	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	37	1779	774	148	2051	918	116	122	104	183	167	164
v/s Ratio Prot	0.01	0.26		c0.06	c0.37		0.01	c0.01		0.02	c0.02	
v/s Ratio Perm			0.00			0.02			0.00			0.00
v/c Ratio	0.49	0.52	0.01	0.66	0.63	0.04	0.14	0.14	0.01	0.20	0.24	0.03
Uniform Delay, d1	34.7	12.0	9.4	31.8	10.0	6.5	31.5	31.5	31.3	29.4	30.3	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.4	0.0	8.3	0.8	0.0	0.2	0.2	0.0	0.2	0.3	0.0
Delay (s)	38.3	12.4	9.4	40.1	10.7	6.5	31.7	31.7	31.3	29.6	30.6	28.9
Level of Service	D	B	A	D	B	A	C	C	C	C	C	C
Approach Delay (s)		12.8			12.6			31.6			29.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	13.8
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

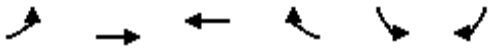
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	795	85	183	1259	104	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	837	89	193	1325	109	71
RTOR Reduction (vph)	0	54	0	0	0	59
Lane Group Flow (vph)	837	35	193	1325	109	12
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	21.5	21.5	9.0	35.5	9.6	9.6
Effective Green, g (s)	21.5	21.5	9.0	35.5	9.6	9.6
Actuated g/C Ratio	0.39	0.39	0.16	0.64	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1381	618	289	2280	308	276
v/s Ratio Prot	0.24		0.11	c0.37	c0.06	
v/s Ratio Perm		0.02				0.01
v/c Ratio	0.61	0.06	0.67	0.58	0.35	0.04
Uniform Delay, d1	13.4	10.5	21.6	5.6	20.0	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.0	5.7	0.4	0.7	0.1
Delay (s)	14.2	10.5	27.4	6.0	20.7	19.0
Level of Service	B	B	C	A	C	B
Approach Delay (s)	13.8			8.7	20.0	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



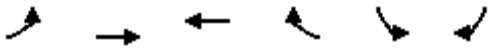
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	540	389	963	865	53	525	1080	561	68	1067	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.94	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	4990	3508		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	4990	3508		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	568	409	1014	911	56	553	1137	591	72	1123	87
RTOR Reduction (vph)	0	0	223	0	3	0	0	0	310	0	0	61
Lane Group Flow (vph)	95	568	186	1014	964	0	553	1137	281	72	1123	26
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	10.0	20.4	20.4	25.3	35.4		20.9	46.8	46.8	6.3	32.2	32.2
Effective Green, g (s)	11.0	22.9	22.9	26.3	37.9		21.9	50.2	50.2	7.3	35.6	35.6
Actuated g/C Ratio	0.09	0.19	0.19	0.22	0.32		0.18	0.42	0.42	0.06	0.30	0.30
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	319	684	306	1107	1122		634	2154	671	211	1528	476
v/s Ratio Prot	0.03	0.16		c0.20	c0.27		c0.16	0.22		0.02	c0.22	
v/s Ratio Perm			0.12						0.18			0.02
v/c Ratio	0.30	0.83	0.61	0.92	0.86		0.87	0.53	0.42	0.34	0.73	0.05
Uniform Delay, d1	50.1	45.9	43.7	45.0	37.8		46.9	25.4	23.9	53.3	37.2	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	9.2	4.5	11.4	7.0		12.2	0.4	0.8	0.4	2.2	0.1
Delay (s)	50.3	55.1	48.2	56.4	44.8		59.2	25.8	24.8	53.6	39.4	29.6
Level of Service	D	E	D	E	D		E	C	C	D	D	C
Approach Delay (s)		52.0			50.7			33.6			39.6	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	42.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	8.6
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



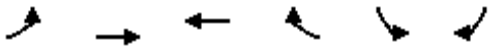
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	14	1143	1618	140	108	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	1203	1703	147	114	8
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	15	1203	1703	147	114	8
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.2	53.7	48.8	73.3	9.6	73.3
Effective Green, g (s)	2.2	56.7	51.8	73.3	11.1	73.3
Actuated g/C Ratio	0.03	0.77	0.71	1.00	0.15	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	53	2738	2501	1583	268	1583
v/s Ratio Prot	0.01	c0.34	c0.48		c0.06	
v/s Ratio Perm				0.09		0.01
v/c Ratio	0.28	0.44	0.68	0.09	0.43	0.01
Uniform Delay, d1	34.8	2.8	6.1	0.0	28.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.2	0.9	0.1	0.4	0.0
Delay (s)	35.8	3.0	7.0	0.1	28.6	0.0
Level of Service	D	A	A	A	C	A
Approach Delay (s)		3.4	6.4		26.7	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	8.2
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	1194	1782	16	48	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.98	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3534		1755	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3534		1755	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1257	1876	17	51	7
RTOR Reduction (vph)	0	0	0	0	6	0
Lane Group Flow (vph)	16	1257	1893	0	52	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.1	62.1	57.0		6.5	
Effective Green, g (s)	2.1	64.8	59.7		7.5	
Actuated g/C Ratio	0.03	0.83	0.76		0.10	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	47	2929	2695		168	
v/s Ratio Prot	0.01	c0.36	c0.54		c0.03	
v/s Ratio Perm						
v/c Ratio	0.34	0.43	0.70		0.31	
Uniform Delay, d1	37.4	1.8	4.8		33.0	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.6	0.2	1.0		0.4	
Delay (s)	39.0	2.0	5.7		33.4	
Level of Service	D	A	A		C	
Approach Delay (s)		2.4	5.7		33.4	
Approach LOS		A	A		C	

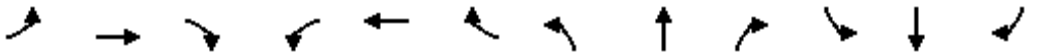
Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	44	1290	1813	32	32	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	5.7	3.0	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1521	1770	1545
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1521	1770	1545
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	1358	1908	34	34	32
RTOR Reduction (vph)	0	0	0	9	0	29
Lane Group Flow (vph)	46	1358	1908	25	34	3
Confl. Peds. (#/hr)				10		10
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.5	65.3	57.8	57.8	6.3	6.3
Effective Green, g (s)	4.5	68.0	60.5	58.8	7.3	7.3
Actuated g/C Ratio	0.05	0.83	0.74	0.71	0.09	0.09
Clearance Time (s)	4.0	6.7	6.7	6.7	4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	4.3	2.0	2.0
Lane Grp Cap (vph)	97	2924	2602	1087	157	137
v/s Ratio Prot	0.03	c0.38	c0.54		c0.02	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.47	0.46	0.73	0.02	0.22	0.02
Uniform Delay, d1	37.8	2.0	6.3	3.4	34.8	34.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.2	1.2	0.0	0.3	0.0
Delay (s)	39.1	2.2	7.5	3.4	35.1	34.3
Level of Service	D	A	A	A	D	C
Approach Delay (s)		3.4	7.4		34.7	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	82.3	Sum of lost time (s)	11.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1007	147	629	1555	190	259	432	523	370	679	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	2.0	2.7	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	1060	155	662	1637	200	273	455	551	389	715	193
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	74	1060	155	662	1637	200	273	455	551	389	715	193
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	4.8	30.3	120.0	30.0	55.5	120.0	12.1	22.7	120.0	18.6	28.2	120.0
Effective Green, g (s)	5.8	33.3	120.0	31.0	58.5	120.0	13.1	25.7	120.0	19.6	31.2	120.0
Actuated g/C Ratio	0.05	0.28	1.00	0.26	0.49	1.00	0.11	0.21	1.00	0.16	0.26	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		3.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	149	1270	1400	798	2231	1400	337	682	1400	505	828	1400
v/s Ratio Prot	0.02	c0.23		c0.21	0.36		c0.09	0.14		0.13	c0.22	
v/s Ratio Perm			0.11			0.14			0.39			0.14
v/c Ratio	0.50	0.83	0.11	0.83	0.73	0.14	0.81	0.67	0.39	0.77	0.86	0.14
Uniform Delay, d1	55.7	40.8	0.0	42.0	24.5	0.0	52.2	43.2	0.0	48.0	42.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	6.6	0.2	6.8	1.5	0.2	13.0	3.0	0.8	6.5	9.9	0.2
Delay (s)	56.6	47.3	0.2	48.8	26.0	0.2	65.2	46.2	0.8	54.6	52.2	0.2
Level of Service	E	D	A	D	C	A	E	D	A	D	D	A
Approach Delay (s)		42.2			30.0			30.7			45.2	
Approach LOS		D			C			C			D	

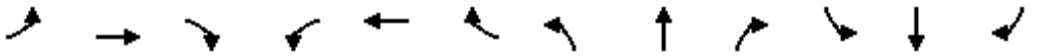
Intersection Summary			
HCM Average Control Delay	35.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1669	218	211	2535	11	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	1.7	1.7
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4968		1770	5085	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4968		1770	5085	1770	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1757	229	222	2668	12	247
RTOR Reduction (vph)	9	0	0	0	0	225
Lane Group Flow (vph)	1977	0	222	2668	12	22
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	78.9		18.8	101.7	9.6	9.6
Effective Green, g (s)	80.9		18.8	103.7	10.9	10.9
Actuated g/C Ratio	0.67		0.16	0.86	0.09	0.09
Clearance Time (s)	5.7		4.0	5.7	3.0	3.0
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	3349		277	4394	161	140
v/s Ratio Prot	0.40		c0.13	c0.52	0.01	
v/s Ratio Perm						c0.01
v/c Ratio	0.59		0.80	0.61	0.07	0.16
Uniform Delay, d1	10.6		48.8	2.3	49.9	50.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		14.4	0.6	0.1	0.2
Delay (s)	11.4		63.2	3.0	50.0	50.5
Level of Service	B		E	A	D	D
Approach Delay (s)	11.4			7.6	50.5	
Approach LOS	B			A	D	

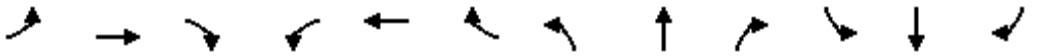
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



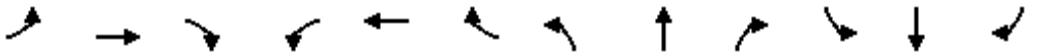
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	370	1412	76	743	1865	113	312	868	527	154	1442	428
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	6.0	5.7	4.0	6.0	6.0	4.0	4.0	6.4	4.0
Lane Util. Factor	0.97	0.91	1.00	0.94	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	389	1486	80	782	1963	119	328	914	555	162	1518	451
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	389	1486	80	782	1963	119	328	914	555	162	1518	451
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.3	42.3	120.0	19.0	48.3	120.0	9.0	28.4	120.0	8.6	25.6	120.0
Effective Green, g (s)	13.3	42.3	120.0	19.0	48.3	120.0	9.0	28.4	120.0	8.6	25.6	120.0
Actuated g/C Ratio	0.11	0.35	1.00	0.16	0.40	1.00	0.08	0.24	1.00	0.07	0.21	1.00
Clearance Time (s)	5.7	5.7		6.0	5.7		6.0	6.0		4.0	6.4	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	3.7	
Lane Grp Cap (vph)	380	1792	1583	790	2047	1583	257	1203	1583	246	1367	1583
v/s Ratio Prot	c0.11	0.29		0.16	c0.39		c0.10	0.18		0.05	c0.24	
v/s Ratio Perm			0.05			0.08			c0.35			0.28
v/c Ratio	1.02	0.83	0.05	0.99	0.96	0.08	1.28	0.76	0.35	0.66	1.11	0.28
Uniform Delay, d1	53.4	35.5	0.0	50.4	34.9	0.0	55.5	42.6	0.0	54.3	47.2	0.0
Progression Factor	1.00	1.00	1.00	0.82	0.48	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.3	3.7	0.1	24.0	9.5	0.1	151.0	3.0	0.6	4.8	60.6	0.5
Delay (s)	105.7	39.2	0.1	65.1	26.1	0.1	206.5	45.7	0.6	59.1	107.8	0.5
Level of Service	F	D	A	E	C	A	F	D	A	E	F	A
Approach Delay (s)		50.8			35.7			61.1			81.4	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM Average Control Delay	55.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.8
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



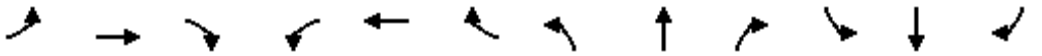
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	186	1695	118	454	2105	77	297	719	306	218	1269	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0	3.4	3.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	196	1784	124	478	2216	81	313	757	322	229	1336	153
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	0	0	0	83
Lane Group Flow (vph)	196	1784	66	478	2216	81	313	757	322	229	1336	70
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			Free			6
Actuated Green, G (s)	8.8	43.0	43.0	16.0	52.2	120.0	10.0	29.6	120.0	9.0	28.6	28.6
Effective Green, g (s)	9.8	46.0	46.0	19.4	55.6	120.0	11.0	33.0	120.0	10.0	31.6	31.6
Actuated g/C Ratio	0.08	0.38	0.38	0.16	0.46	1.00	0.09	0.28	1.00	0.08	0.26	0.26
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1		2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	280	1949	607	555	2969	1583	315	973	1583	286	1339	417
v/s Ratio Prot	0.06	c0.35		c0.14	0.35		c0.09	0.21		0.07	c0.26	
v/s Ratio Perm			0.04			0.05			0.20			0.04
v/c Ratio	0.70	0.92	0.11	0.86	0.75	0.05	0.99	0.78	0.20	0.80	1.00	0.17
Uniform Delay, d1	53.7	35.2	23.8	49.0	26.4	0.0	54.5	40.1	0.0	54.0	44.2	34.1
Progression Factor	1.40	0.42	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	6.1	0.3	12.5	1.8	0.1	48.7	4.4	0.3	14.0	23.9	0.3
Delay (s)	79.5	20.8	2.4	61.5	28.2	0.1	103.1	44.5	0.3	68.0	68.1	34.4
Level of Service	E	C	A	E	C	A	F	D	A	E	E	C
Approach Delay (s)		25.2			33.1			47.5			65.1	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	40.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



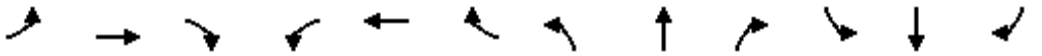
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	2126	33	93	2254	84	365	53	25	107	10	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	2238	35	98	2373	88	384	56	26	113	11	15
RTOR Reduction (vph)	0	0	10	0	0	20	0	0	22	0	0	14
Lane Group Flow (vph)	13	2238	25	98	2373	68	384	56	4	113	11	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.2	80.3	80.3	12.4	91.5	91.5	33.0	21.2	21.2	18.4	5.7	5.7
Effective Green, g (s)	1.2	80.3	80.3	12.4	91.5	91.5	33.0	21.2	21.2	18.4	5.7	5.7
Actuated g/C Ratio	0.01	0.54	0.54	0.08	0.61	0.61	0.22	0.14	0.14	0.12	0.04	0.04
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.5	2.5	2.0	3.1	3.1
Lane Grp Cap (vph)	14	2722	847	146	3102	966	389	263	224	217	71	60
v/s Ratio Prot	0.01	c0.44		0.06	c0.47		c0.22	c0.03		0.06	0.01	
v/s Ratio Perm			0.02			0.04			0.00			0.00
v/c Ratio	0.93	0.82	0.03	0.67	0.76	0.07	0.99	0.21	0.02	0.52	0.15	0.01
Uniform Delay, d1	74.4	28.9	16.5	66.8	21.4	11.9	58.3	57.0	55.4	61.7	69.8	69.4
Progression Factor	1.00	1.00	1.00	0.83	0.72	0.73	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	199.0	2.9	0.1	0.9	0.1	0.0	41.7	0.3	0.0	1.0	1.1	0.1
Delay (s)	273.3	31.9	16.5	56.5	15.5	8.7	100.0	57.3	55.4	62.7	70.9	69.5
Level of Service	F	C	B	E	B	A	F	E	E	E	E	E
Approach Delay (s)		33.0			16.9			92.4			64.1	
Approach LOS		C			B			F			E	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



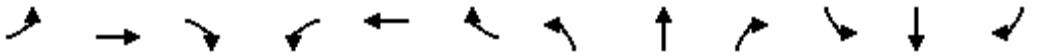
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	12	35	282	26	76	88	1351	178	94	926	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	1490		1593	1488		1593	4577	1425	1593	3185	1425
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1593	1490		1593	1488		1593	4577	1425	1593	3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	13	37	297	27	80	93	1422	187	99	975	1
RTOR Reduction (vph)	0	33	0	0	56	0	0	0	102	0	0	1
Lane Group Flow (vph)	6	17	0	297	51	0	93	1422	85	99	975	0
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	0.6	10.3		18.9	28.6		9.4	42.7	42.7	10.1	42.4	42.4
Effective Green, g (s)	1.6	11.8		19.9	30.1		10.4	45.7	45.7	11.1	45.4	45.4
Actuated g/C Ratio	0.02	0.12		0.20	0.30		0.10	0.46	0.46	0.11	0.45	0.45
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	25	176		317	448		166	2092	651	177	1446	647
v/s Ratio Prot	0.00	0.01		c0.19	c0.03		0.06	c0.31		c0.06	0.31	
v/s Ratio Perm									0.06			0.00
v/c Ratio	0.24	0.10		0.94	0.11		0.56	0.68	0.13	0.56	0.67	0.00
Uniform Delay, d1	48.6	39.4		39.4	25.3		42.6	21.4	15.7	42.1	21.5	14.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.2		33.7	0.1		2.6	1.8	0.4	2.2	1.5	0.0
Delay (s)	50.4	39.6		73.1	25.4		45.2	23.2	16.1	44.3	23.0	14.9
Level of Service	D	D		E	C		D	C	B	D	C	B
Approach Delay (s)		40.7			60.5			23.6			24.9	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	5.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



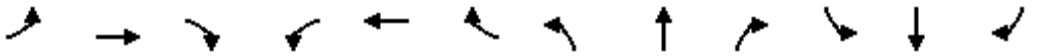
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	3	9	44	12	89	17	1505	56	62	1564	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	3	9	46	13	94	18	1584	59	65	1646	9
RTOR Reduction (vph)	0	0	8	0	0	82	0	0	24	0	0	3
Lane Group Flow (vph)	4	3	1	46	13	12	18	1584	35	65	1646	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	6.6	6.6	2.7	8.8	8.8	0.6	35.2	35.2	3.2	37.8	37.8
Effective Green, g (s)	0.5	6.6	6.6	2.7	8.8	8.8	0.6	35.2	35.2	3.2	37.8	37.8
Actuated g/C Ratio	0.01	0.10	0.10	0.04	0.13	0.13	0.01	0.52	0.52	0.05	0.56	0.56
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	345	154	71	460	206	16	2644	823	84	2839	884
v/s Ratio Prot	0.00	0.00		c0.03	0.00		0.01	0.31		c0.04	c0.32	
v/s Ratio Perm			0.00			c0.01			0.02			0.00
v/c Ratio	0.31	0.01	0.01	0.65	0.03	0.06	1.12	0.60	0.04	0.77	0.58	0.01
Uniform Delay, d1	33.4	27.6	27.6	32.0	25.7	25.8	33.6	11.3	8.0	31.9	9.8	6.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.0	0.0	0.0	18.5	0.0	0.1	268.4	0.4	0.0	34.8	0.3	0.0
Delay (s)	46.4	27.6	27.6	50.6	25.7	25.9	302.0	11.7	8.0	66.7	10.1	6.6
Level of Service	D	C	C	D	C	C	F	B	A	E	B	A
Approach Delay (s)		32.3			33.3			14.7			12.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



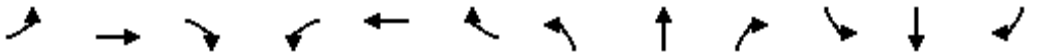
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	73	6	1	154	33	4	1	3	13	4	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	77	6	1	162	35	4	1	3	14	4	2
RTOR Reduction (vph)	0	0	5	0	0	29	0	0	2	0	0	1
Lane Group Flow (vph)	1	77	1	1	162	6	4	1	1	14	4	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	7.2	7.2	0.4	7.2	7.2	0.4	13.1	13.1	0.9	13.6	13.6
Effective Green, g (s)	0.4	7.2	7.2	0.4	7.2	7.2	0.4	13.1	13.1	0.9	13.6	13.6
Actuated g/C Ratio	0.01	0.17	0.17	0.01	0.17	0.17	0.01	0.31	0.31	0.02	0.33	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	17	613	274	17	613	274	17	587	498	38	609	518
v/s Ratio Prot	c0.00	0.02		0.00	c0.05		0.00	0.00		c0.01	c0.00	
v/s Ratio Perm			0.00			0.00			0.00			0.00
v/c Ratio	0.06	0.13	0.00	0.06	0.26	0.02	0.24	0.00	0.00	0.37	0.01	0.00
Uniform Delay, d1	20.4	14.5	14.2	20.4	14.9	14.3	20.4	9.8	9.8	20.1	9.4	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	0.0	1.5	0.2	0.0	7.0	0.0	0.0	6.0	0.0	0.0
Delay (s)	21.9	14.6	14.2	21.9	15.1	14.3	27.5	9.8	9.8	26.0	9.4	9.4
Level of Service	C	B	B	C	B	B	C	A	A	C	A	A
Approach Delay (s)		14.7			15.0			18.6			21.0	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.09		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	23.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



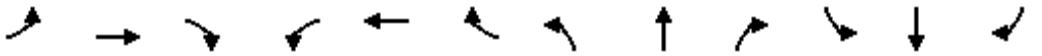
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	58	9	461	102	31	76	1270	231	84	1153	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.3	4.3	4.0	3.3	4.3
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	61	9	485	107	33	80	1337	243	88	1214	47
RTOR Reduction (vph)	0	0	8	0	0	19	0	0	124	0	0	26
Lane Group Flow (vph)	18	61	1	485	107	14	80	1337	119	88	1214	21
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.8	11.5	11.5	30.5	40.2	40.2	6.1	31.5	31.5	6.1	31.5	31.5
Effective Green, g (s)	2.8	13.5	12.5	31.5	42.2	41.2	7.1	33.5	32.5	7.1	33.5	32.5
Actuated g/C Ratio	0.03	0.14	0.13	0.32	0.42	0.41	0.07	0.34	0.33	0.07	0.34	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	50	478	198	558	1495	653	126	1705	515	126	1705	515
v/s Ratio Prot	0.01	c0.02		c0.27	0.03		0.05	c0.26		c0.05	0.24	
v/s Ratio Perm			0.00			0.01			0.08			0.01
v/c Ratio	0.36	0.13	0.01	0.87	0.07	0.02	0.63	0.78	0.23	0.70	0.71	0.04
Uniform Delay, d1	47.7	38.0	38.3	32.3	17.2	17.4	45.1	29.9	24.6	45.4	29.0	23.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	0.1	0.0	13.5	0.0	0.0	10.0	2.4	0.2	15.6	1.4	0.0
Delay (s)	52.1	38.1	38.3	45.8	17.2	17.4	55.2	32.4	24.8	60.9	30.4	23.1
Level of Service	D	D	D	D	B	B	E	C	C	E	C	C
Approach Delay (s)		41.0			39.4			32.4			32.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	14.3
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	370	0	20	588	0	23	0	1	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0		5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00		1.00	
Frt	1.00	1.00		1.00	1.00		1.00		0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00		1.00	
Satd. Flow (prot)	1770	3539		1770	3539		1770		1583		1863	
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00		1.00	
Satd. Flow (perm)	1770	3539		1770	3539		1770		1583		1863	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	389	0	21	619	0	24	0	1	0	2	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	2	389	0	21	619	0	24	0	0	0	2	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	14.0		0.5	14.1		0.4		14.1		8.7	
Effective Green, g (s)	0.4	14.0		0.5	14.1		0.4		14.1		8.7	
Actuated g/C Ratio	0.01	0.32		0.01	0.32		0.01		0.32		0.20	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0		5.0		5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	16	1136		20	1144		16		512		372	
v/s Ratio Prot	0.00	0.11		c0.01	c0.17		c0.01				c0.00	
v/s Ratio Perm									0.00			
v/c Ratio	0.12	0.34		1.05	0.54		1.50		0.00		0.01	
Uniform Delay, d1	21.4	11.3		21.6	12.1		21.6		10.0		14.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2	3.5	0.2		217.8	0.5		410.1		0.0		0.0	
Delay (s)	24.9	11.5		239.3	12.6		431.7		10.0		14.0	
Level of Service	C	B		F	B		F		A		B	
Approach Delay (s)		11.5			20.1			414.9			14.0	
Approach LOS		B			C			F			B	

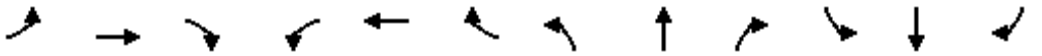
Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	249	47	40	654	6	67	81	11	3	53	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	262	49	42	688	6	71	85	12	3	56	40
RTOR Reduction (vph)	0	0	34	0	0	4	0	0	9	0	0	30
Lane Group Flow (vph)	72	262	15	42	688	2	71	85	3	3	56	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.9	16.5	16.5	1.3	14.9	14.9	2.9	15.2	15.2	0.6	12.9	12.9
Effective Green, g (s)	2.9	16.5	16.5	1.3	14.9	14.9	2.9	15.2	15.2	0.6	12.9	12.9
Actuated g/C Ratio	0.05	0.31	0.31	0.02	0.28	0.28	0.05	0.28	0.28	0.01	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	96	1089	487	43	984	440	96	528	449	20	448	381
v/s Ratio Prot	c0.04	0.07		0.02	c0.19		c0.04	c0.05		0.00	0.03	
v/s Ratio Perm			0.01			0.00			0.00			0.01
v/c Ratio	0.75	0.24	0.03	0.98	0.70	0.00	0.74	0.16	0.01	0.15	0.12	0.03
Uniform Delay, d1	25.0	13.9	13.0	26.1	17.3	14.0	25.0	14.4	13.8	26.2	15.9	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.6	0.1	0.0	127.2	2.2	0.0	25.5	0.1	0.0	3.5	0.1	0.0
Delay (s)	52.6	14.0	13.0	153.4	19.5	14.0	50.4	14.6	13.8	29.7	16.1	15.6
Level of Service	D	B	B	F	B	B	D	B	B	C	B	B
Approach Delay (s)		21.1			27.1			29.7			16.3	
Approach LOS		C			C			C			B	

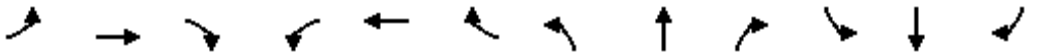
Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



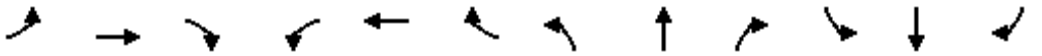
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	287	17	79	731	0	12	0	38	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0		5.0			5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00		1.00			1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00		0.85			0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95		1.00			1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539		1770		1583			1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95		1.00			1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539		1770		1583			1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	302	18	83	769	0	13	0	40	0	0	5
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	29	0	0	4
Lane Group Flow (vph)	2	302	6	83	769	0	13	0	11	0	0	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	15.9	15.9	4.0	19.5		0.4		14.0			8.6
Effective Green, g (s)	0.4	15.9	15.9	4.0	19.5		0.4		14.0			8.6
Actuated g/C Ratio	0.01	0.33	0.33	0.08	0.40		0.01		0.29			0.18
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0		5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0		3.0			3.0
Lane Grp Cap (vph)	14	1151	515	145	1411		14		453			278
v/s Ratio Prot	0.00	0.09		c0.05	c0.22		c0.01					
v/s Ratio Perm			0.00						c0.01			0.00
v/c Ratio	0.14	0.26	0.01	0.57	0.55		0.93		0.03			0.00
Uniform Delay, d1	24.1	12.2	11.2	21.6	11.3		24.2		12.5			16.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00		1.00			1.00
Incremental Delay, d2	4.7	0.1	0.0	5.4	0.4		201.0		0.0			0.0
Delay (s)	28.7	12.3	11.2	27.0	11.7		225.2		12.6			16.6
Level of Service	C	B	B	C	B		F		B			B
Approach Delay (s)		12.3			13.2			64.7			16.6	
Approach LOS		B			B			E			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	48.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



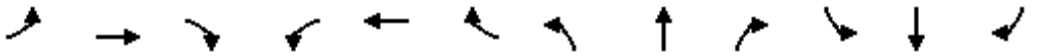
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	236	47	69	696	1	69	119	100	5	88	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	248	49	73	733	1	73	125	105	5	93	48
RTOR Reduction (vph)	0	0	33	0	0	1	0	0	79	0	0	38
Lane Group Flow (vph)	44	248	16	73	733	0	73	125	26	5	93	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.7	17.6	17.6	2.9	18.8	18.8	2.9	13.8	13.8	0.5	11.4	11.4
Effective Green, g (s)	1.7	17.6	17.6	2.9	18.8	18.8	2.9	13.8	13.8	0.5	11.4	11.4
Actuated g/C Ratio	0.03	0.32	0.32	0.05	0.34	0.34	0.05	0.25	0.25	0.01	0.21	0.21
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	55	1137	508	94	1214	543	94	469	399	16	388	329
v/s Ratio Prot	0.02	0.07		c0.04	c0.21		c0.04	c0.07		0.00	0.05	
v/s Ratio Perm			0.01			0.00			0.02			0.01
v/c Ratio	0.80	0.22	0.03	0.78	0.60	0.00	0.78	0.27	0.07	0.31	0.24	0.03
Uniform Delay, d1	26.4	13.6	12.8	25.6	14.9	11.8	25.6	16.4	15.6	27.0	18.1	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	55.2	0.1	0.0	32.2	0.9	0.0	32.2	0.3	0.1	10.9	0.3	0.0
Delay (s)	81.6	13.7	12.8	57.8	15.8	11.8	57.8	16.7	15.7	37.8	18.4	17.3
Level of Service	F	B	B	E	B	B	E	B	B	D	B	B
Approach Delay (s)		22.3			19.6			26.3			18.7	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



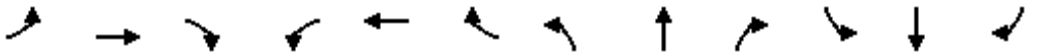
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	345	0	8	12	0	501	46	1611	23	222	1483	810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97		1.00	1.00		1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583	1770		1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583	1770		1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	363	0	8	13	0	527	48	1696	24	234	1561	853
RTOR Reduction (vph)	0	0	7	0	0	18	0	0	7	0	0	265
Lane Group Flow (vph)	363	0	1	13	0	509	48	1696	17	234	1561	588
Turn Type	Prot		custom	Prot		Over	Prot		Perm	Prot		Perm
Protected Phases	7		4	3		1	5	2		1	6	
Permitted Phases			7						2			6
Actuated Green, G (s)	19.2		19.2	1.4		42.0	5.4	51.5	51.5	42.0	88.1	88.1
Effective Green, g (s)	19.2		19.2	1.4		42.0	5.4	51.5	51.5	42.0	88.1	88.1
Actuated g/C Ratio	0.15		0.15	0.01		0.33	0.04	0.40	0.40	0.33	0.69	0.69
Clearance Time (s)	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	516		238	19		521	75	2051	638	582	3508	1092
v/s Ratio Prot	c0.11		0.00	0.01		c0.32	0.03	c0.33		0.13	0.31	
v/s Ratio Perm			0.00						0.01			0.37
v/c Ratio	0.70		0.01	0.68		0.98	0.64	0.83	0.03	0.40	0.44	0.54
Uniform Delay, d1	51.5		46.1	62.9		42.4	60.2	34.1	23.0	33.1	8.9	9.8
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3		0.0	69.9		33.1	17.1	2.9	0.0	0.5	0.1	0.5
Delay (s)	55.9		46.1	132.8		75.5	77.3	37.0	23.0	33.6	9.0	10.3
Level of Service	E		D	F		E	E	D	C	C	A	B
Approach Delay (s)		55.7			76.9			37.9			11.6	
Approach LOS		E			E			D			B	

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	127.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



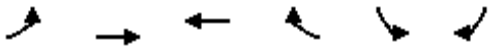
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	1453	30	69	1396	46	0	24	18	142	10	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	1529	32	73	1469	48	0	25	19	149	11	7
RTOR Reduction (vph)	0	0	16	0	0	25	0	0	16	0	0	5
Lane Group Flow (vph)	15	1529	16	73	1469	23	0	25	3	149	11	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.6	29.8	29.8	3.1	32.3	32.3		10.3	10.3	8.2	23.5	23.5
Effective Green, g (s)	1.6	31.8	30.8	4.1	34.3	33.3		11.3	11.3	9.2	24.5	24.5
Actuated g/C Ratio	0.02	0.45	0.43	0.06	0.48	0.47		0.16	0.16	0.13	0.34	0.34
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	40	2265	683	102	2443	738		295	251	228	639	543
v/s Ratio Prot	0.01	c0.30		0.04	c0.29			c0.01		c0.08	0.01	
v/s Ratio Perm			0.01			0.01			0.00			0.00
v/c Ratio	0.38	0.68	0.02	0.72	0.60	0.03		0.08	0.01	0.65	0.02	0.00
Uniform Delay, d1	34.4	15.7	11.7	33.1	13.6	10.3		25.6	25.3	29.6	15.5	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	0.8	0.0	21.1	0.4	0.0		0.1	0.0	6.6	0.0	0.0
Delay (s)	40.2	16.5	11.7	54.2	14.0	10.3		25.8	25.4	36.2	15.5	15.4
Level of Service	D	B	B	D	B	B		C	C	D	B	B
Approach Delay (s)		16.6			15.7			25.6			33.9	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



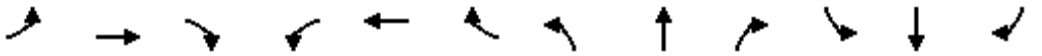
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	529	1148	6	453	1109	31	19	1117	451	57	1158	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	557	1208	6	477	1167	33	20	1176	475	60	1219	405
RTOR Reduction (vph)	0	0	3	0	0	21	0	0	275	0	0	234
Lane Group Flow (vph)	557	1208	3	477	1167	12	20	1176	200	60	1219	171
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.4	34.5	34.5	20.1	33.2	33.2	1.5	37.3	37.3	3.0	38.8	38.8
Effective Green, g (s)	22.4	36.5	35.5	21.1	35.2	34.2	2.5	39.3	38.3	4.0	40.8	39.8
Actuated g/C Ratio	0.19	0.32	0.31	0.18	0.31	0.30	0.02	0.34	0.33	0.03	0.36	0.35
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	669	1615	489	630	1558	471	75	1739	528	120	1806	548
v/s Ratio Prot	c0.16	c0.24		0.14	0.23		0.01	0.23		c0.02	c0.24	
v/s Ratio Perm			0.00			0.01			0.13			0.11
v/c Ratio	0.83	0.75	0.01	0.76	0.75	0.03	0.27	0.68	0.38	0.50	0.67	0.31
Uniform Delay, d1	44.4	35.1	27.5	44.5	35.9	28.6	55.3	32.4	29.2	54.5	31.4	27.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	1.9	0.0	5.2	2.0	0.0	1.9	1.1	0.5	3.3	1.0	0.3
Delay (s)	53.2	37.0	27.5	49.7	37.9	28.6	57.2	33.4	29.7	57.7	32.4	27.8
Level of Service	D	D	C	D	D	C	E	C	C	E	C	C
Approach Delay (s)		42.1			41.1			32.6			32.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	114.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



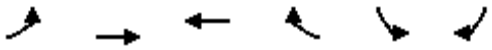
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	200	1277	1292	97	125	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	211	1344	1360	102	132	396
RTOR Reduction (vph)	0	0	0	61	0	322
Lane Group Flow (vph)	211	1344	1360	41	132	74
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	12.8	44.5	26.7	26.7	12.5	12.5
Effective Green, g (s)	12.8	44.5	26.7	26.7	12.5	12.5
Actuated g/C Ratio	0.19	0.66	0.40	0.40	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	338	3377	2026	631	330	295
v/s Ratio Prot	c0.12	0.26	c0.27		c0.07	
v/s Ratio Perm				0.03		0.05
v/c Ratio	0.62	0.40	0.67	0.06	0.40	0.25
Uniform Delay, d1	24.9	5.1	16.5	12.4	24.0	23.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.1	0.9	0.0	0.8	0.4
Delay (s)	28.5	5.2	17.4	12.5	24.8	23.7
Level of Service	C	A	B	B	C	C
Approach Delay (s)		8.4	17.1		24.0	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



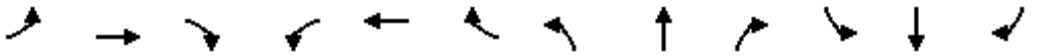
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	519	853	31	503	784	271	12	732	262	151	814	592
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	4.0	4.0	5.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	546	898	33	529	825	285	13	771	276	159	857	623
RTOR Reduction (vph)	0	0	24	0	0	76	0	0	193	0	0	282
Lane Group Flow (vph)	546	898	9	529	825	209	13	771	83	159	857	341
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.3	26.7	26.7	18.9	26.3	26.3	1.4	30.0	30.0	6.2	34.8	34.8
Effective Green, g (s)	20.3	28.7	27.7	19.9	28.3	27.3	2.4	32.0	31.0	7.2	36.8	35.8
Actuated g/C Ratio	0.20	0.28	0.27	0.19	0.28	0.27	0.02	0.31	0.30	0.07	0.36	0.35
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	678	1420	427	665	1400	420	80	1583	477	240	1820	551
v/s Ratio Prot	c0.16	c0.18		0.15	0.16		0.00	0.15		c0.05	0.17	
v/s Ratio Perm			0.01			0.13			0.05			c0.22
v/c Ratio	0.81	0.63	0.02	0.80	0.59	0.50	0.16	0.49	0.17	0.66	0.47	0.62
Uniform Delay, d1	39.4	32.4	27.6	39.5	32.2	31.9	49.2	28.7	26.5	46.6	25.5	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	0.9	0.0	6.5	0.6	0.9	1.0	0.2	0.2	6.7	0.2	2.1
Delay (s)	46.3	33.4	27.6	46.1	32.9	32.9	50.2	29.0	26.6	53.3	25.7	29.9
Level of Service	D	C	C	D	C	C	D	C	C	D	C	C
Approach Delay (s)		38.0			37.1			28.6			30.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	102.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



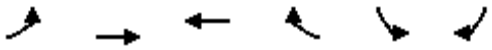
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1265	1394	88	0	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0		5.0
Lane Util. Factor		0.91	0.91	1.00		1.00
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		5085	5085	1583		1583
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		5085	5085	1583		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1332	1467	93	0	172
RTOR Reduction (vph)	0	0	0	41	0	133
Lane Group Flow (vph)	0	1332	1467	52	0	39
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)		24.1	24.1	24.1		9.2
Effective Green, g (s)		24.1	24.1	24.1		9.2
Actuated g/C Ratio		0.56	0.56	0.56		0.21
Clearance Time (s)		5.0	5.0	5.0		5.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		2830	2830	881		336
v/s Ratio Prot		0.26	c0.29			
v/s Ratio Perm				0.03		c0.02
v/c Ratio		0.47	0.52	0.06		0.12
Uniform Delay, d1		5.8	6.0	4.4		13.8
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.2	0.0		0.2
Delay (s)		5.9	6.1	4.4		13.9
Level of Service		A	A	A		B
Approach Delay (s)		5.9	6.0		13.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	43.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



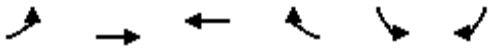
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	1139	104	25	1337	194	120	114	10	106	69	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	1199	109	26	1407	204	126	120	11	112	73	26
RTOR Reduction (vph)	0	0	63	0	0	119	0	0	9	0	0	21
Lane Group Flow (vph)	23	1199	46	26	1407	85	126	120	2	112	73	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.3	26.7	26.7	1.3	26.7	26.7	6.3	12.0	12.0	6.3	12.0	12.0
Effective Green, g (s)	2.3	28.7	27.7	2.3	28.7	27.7	7.3	13.0	13.0	7.3	13.0	13.0
Actuated g/C Ratio	0.03	0.43	0.42	0.03	0.43	0.42	0.11	0.20	0.20	0.11	0.20	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	61	2201	661	61	2201	661	195	365	310	195	365	310
v/s Ratio Prot	0.01	0.24		c0.01	c0.28		c0.07	c0.06		0.06	0.04	
v/s Ratio Perm			0.03			0.05			0.00			0.00
v/c Ratio	0.38	0.54	0.07	0.43	0.64	0.13	0.65	0.33	0.01	0.57	0.20	0.02
Uniform Delay, d1	31.3	14.0	11.6	31.4	14.7	11.9	28.3	22.9	21.5	28.0	22.3	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.3	0.0	4.7	0.6	0.1	7.2	0.5	0.0	4.0	0.3	0.0
Delay (s)	35.2	14.2	11.6	36.1	15.4	12.0	35.4	23.4	21.5	32.1	22.6	21.5
Level of Service	D	B	B	D	B	B	D	C	C	C	C	C
Approach Delay (s)		14.4			15.3			29.2			27.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



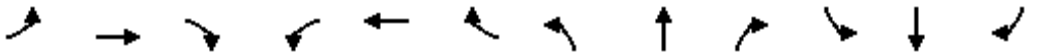
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	149	1106	1297	123	209	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	157	1164	1365	129	220	273
RTOR Reduction (vph)	0	0	0	82	0	206
Lane Group Flow (vph)	157	1164	1365	47	220	67
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.7	33.7	21.0	21.0	14.1	14.1
Effective Green, g (s)	7.7	33.7	21.0	21.0	14.1	14.1
Actuated g/C Ratio	0.13	0.58	0.36	0.36	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	2965	1847	575	432	386
v/s Ratio Prot	c0.09	0.23	c0.27		c0.12	
v/s Ratio Perm				0.03		0.04
v/c Ratio	0.67	0.39	0.74	0.08	0.51	0.17
Uniform Delay, d1	23.8	6.5	16.0	12.1	18.9	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	0.1	1.6	0.1	0.9	0.2
Delay (s)	30.7	6.6	17.6	12.1	19.8	17.5
Level of Service	C	A	B	B	B	B
Approach Delay (s)		9.5	17.1		18.5	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	83	1232	1411	62	64	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	87	1297	1485	65	67	9
RTOR Reduction (vph)	0	0	0	35	0	7
Lane Group Flow (vph)	87	1297	1485	30	67	2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.7	33.0	24.3	24.3	10.3	10.3
Effective Green, g (s)	3.7	33.0	24.3	24.3	10.3	10.3
Actuated g/C Ratio	0.07	0.62	0.46	0.46	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	123	3148	2318	722	342	306
v/s Ratio Prot	c0.05	0.26	c0.29		c0.04	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.71	0.41	0.64	0.04	0.20	0.01
Uniform Delay, d1	24.3	5.2	11.1	8.0	18.0	17.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.9	0.1	0.6	0.0	0.3	0.0
Delay (s)	41.2	5.3	11.8	8.1	18.3	17.4
Level of Service	D	A	B	A	B	B
Approach Delay (s)		7.5	11.6		18.2	
Approach LOS		A	B		B	

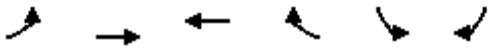
Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	228	1028	120	528	1306	245	159	849	423	399	1021	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	3.0	3.7	3.7	3.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	240	1082	126	556	1375	258	167	894	445	420	1075	39
RTOR Reduction (vph)	0	0	93	0	0	139	0	0	276	0	0	18
Lane Group Flow (vph)	240	1082	33	556	1375	119	167	894	169	420	1075	21
Heavy Vehicles (%)	2%	4%	2%	2%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.5	31.7	31.7	24.1	44.3	44.3	8.8	30.1	30.1	15.1	36.4	36.4
Effective Green, g (s)	12.5	34.7	32.7	26.1	46.6	46.6	10.8	32.1	32.1	16.1	38.4	38.4
Actuated g/C Ratio	0.10	0.28	0.27	0.21	0.38	0.38	0.09	0.26	0.26	0.13	0.31	0.31
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	4.7	4.7	3.0	4.8	4.8	3.0	4.8	4.8	3.0	4.7	4.7
Lane Grp Cap (vph)	349	1407	421	728	1890	588	301	1327	413	449	1588	494
v/s Ratio Prot	0.07	c0.22		c0.16	0.28		0.05	0.18		c0.12	c0.21	
v/s Ratio Perm			0.02			0.08			0.11			0.01
v/c Ratio	0.69	0.77	0.08	0.76	0.73	0.20	0.55	0.67	0.41	0.94	0.68	0.04
Uniform Delay, d1	53.4	40.5	33.9	45.6	32.8	25.7	53.8	40.8	37.6	52.9	36.9	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	3.0	0.2	4.8	1.7	0.3	2.2	1.7	1.3	26.8	1.4	0.1
Delay (s)	58.9	43.5	34.0	50.3	34.5	26.0	56.0	42.5	38.9	79.8	38.3	29.6
Level of Service	E	D	C	D	C	C	E	D	D	E	D	C
Approach Delay (s)		45.2			37.5			42.9			49.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	43.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

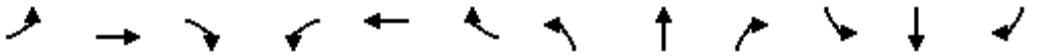
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	347	1420	1410	68	55	596
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1478	1770	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	365	1495	1484	72	58	627
RTOR Reduction (vph)	0	0	0	37	0	159
Lane Group Flow (vph)	365	1495	1484	35	58	468
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	8.7	39.5	26.8	26.8	4.7	13.4
Effective Green, g (s)	9.7	42.5	29.8	29.8	5.7	15.4
Actuated g/C Ratio	0.16	0.69	0.49	0.49	0.09	0.25
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	543	2454	1720	719	165	837
v/s Ratio Prot	0.11	0.42	c0.42		0.03	c0.09
v/s Ratio Perm				0.02		0.08
v/c Ratio	0.67	0.61	0.86	0.05	0.35	0.56
Uniform Delay, d1	24.3	5.0	13.9	8.3	26.1	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.5	4.9	0.0	0.5	0.5
Delay (s)	26.9	5.5	18.9	8.3	26.5	20.5
Level of Service	C	A	B	A	C	C
Approach Delay (s)		9.7	18.4		21.0	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	13.1
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

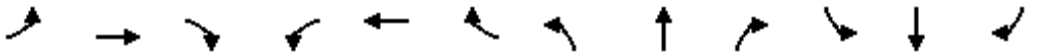
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	475	890	96	482	949	225	148	0	183	162	0	498
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0	5.0	2.0	4.0	3.0	2.0		3.0	3.7		2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.99	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1526	1770	3539	1562	1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1526	1770	3539	1562	1770		1583	1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	500	937	101	507	999	237	156	0	193	171	0	524
RTOR Reduction (vph)	0	0	65	0	0	0	0	0	166	0	0	0
Lane Group Flow (vph)	500	937	36	507	999	237	156	0	27	171	0	524
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot		Perm	Prot		Free	Prot		custom	Prot		Free
Protected Phases	7	4		3	8		5			6		
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	32.5	33.1	33.1	33.5	34.1	111.3	14.7		14.7	10.3		111.3
Effective Green, g (s)	34.5	35.1	34.1	35.5	36.1	111.3	16.7		15.7	12.3		111.3
Actuated g/C Ratio	0.31	0.32	0.31	0.32	0.32	1.00	0.15		0.14	0.11		1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0		4.0	5.7		
Vehicle Extension (s)	2.0	4.8	4.8	2.0	4.8		2.0		2.0	2.0		
Lane Grp Cap (vph)	549	1116	468	565	1148	1562	266		223	196		1583
v/s Ratio Prot	c0.28	0.26		c0.29	0.28		c0.09			c0.10		
v/s Ratio Perm			0.02			0.15			0.02			c0.33
v/c Ratio	0.91	0.84	0.08	0.90	0.87	0.15	0.59		0.12	0.87		0.33
Uniform Delay, d1	36.9	35.5	27.4	36.2	35.4	0.0	44.1		41.8	48.7		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	19.0	6.3	0.1	16.5	7.9	0.2	2.1		0.1	31.2		0.6
Delay (s)	55.9	41.8	27.6	52.6	43.3	0.2	46.2		41.9	79.9		0.6
Level of Service	E	D	C	D	D	A	D		D	E		A
Approach Delay (s)		45.4			40.2			43.8			20.1	
Approach LOS		D			D			D			C	

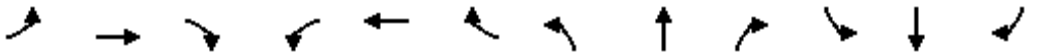
Intersection Summary			
HCM Average Control Delay	39.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	111.3	Sum of lost time (s)	9.7
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	243	334	512	90	540	131	791	1629	93	149	1743	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	256	352	539	95	568	138	833	1715	98	157	1835	280
RTOR Reduction (vph)	0	0	367	0	0	100	0	0	48	0	0	0
Lane Group Flow (vph)	256	352	172	95	568	38	833	1715	50	157	1835	280
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	10.7	19.8	19.8	7.8	17.9	17.9	32.3	58.3	58.3	14.1	40.1	120.0
Effective Green, g (s)	11.7	22.8	22.8	8.8	20.4	20.4	33.3	61.3	61.3	15.1	43.1	120.0
Actuated g/C Ratio	0.10	0.19	0.19	0.07	0.17	0.17	0.28	0.51	0.51	0.13	0.36	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	335	672	301	130	864	269	953	2598	809	223	2302	1583
v/s Ratio Prot	c0.07	0.10		0.05	c0.11		c0.24	0.34		0.09	c0.29	
v/s Ratio Perm			0.11			0.02			0.03			c0.18
v/c Ratio	0.76	0.52	0.57	0.73	0.66	0.14	0.87	0.66	0.06	0.70	0.80	0.18
Uniform Delay, d1	52.8	43.7	44.2	54.4	46.5	42.4	41.4	21.7	14.8	50.3	34.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	1.2	3.6	16.5	2.4	0.5	9.0	1.3	0.1	8.0	2.1	0.2
Delay (s)	61.8	44.9	47.8	71.0	49.0	42.9	50.3	23.0	15.0	58.3	36.7	0.2
Level of Service	E	D	D	E	D	D	D	C	B	E	D	A
Approach Delay (s)		50.0			50.5			31.3			33.7	
Approach LOS		D			D			C			C	

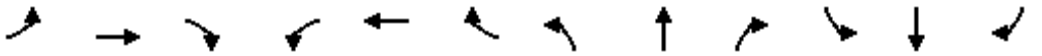
Intersection Summary			
HCM Average Control Delay	37.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	479	263	364	570	551	208	823	339	420	1233	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0	5.0	3.0	2.6	5.0	5.0	2.6	3.0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1562	3433	1863	1559	1770	3539	1566	3433	3539	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1562	3433	1863	1559	1770	3539	1566	3433	3539	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	504	277	383	600	580	219	866	357	442	1298	6
RTOR Reduction (vph)	0	0	0	0	0	96	0	0	44	0	0	0
Lane Group Flow (vph)	26	504	277	383	600	484	219	866	313	442	1298	6
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		Free
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			Free			8			2			Free
Actuated Green, G (s)	5.4	31.6	111.6	13.0	39.2	57.1	12.0	29.1	42.1	17.9	36.0	111.6
Effective Green, g (s)	6.4	31.6	111.6	13.0	39.2	57.1	13.0	32.5	42.1	17.9	39.4	111.6
Actuated g/C Ratio	0.06	0.28	1.00	0.12	0.35	0.51	0.12	0.29	0.38	0.16	0.35	1.00
Clearance Time (s)	4.0	4.0		5.0	5.0	5.0	4.0	6.0	5.0	5.0	6.0	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	3.9	3.0	3.0	3.9	
Lane Grp Cap (vph)	102	528	1562	400	654	868	206	1031	591	551	1249	1548
v/s Ratio Prot	0.01	0.27		c0.11	c0.32	0.09	c0.12	0.24	0.06	0.13	c0.37	
v/s Ratio Perm			0.18			0.22			0.14			0.00
v/c Ratio	0.25	0.95	0.18	0.96	0.92	0.56	1.06	0.84	0.53	0.80	1.04	0.00
Uniform Delay, d1	50.3	39.3	0.0	49.0	34.7	18.6	49.3	37.1	27.0	45.1	36.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	27.7	0.2	33.7	17.7	0.8	80.4	6.4	0.9	8.2	36.2	0.0
Delay (s)	50.8	67.0	0.2	82.8	52.4	19.4	129.7	43.5	27.9	53.4	72.3	0.0
Level of Service	D	E	A	F	D	B	F	D	C	D	E	A
Approach Delay (s)		43.6			47.6			52.7			67.3	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	54.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	111.6	Sum of lost time (s)	10.6
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

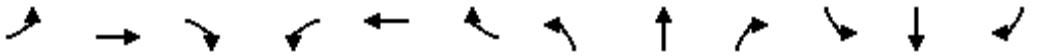
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	752	15	45	922	558	1	641	38	585	1012	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	4.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1555	3433	3539	1562	3433	3539	1562	3433	3539	1551
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1555	3433	3539	1562	3433	3539	1562	3433	3539	1551
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	792	16	47	971	587	1	675	40	616	1065	56
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	0	24
Lane Group Flow (vph)	58	792	6	47	971	587	1	675	40	616	1065	32
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	3		4	8		5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)	7.4	28.6	28.6	14.4	34.6	113.7	1.5	30.9	113.7	21.8	51.2	51.2
Effective Green, g (s)	8.4	29.6	29.6	15.4	35.6	113.7	2.5	31.9	113.7	22.8	52.2	52.2
Actuated g/C Ratio	0.07	0.26	0.26	0.14	0.31	1.00	0.02	0.28	1.00	0.20	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	5.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	3.0		2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)	254	921	405	465	1108	1562	75	993	1562	688	1625	712
v/s Ratio Prot	0.02	c0.22		0.01	c0.27		0.00	0.19		c0.18	c0.30	
v/s Ratio Perm			0.00			0.38			0.03			0.02
v/c Ratio	0.23	0.86	0.01	0.10	0.88	0.38	0.01	0.68	0.03	0.90	0.66	0.05
Uniform Delay, d1	49.6	40.1	31.2	43.1	37.0	0.0	54.4	36.4	0.0	44.3	23.8	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	7.8	0.0	0.0	8.0	0.7	0.0	2.3	0.0	13.9	1.2	0.1
Delay (s)	49.8	47.9	31.2	43.1	44.9	0.7	54.4	38.7	0.0	58.2	25.0	17.0
Level of Service	D	D	C	D	D	A	D	D	A	E	C	B
Approach Delay (s)		47.7			28.7			36.6			36.5	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	35.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	113.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



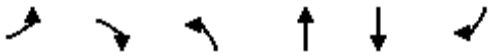
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	4	98	33	7	2	155	1442	22	0	1333	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0		3.0	3.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00		0.95	1.00
Frt		1.00	0.85		0.99		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.97	1.00		0.96		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)		1800	1478		1780		1770	3539	1583		3539	1583
Flt Permitted		0.97	1.00		0.96		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)		1800	1478		1780		1770	3539	1583		3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	4	103	35	7	2	163	1518	23	0	1403	1
RTOR Reduction (vph)	0	0	89	0	2	0	0	0	4	0	0	0
Lane Group Flow (vph)	0	13	14	0	42	0	163	1518	19	0	1403	1
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		5.5	5.5		1.4		3.1	33.6	33.6		26.5	26.5
Effective Green, g (s)		7.4	7.4		3.3		4.1	36.6	36.6		29.5	29.5
Actuated g/C Ratio		0.14	0.14		0.06		0.07	0.67	0.67		0.54	0.54
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1		4.1	4.1
Lane Grp Cap (vph)		244	200		107		133	2368	1059		1909	854
v/s Ratio Prot		0.01			c0.02		c0.09	0.43			c0.40	
v/s Ratio Perm			c0.01						0.01			0.00
v/c Ratio		0.05	0.07		0.39		1.23	0.64	0.02		0.73	0.00
Uniform Delay, d1		20.6	20.6		24.7		25.3	5.2	3.0		9.6	5.8
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.0	0.1		0.9		151.0	0.7	0.0		1.6	0.0
Delay (s)		20.6	20.7		25.6		176.3	5.9	3.0		11.2	5.8
Level of Service		C	C		C		F	A	A		B	A
Approach Delay (s)		20.7			25.6			22.2			11.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	54.7	Sum of lost time (s)	10.4
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

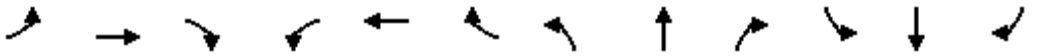
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	65	78	2104	161	84	1904
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	82	2215	169	88	2004
RTOR Reduction (vph)	0	74	0	45	0	0
Lane Group Flow (vph)	68	8	2215	124	88	2004
Turn Type		Perm		Perm	Prot	
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	11.7	11.7	82.5	82.5	9.7	96.2
Effective Green, g (s)	11.7	11.7	82.5	82.5	9.7	96.2
Actuated g/C Ratio	0.10	0.10	0.69	0.69	0.08	0.80
Clearance Time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Vehicle Extension (s)	2.5	2.5	3.5	3.5	2.0	3.7
Lane Grp Cap (vph)	173	154	3496	1088	143	4076
v/s Ratio Prot	c0.04		c0.44		c0.05	0.39
v/s Ratio Perm		0.01		0.08		
v/c Ratio	0.39	0.05	0.63	0.11	0.62	0.49
Uniform Delay, d1	50.8	49.1	10.4	6.4	53.3	3.9
Progression Factor	1.00	1.00	0.69	0.83	1.18	1.03
Incremental Delay, d2	1.1	0.1	0.3	0.0	4.7	0.4
Delay (s)	51.9	49.2	7.5	5.3	67.6	4.4
Level of Service	D	D	A	A	E	A
Approach Delay (s)	50.4		7.4			7.0
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



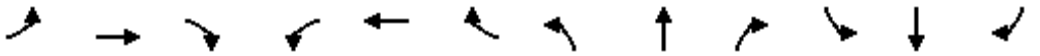
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	309	276	107	1997	1772	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	5085	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	325	291	113	2102	1865	249
RTOR Reduction (vph)	0	249	0	0	0	47
Lane Group Flow (vph)	325	42	113	2102	1865	202
Turn Type		Perm	Prot			Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Actuated Green, G (s)	17.5	17.5	11.8	91.1	75.0	75.0
Effective Green, g (s)	17.5	17.5	11.8	91.1	75.0	75.0
Actuated g/C Ratio	0.15	0.15	0.10	0.76	0.62	0.62
Clearance Time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.1	4.1	4.1
Lane Grp Cap (vph)	501	231	338	3860	3178	989
v/s Ratio Prot	c0.09		0.03	c0.41	c0.37	
v/s Ratio Perm		0.03				0.13
v/c Ratio	0.65	0.18	0.33	0.54	0.59	0.20
Uniform Delay, d1	48.4	45.0	50.4	5.9	13.3	9.7
Progression Factor	1.00	1.00	1.21	0.50	0.26	0.07
Incremental Delay, d2	2.2	0.1	0.2	0.5	0.7	0.4
Delay (s)	50.5	45.1	61.2	3.4	4.2	1.1
Level of Service	D	D	E	A	A	A
Approach Delay (s)	48.0			6.4	3.8	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



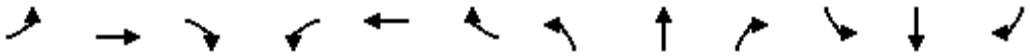
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	254	31	228	7	20	14	186	1859	8	15	1985	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1703	1583	1770	1746		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1703	1583	1770	1746		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	267	33	240	7	21	15	196	1957	8	16	2089	73
RTOR Reduction (vph)	0	0	214	0	14	0	0	0	2	0	0	19
Lane Group Flow (vph)	150	150	26	7	22	0	196	1957	6	16	2089	54
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	12.8	12.8	12.8	6.0	6.0		15.3	79.5	79.5	2.0	66.2	66.2
Effective Green, g (s)	12.8	12.8	12.8	6.0	6.0		15.3	79.5	79.5	2.0	66.2	66.2
Actuated g/C Ratio	0.11	0.11	0.11	0.05	0.05		0.13	0.66	0.66	0.02	0.55	0.55
Clearance Time (s)	6.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	3.8	3.8	3.8	2.5	2.5		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	179	182	169	89	87		226	3369	1049	30	2805	873
v/s Ratio Prot	c0.09	0.09		0.00	c0.01		c0.11	0.38		0.01	c0.41	
v/s Ratio Perm			0.02						0.00			0.03
v/c Ratio	0.84	0.82	0.15	0.08	0.25		0.87	0.58	0.01	0.53	0.74	0.06
Uniform Delay, d1	52.6	52.5	48.7	54.4	54.8		51.4	11.1	6.9	58.5	20.5	12.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.85	1.29	0.56	1.18	0.30	0.26
Incremental Delay, d2	28.3	25.9	0.5	0.3	1.1		23.0	0.6	0.0	7.4	1.0	0.0
Delay (s)	80.9	78.4	49.2	54.6	55.9		66.6	14.9	3.9	76.3	7.3	3.3
Level of Service	F	E	D	D	E		E	B	A	E	A	A
Approach Delay (s)		66.1			55.7			19.6			7.6	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



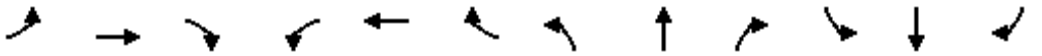
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	197	93	36	97	200	19	1688	139	343	1833	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5070	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5070	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	207	98	38	102	211	20	1777	146	361	1929	39
RTOR Reduction (vph)	0	0	82	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	73	207	16	38	102	211	20	1777	146	361	1967	0
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	7.4	20.2	20.2	3.6	15.6	120.0	2.0	61.2	120.0	16.4	75.6	
Effective Green, g (s)	7.4	20.2	20.2	3.6	15.6	120.0	2.0	61.2	120.0	16.4	75.6	
Actuated g/C Ratio	0.06	0.17	0.17	0.03	0.13	1.00	0.02	0.51	1.00	0.14	0.63	
Clearance Time (s)	4.0	4.9	4.9	4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	4.3		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	109	314	266	53	460	1583	30	2593	1583	469	3194	
v/s Ratio Prot	c0.04	c0.11		0.02	0.03		0.01	c0.35		c0.11	0.39	
v/s Ratio Perm			0.01			0.13			0.09			
v/c Ratio	0.67	0.66	0.06	0.72	0.22	0.13	0.67	0.69	0.09	0.77	0.62	
Uniform Delay, d1	55.1	46.7	41.9	57.7	46.8	0.0	58.7	22.1	0.0	50.0	13.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.36	
Incremental Delay, d2	11.4	7.3	0.2	31.7	0.4	0.2	35.7	0.9	0.1	4.7	0.6	
Delay (s)	66.5	54.0	42.2	89.4	47.1	0.2	94.3	23.0	0.1	61.0	5.5	
Level of Service	E	D	D	F	D	A	F	C	A	E	A	
Approach Delay (s)		53.4			23.5			22.0			14.1	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	3	8	24	3	171	96	922	11	92	1134	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1783	1583	1770	3533		1770	3536	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1783	1583	1770	3533		1770	3536	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	3	8	25	3	180	101	971	12	97	1194	7
RTOR Reduction (vph)	0	0	8	0	0	143	0	0	0	0	1	0
Lane Group Flow (vph)	0	26	0	0	28	37	101	983	0	97	1200	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		3.4	3.4		15.7	15.7	7.3	37.7		6.2	36.6	
Effective Green, g (s)		4.4	4.4		16.7	16.7	8.3	40.7		7.2	39.6	
Actuated g/C Ratio		0.05	0.05		0.21	0.21	0.10	0.50		0.09	0.49	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		97	86		369	328	182	1782		158	1735	
v/s Ratio Prot		c0.01			0.02		0.06	0.28		c0.05	c0.34	
v/s Ratio Perm			0.00			c0.02						
v/c Ratio		0.27	0.01		0.08	0.11	0.55	0.55		0.61	0.69	
Uniform Delay, d1		36.6	36.1		25.8	26.0	34.4	13.7		35.4	15.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		0.0	0.1	2.1	0.5		4.9	1.4	
Delay (s)		37.1	36.1		25.8	26.0	36.5	14.3		40.3	17.2	
Level of Service		D	D		C	C	D	B		D	B	
Approach Delay (s)		36.9			26.0			16.3			19.0	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	11.7
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

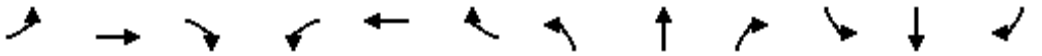


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	515	646	184	508	110	318	587	96	628	730	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1486	1856	3592	1471	3601	3592	1476	3565	5110	1462
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1486	1856	3592	1471	3601	3592	1476	3565	5110	1462
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	542	680	194	535	116	335	618	101	661	768	31
RTOR Reduction (vph)	0	0	38	0	0	78	0	0	69	0	0	22
Lane Group Flow (vph)	34	542	642	194	535	38	335	618	32	661	768	9
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.7	20.8	43.0	10.1	25.2	25.2	22.2	27.7	27.7	19.9	25.4	25.4
Effective Green, g (s)	6.7	23.8	45.0	11.1	28.2	28.2	23.2	30.7	30.7	20.9	28.4	28.4
Actuated g/C Ratio	0.07	0.24	0.46	0.11	0.29	0.29	0.24	0.31	0.31	0.21	0.29	0.29
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	127	873	683	210	1035	424	853	1126	463	761	1482	424
v/s Ratio Prot	0.02	0.15	c0.22	c0.10	0.15		0.09	c0.17		0.19	0.15	
v/s Ratio Perm			0.21			0.03			0.02			0.01
v/c Ratio	0.27	0.62	0.94	0.92	0.52	0.09	0.39	0.55	0.07	0.87	0.52	0.02
Uniform Delay, d1	43.3	33.0	25.2	43.0	29.2	25.5	31.4	27.9	23.6	37.2	29.0	24.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.8	20.4	40.7	0.7	0.2	0.1	0.8	0.1	10.0	0.5	0.0
Delay (s)	43.7	34.8	45.6	83.7	29.9	25.6	31.5	28.7	23.7	47.2	29.5	24.9
Level of Service	D	C	D	F	C	C	C	C	C	D	C	C
Approach Delay (s)		40.9			41.6			29.1			37.4	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	37.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	97.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1278	89	108	889	62	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	3.0	1.3	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1345	94	114	936	65	25
RTOR Reduction (vph)	0	42	0	0	0	21
Lane Group Flow (vph)	1345	52	114	936	65	4
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	31.1	31.1	6.0	42.8	7.2	7.2
Effective Green, g (s)	33.8	32.1	7.0	45.5	8.2	8.2
Actuated g/C Ratio	0.58	0.55	0.12	0.78	0.14	0.14
Clearance Time (s)	5.7	5.7	4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2062	876	214	2776	250	224
v/s Ratio Prot	c0.38		c0.06	0.26	c0.04	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.65	0.06	0.53	0.34	0.26	0.02
Uniform Delay, d1	8.1	6.0	24.0	1.8	22.2	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	1.3	0.1	0.2	0.0
Delay (s)	9.1	6.0	25.2	2.0	22.4	21.4
Level of Service	A	A	C	A	C	C
Approach Delay (s)	8.9			4.5	22.1	
Approach LOS	A			A	C	

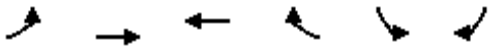
Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	127	474	686	57	207	86	658	1090	59	194	1786	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	134	499	722	60	218	91	693	1147	62	204	1880	94
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	134	499	722	60	218	91	693	1147	62	204	1880	94
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.0	26.2	130.0	8.0	25.6	130.0	29.6	64.1	130.0	12.0	46.5	130.0
Effective Green, g (s)	10.0	28.9	130.0	9.0	28.3	130.0	30.6	67.1	130.0	13.0	49.5	130.0
Actuated g/C Ratio	0.08	0.22	1.00	0.07	0.22	1.00	0.24	0.52	1.00	0.10	0.38	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	264	787	1562	238	770	1562	808	2625	1562	343	1936	1562
v/s Ratio Prot	0.04	c0.14		0.02	0.06		c0.20	0.23		0.06	c0.37	
v/s Ratio Perm			c0.46			0.06			0.04			0.06
v/c Ratio	0.51	0.63	0.46	0.25	0.28	0.06	0.86	0.44	0.04	0.59	0.97	0.06
Uniform Delay, d1	57.6	45.8	0.0	57.3	42.4	0.0	47.6	19.6	0.0	56.0	39.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	2.1	1.0	0.2	0.4	0.1	8.6	0.5	0.0	1.8	14.3	0.1
Delay (s)	58.2	47.9	1.0	57.5	42.7	0.1	56.2	20.2	0.0	57.8	53.8	0.1
Level of Service	E	D	A	E	D	A	E	C	A	E	D	A
Approach Delay (s)		23.9			34.6			32.7			51.9	
Approach LOS		C			C			C			D	

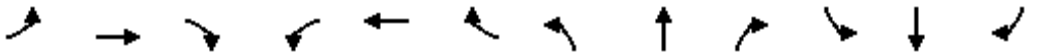
Intersection Summary			
HCM Average Control Delay	38.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	73	688	987	497	320	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1510	1736	1534
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1510	1736	1534
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	724	1039	523	337	138
RTOR Reduction (vph)	0	0	0	252	0	16
Lane Group Flow (vph)	77	724	1039	271	337	122
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	3.4	29.4	34.0	34.0	17.8	21.2
Effective Green, g (s)	4.4	31.4	36.0	36.0	20.8	27.2
Actuated g/C Ratio	0.06	0.45	0.52	0.52	0.30	0.39
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	110	1568	1798	782	520	600
v/s Ratio Prot	c0.04	0.21	c0.30		c0.19	0.02
v/s Ratio Perm				0.18		0.06
v/c Ratio	0.70	0.46	0.58	0.35	0.65	0.20
Uniform Delay, d1	31.9	13.2	11.5	9.8	21.2	14.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.5	0.2	0.5	0.3	2.1	0.1
Delay (s)	46.4	13.4	12.0	10.1	23.3	14.0
Level of Service	D	B	B	B	C	B
Approach Delay (s)		16.6	11.4		20.6	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	8.3
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	633	17	9	1199	334	24	1	11	85	4	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3426		1787	3438	1479	1787	1621			1695	1470
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3426		1787	3438	1479	1787	1621			1695	1470
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	127	666	18	9	1262	352	25	1	12	89	4	308
RTOR Reduction (vph)	0	2	0	0	0	197	0	11	0	0	0	0
Lane Group Flow (vph)	127	682	0	9	1262	155	25	2	0	0	93	308
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	6.1	40.2		0.5	34.6	34.6	6.3	6.3			18.4	18.4
Effective Green, g (s)	7.1	42.2		1.5	36.6	36.6	7.3	7.3			19.4	19.4
Actuated g/C Ratio	0.09	0.51		0.02	0.44	0.44	0.09	0.09			0.23	0.23
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	147	1740		32	1514	651	157	142			396	343
v/s Ratio Prot	c0.07	0.20		0.01	c0.37		c0.01	0.00			0.05	
v/s Ratio Perm						0.10						c0.21
v/c Ratio	0.86	0.39		0.28	0.83	0.24	0.16	0.01			0.23	0.90
Uniform Delay, d1	37.5	12.6		40.3	20.6	14.5	35.1	34.6			25.8	30.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	36.5	0.1		1.8	4.1	0.2	0.2	0.0			0.3	24.7
Delay (s)	74.0	12.7		42.0	24.7	14.7	35.2	34.6			26.1	55.6
Level of Service	E	B		D	C	B	D	C			C	E
Approach Delay (s)		22.3			22.6			35.0			48.8	
Approach LOS		C			C			D			D	

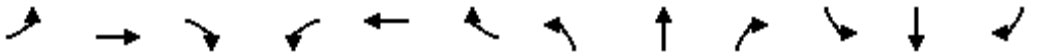
Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	12.7
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	727	273	258	1476	106	678
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1562	1770	3539	1770	1575
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1562	1770	3539	1770	1575
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	765	287	272	1554	112	714
RTOR Reduction (vph)	0	150	0	0	0	12
Lane Group Flow (vph)	765	137	272	1554	112	702
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	24.0	33.7	27.3	55.3	9.7	37.0
Effective Green, g (s)	26.0	35.7	28.3	57.3	10.7	39.0
Actuated g/C Ratio	0.35	0.48	0.38	0.76	0.14	0.52
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1227	806	668	2704	253	882
v/s Ratio Prot	c0.22	0.02	0.15	0.44	0.06	c0.30
v/s Ratio Perm		0.06				0.15
v/c Ratio	0.62	0.17	0.41	0.57	0.44	0.80
Uniform Delay, d1	20.4	11.2	17.2	3.7	29.4	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0	0.1	0.9	0.5	4.7
Delay (s)	21.4	11.2	17.3	4.6	29.9	19.4
Level of Service	C	B	B	A	C	B
Approach Delay (s)	18.6			6.5	20.9	
Approach LOS	B			A	C	

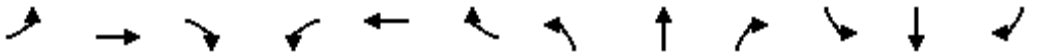
Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



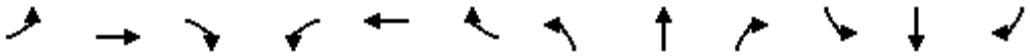
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	487	305	18	122	312	94	1	1497	10	100	1452	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.5	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	513	321	19	128	328	99	1	1576	11	105	1528	317
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	513	321	19	128	328	99	1	1576	11	105	1528	317
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	21.3	24.4	120.0	12.2	15.0	120.0	0.6	53.3	120.0	10.7	63.4	120.0
Effective Green, g (s)	22.3	26.9	120.0	13.2	17.5	120.0	1.6	55.8	120.0	11.7	65.9	120.0
Actuated g/C Ratio	0.19	0.22	1.00	0.11	0.15	1.00	0.01	0.46	1.00	0.10	0.55	1.00
Clearance Time (s)	4.0	5.7		4.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.3		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	638	793	1583	195	516	1583	24	2365	1583	173	2793	1583
v/s Ratio Prot	c0.15	0.09		0.07	c0.09		0.00	c0.31		c0.06	0.30	
v/s Ratio Perm			0.01			0.06			0.01			0.20
v/c Ratio	0.80	0.40	0.01	0.66	0.64	0.06	0.04	0.67	0.01	0.61	0.55	0.20
Uniform Delay, d1	46.8	39.7	0.0	51.2	48.2	0.0	58.4	24.9	0.0	51.9	17.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	0.5	0.0	5.9	2.8	0.1	0.3	1.5	0.0	4.1	0.8	0.3
Delay (s)	53.6	40.3	0.0	57.2	51.1	0.1	58.7	26.4	0.0	56.0	18.2	0.3
Level of Service	D	D	A	E	D	A	E	C	A	E	B	A
Approach Delay (s)		47.4			43.4			26.2			17.3	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.7
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



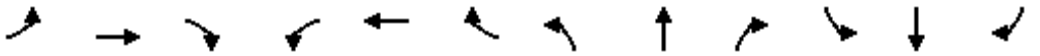
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	261	268	50	188	127	231	1408	90	109	1531	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	275	282	53	198	134	243	1482	95	115	1612	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	54	275	282	53	198	134	243	1482	95	115	1612	78
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.1	14.7	120.0	6.1	14.7	120.0	20.2	67.2	120.0	11.9	58.9	120.0
Effective Green, g (s)	7.1	17.2	120.0	7.1	17.2	120.0	21.2	69.7	120.0	12.9	61.4	120.0
Actuated g/C Ratio	0.06	0.14	1.00	0.06	0.14	1.00	0.18	0.58	1.00	0.11	0.51	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	105	507	1583	105	507	1583	313	2954	1583	190	2602	1583
v/s Ratio Prot	c0.03	c0.08		0.03	0.06		c0.14	0.29		0.06	c0.32	
v/s Ratio Perm			0.18			0.08			0.06			0.05
v/c Ratio	0.51	0.54	0.18	0.50	0.39	0.08	0.78	0.50	0.06	0.61	0.62	0.05
Uniform Delay, d1	54.8	47.7	0.0	54.7	46.6	0.0	47.1	14.9	0.0	51.1	20.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	1.3	0.2	1.4	0.7	0.1	10.5	0.6	0.1	3.7	0.5	0.1
Delay (s)	56.5	49.1	0.2	56.1	47.3	0.1	57.6	15.5	0.1	54.8	21.5	0.1
Level of Service	E	D	A	E	D	A	E	B	A	D	C	A
Approach Delay (s)		27.2			32.1			20.3			22.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.1
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



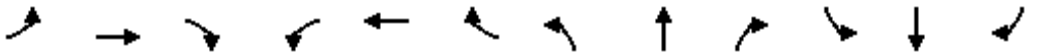
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	0	0	14	2	45	7	842	11	51	1213	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0				3.0	3.0	2.0	4.7		3.0	4.7	
Lane Util. Factor	1.00				1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00				1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770				1784	1583	1770	3532		1770	3534	
Flt Permitted	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770				1784	1583	1770	3532		1770	3534	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	0	0	15	2	47	7	886	12	54	1277	12
RTOR Reduction (vph)	0	0	0	0	0	42	0	1	0	0	0	0
Lane Group Flow (vph)	18	0	0	0	17	5	7	897	0	54	1289	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						4						
Actuated Green, G (s)	1.3				6.5	6.5	0.9	34.9		3.7	38.7	
Effective Green, g (s)	2.3				7.5	7.5	1.9	35.9		4.7	39.7	
Actuated g/C Ratio	0.04				0.12	0.12	0.03	0.56		0.07	0.62	
Clearance Time (s)	4.0				4.0	4.0	3.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0				2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	64				209	185	52	1978		130	2189	
v/s Ratio Prot	c0.01				c0.01		0.00	0.25		c0.03	c0.36	
v/s Ratio Perm						0.00						
v/c Ratio	0.28				0.08	0.03	0.13	0.45		0.42	0.59	
Uniform Delay, d1	30.1				25.2	25.1	30.3	8.3		28.4	7.3	
Progression Factor	1.00				1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9				0.1	0.0	0.4	0.3		0.8	0.6	
Delay (s)	31.0				25.3	25.1	30.7	8.6		29.2	7.9	
Level of Service	C				C	C	C	A		C	A	
Approach Delay (s)		31.0			25.2			8.8			8.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



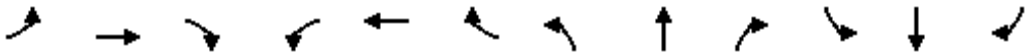
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	1143	51	50	749	8	40	2	27	12	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.97	1.00
Satd. Flow (prot)	1770	3516		1770	3539	1583		1778	1583		1807	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.97	1.00
Satd. Flow (perm)	1770	3516		1770	3539	1583		1778	1583		1807	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	1203	54	53	788	8	42	2	28	13	8	3
RTOR Reduction (vph)	0	3	0	0	0	3	0	0	25	0	0	3
Lane Group Flow (vph)	45	1254	0	53	788	5	0	44	3	0	21	0
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	1.9	36.0		2.7	36.8	36.8		5.9	5.9		4.7	4.7
Effective Green, g (s)	2.9	39.0		3.7	39.8	37.8		6.9	6.9		5.7	5.7
Actuated g/C Ratio	0.04	0.58		0.06	0.59	0.56		0.10	0.10		0.09	0.09
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	77	2047		98	2102	893		183	163		154	135
v/s Ratio Prot	0.03	c0.36		c0.03	0.22			c0.02			c0.01	
v/s Ratio Perm						0.00			0.00			0.00
v/c Ratio	0.58	0.61		0.54	0.37	0.01		0.24	0.02		0.14	0.00
Uniform Delay, d1	31.5	9.1		30.8	7.1	6.4		27.6	27.0		28.4	28.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	7.1	1.0		3.2	0.4	0.0		0.2	0.0		0.1	0.0
Delay (s)	38.6	10.1		34.1	7.5	6.4		27.9	27.0		28.5	28.0
Level of Service	D	B		C	A	A		C	C		C	C
Approach Delay (s)		11.1			9.1			27.6			28.5	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



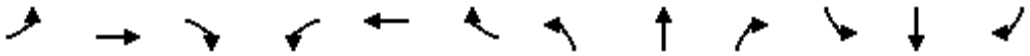
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	656	450	78	474	240	136	1164	37	287	1475	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	142	691	474	82	499	253	143	1225	39	302	1553	209
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	142	691	474	82	499	253	143	1225	39	302	1553	209
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.3	29.5	120.0	8.0	23.2	120.0	9.0	47.3	120.0	15.8	54.1	120.0
Effective Green, g (s)	15.3	32.0	120.0	9.0	25.7	120.0	10.0	50.3	120.0	16.8	57.1	120.0
Actuated g/C Ratio	0.13	0.27	1.00	0.08	0.21	1.00	0.08	0.42	1.00	0.14	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	226	944	1583	257	758	1583	286	2131	1583	481	2420	1583
v/s Ratio Prot	c0.08	c0.20		0.02	0.14		0.04	c0.24		0.09	c0.31	
v/s Ratio Perm			0.30			0.16			0.02			0.13
v/c Ratio	0.63	0.73	0.30	0.32	0.66	0.16	0.50	0.57	0.02	0.63	0.64	0.13
Uniform Delay, d1	49.7	40.1	0.0	52.6	43.1	0.0	52.6	26.7	0.0	48.7	23.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	3.0	0.5	0.7	2.1	0.2	1.4	0.4	0.0	2.6	1.3	0.2
Delay (s)	55.0	43.1	0.5	53.3	45.2	0.2	54.0	27.0	0.0	51.2	25.1	0.2
Level of Service	E	D	A	D	D	A	D	C	A	D	C	A
Approach Delay (s)		28.9			32.4			29.0			26.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	481	0	0	613	398	2	2	0	515	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0		3.0	3.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		0.95	0.95	
Frt		1.00			1.00	0.85		1.00		1.00	0.99	
Flt Protected		1.00			1.00	1.00		0.98		0.95	0.96	
Satd. Flow (prot)		3539			1863	1583		1817		1681	1671	
Flt Permitted		0.95			1.00	1.00		1.00		0.95	0.96	
Satd. Flow (perm)		3378			1863	1583		1863		1681	1671	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	506	0	0	645	419	2	2	0	542	0	24
RTOR Reduction (vph)	0	0	0	0	0	40	0	0	0	0	3	0
Lane Group Flow (vph)	0	507	0	0	645	379	0	4	0	282	281	0
Turn Type	Perm					pt+ov	Perm			Split		
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases	2						3					
Actuated Green, G (s)		89.2			84.6	116.6		0.8		27.1	27.1	
Effective Green, g (s)		90.2			85.6	117.6		1.8		28.1	28.1	
Actuated g/C Ratio		0.69			0.66	0.90		0.01		0.22	0.22	
Clearance Time (s)		4.9			4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1			3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		2344			1227	1432		26		363	361	
v/s Ratio Prot					c0.35	0.24				0.17	c0.17	
v/s Ratio Perm		c0.15						c0.00				
v/c Ratio		0.22			0.53	0.26		0.15		0.78	0.78	
Uniform Delay, d1		7.2			11.6	0.8		63.3		48.0	48.0	
Progression Factor		1.00			0.88	0.07		1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.4	0.1		1.0		9.2	9.3	
Delay (s)		7.4			10.6	0.1		64.4		57.2	57.3	
Level of Service		A			B	A		E		E	E	
Approach Delay (s)		7.4			6.5			64.4			57.2	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

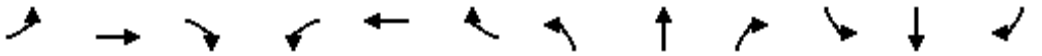


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	992	24	18	969	0	45	0	45	73	11	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9		2.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		1.00	1.00	
Frt		1.00		1.00	1.00			0.93		1.00	0.89	
Flt Protected		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3527		1770	3539			1695		1770	1660	
Flt Permitted		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3527		1770	3539			1695		1770	1660	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1044	25	19	1020	0	47	0	47	77	12	32
RTOR Reduction (vph)	0	2	0	0	0	0	0	42	0	0	28	0
Lane Group Flow (vph)	0	1067	0	19	1020	0	0	52	0	77	16	0
Turn Type				Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)		33.8		1.6	38.4			6.4		7.3	7.3	
Effective Green, g (s)		34.8		2.6	39.4			7.4		8.3	8.3	
Actuated g/C Ratio		0.54		0.04	0.61			0.11		0.13	0.13	
Clearance Time (s)		4.9		3.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1		2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1888		71	2145			193		226	212	
v/s Ratio Prot		c0.30		0.01	c0.29			c0.03		c0.04	0.01	
v/s Ratio Perm												
v/c Ratio		0.57		0.27	0.48			0.27		0.34	0.08	
Uniform Delay, d1		10.1		30.3	7.1			26.3		25.9	25.0	
Progression Factor		0.91		1.26	0.77			1.00		1.00	1.00	
Incremental Delay, d2		0.4		0.7	0.8			0.3		0.3	0.1	
Delay (s)		9.5		39.0	6.2			26.6		26.2	25.0	
Level of Service		A		D	A			C		C	C	
Approach Delay (s)		9.5			6.8			26.6			25.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

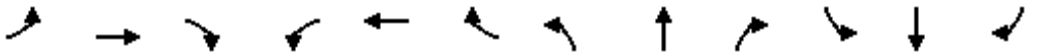
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1075	46	161	551	33	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		2.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3518		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3518		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1132	48	169	580	35	179
RTOR Reduction (vph)	4	0	0	0	0	159
Lane Group Flow (vph)	1176	0	169	580	35	20
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	37.3		9.7	50.0	6.1	6.1
Effective Green, g (s)	38.3		10.7	51.0	7.1	7.1
Actuated g/C Ratio	0.59		0.16	0.78	0.11	0.11
Clearance Time (s)	4.9		3.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	2073		291	2777	193	173
v/s Ratio Prot	c0.33		c0.10	0.16	c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.57		0.58	0.21	0.18	0.11
Uniform Delay, d1	8.2		25.1	1.8	26.3	26.1
Progression Factor	0.49		1.18	1.45	1.00	1.00
Incremental Delay, d2	0.3		1.4	0.1	0.2	0.1
Delay (s)	4.4		31.0	2.7	26.5	26.2
Level of Service	A		C	A	C	C
Approach Delay (s)	4.4			9.1	26.3	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



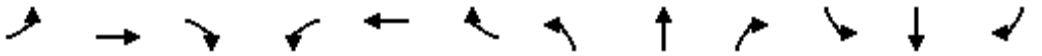
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	1154	4	13	1320	102	5	2	12	514	4	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3537		1770	3501			1678		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3537		1770	3501			1678		1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	1215	4	14	1389	107	5	2	13	541	4	93
RTOR Reduction (vph)	0	0	0	0	4	0	0	13	0	0	0	35
Lane Group Flow (vph)	104	1219	0	14	1492	0	0	7	0	270	275	58
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	10.6	83.3		1.6	74.3			2.4		25.2	25.2	25.2
Effective Green, g (s)	11.6	84.3		2.6	75.3			3.4		26.2	26.2	26.2
Actuated g/C Ratio	0.09	0.65		0.02	0.58			0.03		0.20	0.20	0.20
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	158	2294		35	2028			44		339	340	319
v/s Ratio Prot	c0.06	0.34		0.01	c0.43			c0.00		0.16	c0.16	
v/s Ratio Perm												0.04
v/c Ratio	0.66	0.53		0.40	0.74			0.17		0.80	0.81	0.18
Uniform Delay, d1	57.3	12.3		62.9	20.1			61.9		49.4	49.5	43.0
Progression Factor	0.92	0.76		0.58	0.65			1.00		1.00	1.00	1.00
Incremental Delay, d2	6.2	0.7		1.2	0.7			0.7		11.8	12.9	0.2
Delay (s)	58.9	10.1		37.5	13.7			62.6		61.2	62.4	43.2
Level of Service	E	B		D	B			E		E	E	D
Approach Delay (s)		13.9			13.9			62.6			59.1	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



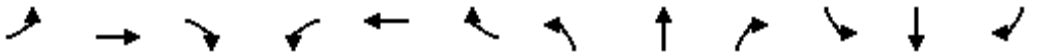
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	372	1319	18	109	1077	586	49	59	114	988	12	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	392	1388	19	115	1134	617	52	62	120	1040	13	344
RTOR Reduction (vph)	0	1	0	0	0	200	0	0	95	0	0	200
Lane Group Flow (vph)	392	1406	0	115	1134	417	52	62	25	530	523	144
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	27.0	60.1		9.0	42.1	42.1	5.0	5.0	5.0	38.1	38.1	38.1
Effective Green, g (s)	27.0	60.1		9.0	42.1	42.1	5.0	5.0	5.0	38.1	38.1	38.1
Actuated g/C Ratio	0.21	0.46		0.07	0.32	0.32	0.04	0.04	0.04	0.29	0.29	0.29
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.3		2.0	3.5	3.5	2.0	2.0	2.0	2.3	2.3	2.3
Lane Grp Cap (vph)	368	1633		123	1146	513	68	72	61	493	494	464
v/s Ratio Prot	c0.22	0.40		0.06	c0.32		0.03	c0.03		c0.32	0.31	
v/s Ratio Perm						0.26			0.02			0.09
v/c Ratio	1.07	0.86		0.93	0.99	0.81	0.76	0.86	0.41	1.08	1.06	0.31
Uniform Delay, d1	51.5	31.2		60.2	43.7	40.3	61.9	62.2	61.1	46.0	46.0	35.7
Progression Factor	0.91	1.08		0.57	0.39	0.56	1.00	1.00	1.00	0.75	0.75	0.80
Incremental Delay, d2	61.5	5.3		11.8	5.8	1.0	36.0	59.4	1.6	57.3	52.0	0.2
Delay (s)	108.3	39.1		46.1	22.8	23.4	97.9	121.6	62.7	91.8	86.4	28.6
Level of Service	F	D		D	C	C	F	F	E	F	F	C
Approach Delay (s)		54.2			24.5			86.1			74.2	
Approach LOS		D			C			F			E	

Intersection Summary			
HCM Average Control Delay	50.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



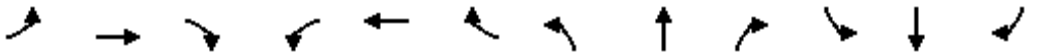
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1101	768	0	1603	1413	0	0	0	232	805	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.9		2.9	3.9				3.7	4.3	3.7
Lane Util. Factor		0.95	1.00		0.91	0.91				0.95	*0.90	1.00
Frt		1.00	0.85		0.96	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3539	1583		3270	1441				1681	1674	1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3539	1583		3270	1441				1681	1674	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1159	808	0	1687	1487	0	0	0	244	847	169
RTOR Reduction (vph)	0	0	0	0	21	425	0	0	0	0	0	0
Lane Group Flow (vph)	0	1159	808	0	2186	542	0	0	0	220	871	169
Turn Type			Perm			Perm				custom		custom
Protected Phases		2			6					4	4	4
Permitted Phases			2			6				4		6
Actuated Green, G (s)		68.1	68.1		68.1	68.1				51.7	51.7	119.8
Effective Green, g (s)		69.7	69.1		70.1	69.1				53.3	52.7	123.0
Actuated g/C Ratio		0.54	0.53		0.54	0.53				0.41	0.41	0.95
Clearance Time (s)		4.9	4.9		4.9	4.9				5.3	5.3	5.3
Vehicle Extension (s)		3.8	3.8		3.8	3.8				2.0	2.0	2.0
Lane Grp Cap (vph)		1897	841		1763	766				689	679	1543
v/s Ratio Prot		0.33			c0.67					0.13	c0.52	0.04
v/s Ratio Perm			0.51			0.38						0.06
v/c Ratio		0.61	0.96		1.24	0.71				0.32	1.28	0.11
Uniform Delay, d1		20.8	29.2		30.0	22.9				26.0	38.6	0.2
Progression Factor		0.60	0.66		0.77	1.30				1.00	1.00	1.00
Incremental Delay, d2		0.5	11.0		110.9	1.8				0.1	138.3	0.0
Delay (s)		12.9	30.1		134.1	31.5				26.1	177.0	0.2
Level of Service		B	C		F	C				C	F	A
Approach Delay (s)		20.0			102.8			0.0			126.9	
Approach LOS		B			F			A			F	

Intersection Summary			
HCM Average Control Delay	82.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



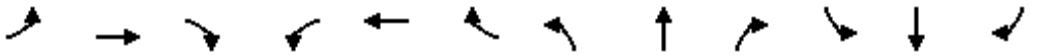
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	282	1051	0	0	2538	538	0	0	1185	0	0	477
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.9			3.0			2.0
Lane Util. Factor	1.00	0.86			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			4791	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			4791	1362			1611			2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	297	1106	0	0	2672	566	0	0	1247	0	0	502
RTOR Reduction (vph)	0	0	0	0	3	70	0	0	0	0	0	6
Lane Group Flow (vph)	297	1106	0	0	2726	439	0	0	1247	0	0	496
Turn Type	Prot					Perm			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						6			Free			
Actuated Green, G (s)	13.1	65.0			43.0	43.0			65.0			13.1
Effective Green, g (s)	15.1	65.0			45.0	45.0			65.0			15.1
Actuated g/C Ratio	0.23	1.00			0.69	0.69			1.00			0.23
Clearance Time (s)	4.0	4.9			4.9	4.9						4.0
Vehicle Extension (s)	2.0	3.9			3.8	3.8						2.0
Lane Grp Cap (vph)	411	6408			3317	943			1611			647
v/s Ratio Prot	0.17	0.17			0.57							0.18
v/s Ratio Perm						0.32			c0.77			
v/c Ratio	0.72	0.17			0.82	0.47			0.77			0.77
Uniform Delay, d1	23.0	0.0			7.1	4.5			0.0			23.3
Progression Factor	1.64	1.00			0.92	0.99			1.00			1.00
Incremental Delay, d2	4.4	0.0			0.9	0.6			3.7			4.9
Delay (s)	42.2	0.0			7.4	5.1			3.7			28.2
Level of Service	D	A			A	A			A			C
Approach Delay (s)		8.9			7.1			3.7			28.2	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	337	1764	455	415	1766	209	338	936	253	228	925	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	3.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	4.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1538
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	355	1857	479	437	1859	220	356	985	266	240	974	66
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	53
Lane Group Flow (vph)	355	1857	479	437	1859	220	356	985	266	240	974	13
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			4
Actuated Green, G (s)	14.5	46.0	120.0	17.0	50.5	120.0	13.0	25.3	120.0	10.0	22.3	22.3
Effective Green, g (s)	15.5	49.0	120.0	18.0	53.5	120.0	14.0	28.3	120.0	11.0	25.3	23.3
Actuated g/C Ratio	0.13	0.41	1.00	0.15	0.45	1.00	0.12	0.24	1.00	0.09	0.21	0.19
Clearance Time (s)	4.0	6.0		6.0	6.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.1		2.0	3.3		2.0	4.2		2.0	4.5	4.5
Lane Grp Cap (vph)	429	2076	1560	498	2267	1560	387	1199	1560	304	1072	299
v/s Ratio Prot	0.11	c0.37		0.13	c0.37		c0.11	0.19		0.07	c0.19	
v/s Ratio Perm			c0.31			0.14			0.17			0.01
v/c Ratio	0.83	0.89	0.31	0.88	0.82	0.14	0.92	0.82	0.17	0.79	0.91	0.04
Uniform Delay, d1	50.9	33.1	0.0	49.9	29.0	0.0	52.4	43.5	0.0	53.4	46.2	39.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.8	6.5	0.5	15.5	2.5	0.2	26.0	5.0	0.2	11.8	11.5	0.1
Delay (s)	62.8	39.6	0.5	65.4	31.6	0.2	78.4	48.4	0.2	65.2	57.7	39.4
Level of Service	E	D	A	E	C	A	E	D	A	E	E	D
Approach Delay (s)		35.7			34.7			47.1			58.2	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM Average Control Delay	41.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

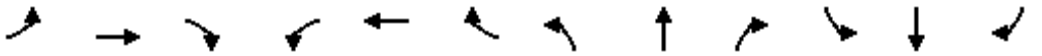


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	1612	135	275	1503	4	21	2	437	7	5	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (prot)	1762	3603		1711	3538			1781	1583		1810	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (perm)	1762	3603		1711	3538			1781	1583		1810	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	1697	142	289	1582	4	22	2	460	7	5	8
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	49	0	0	8
Lane Group Flow (vph)	54	1834	0	289	1586	0	0	24	411	0	12	0
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	6.5	66.6		26.8	88.6			5.6	32.4		1.6	1.6
Effective Green, g (s)	7.5	69.1		27.8	91.1			7.1	35.4		3.1	3.1
Actuated g/C Ratio	0.06	0.58		0.23	0.76			0.06	0.29		0.03	0.03
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	110	2075		396	2686			105	500		47	38
v/s Ratio Prot	0.03	c0.51		0.17	0.45			0.01	c0.19		c0.01	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.49	0.88		0.73	0.59			0.23	0.82		0.26	0.01
Uniform Delay, d1	54.4	22.0		42.6	6.3			53.8	39.4		57.3	56.9
Progression Factor	1.00	1.00		1.16	0.71			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	5.0		4.6	0.8			0.4	10.0		1.0	0.0
Delay (s)	55.7	27.0		54.2	5.2			54.2	49.3		58.4	57.0
Level of Service	E	C		D	A			D	D		E	E
Approach Delay (s)		27.8			12.8			49.6			57.8	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

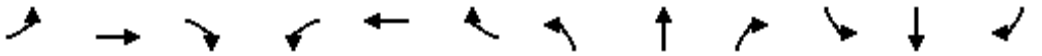
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1575	424	81	1643	131	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3427		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3427		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1658	446	85	1729	138	33
RTOR Reduction (vph)	20	0	0	0	0	29
Lane Group Flow (vph)	2084	0	85	1729	138	4
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	80.9		8.0	92.9	12.8	12.8
Effective Green, g (s)	82.9		10.0	94.9	14.8	14.8
Actuated g/C Ratio	0.69		0.08	0.79	0.12	0.12
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2367		148	2799	218	195
v/s Ratio Prot	c0.61		0.05	c0.49	c0.08	
v/s Ratio Perm						0.00
v/c Ratio	0.88		0.57	0.62	0.63	0.02
Uniform Delay, d1	14.6		53.0	5.1	50.0	46.2
Progression Factor	0.44		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4		3.3	1.0	5.2	0.0
Delay (s)	8.7		56.3	6.2	55.2	46.3
Level of Service	A		E	A	E	D
Approach Delay (s)	8.7			8.5	53.5	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	376	719	552	550	740	61	735	1212	157	210	1499	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3493		3433	3539	1549	3433	5085	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3493		3433	3539	1549	3433	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	396	757	581	579	779	64	774	1276	165	221	1578	217
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	53	0	0	81
Lane Group Flow (vph)	396	757	581	579	839	0	774	1276	112	221	1578	136
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	17.0	30.4	150.0	23.0	36.8		31.0	66.2	66.2	11.0	46.6	46.6
Effective Green, g (s)	18.0	31.9	150.0	24.0	38.3		32.0	67.7	67.2	12.0	48.1	47.6
Actuated g/C Ratio	0.12	0.21	1.00	0.16	0.26		0.21	0.45	0.45	0.08	0.32	0.32
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	412	753	1561	549	892		732	1597	694	275	1631	491
v/s Ratio Prot	0.12	c0.21		c0.17	0.24		c0.23	0.36		0.06	c0.31	
v/s Ratio Perm			0.37						0.07			0.09
v/c Ratio	0.96	1.01	0.37	1.05	0.94		1.06	0.80	0.16	0.80	0.97	0.28
Uniform Delay, d1	65.7	59.0	0.0	63.0	54.7		59.0	35.3	24.6	67.8	50.2	38.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.98	0.64	0.56	1.00	1.00	1.00
Incremental Delay, d2	34.0	34.1	0.7	53.6	17.7		44.9	3.2	0.4	14.7	15.2	0.4
Delay (s)	99.7	93.2	0.7	116.6	72.4		102.8	25.7	14.1	82.5	65.4	38.7
Level of Service	F	F	A	F	E		F	C	B	F	E	D
Approach Delay (s)		63.7			90.4			51.8			64.4	
Approach LOS		E			F			D			E	

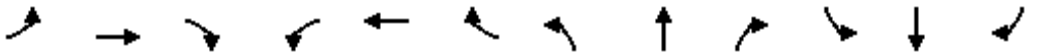
Intersection Summary			
HCM Average Control Delay	65.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	1081	10	124	1190	10	11	11	39	15	261	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		1.00	1.00
Satd. Flow (prot)	1770	3533		1770	3534			1817	1551		1858	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00		1.00	1.00
Satd. Flow (perm)	1770	3533		1770	3534			1817	1551		1858	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	1138	11	131	1253	11	12	12	41	16	275	222
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	38	0	0	182
Lane Group Flow (vph)	61	1148	0	131	1264	0	0	24	3	0	291	40
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	5.5	41.8		9.9	46.2			5.6	5.6		15.4	15.4
Effective Green, g (s)	6.5	43.8		10.9	48.2			6.6	6.6		16.4	16.4
Actuated g/C Ratio	0.07	0.49		0.12	0.54			0.07	0.07		0.18	0.18
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	128	1719		214	1893			133	114		339	288
v/s Ratio Prot	0.03	0.33		c0.07	c0.36			c0.01			c0.16	
v/s Ratio Perm									0.00			0.03
v/c Ratio	0.48	0.67		0.61	0.67			0.18	0.03		0.86	0.14
Uniform Delay, d1	40.1	17.6		37.5	15.1			39.2	38.7		35.7	30.9
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	2.1		3.6	1.2			0.2	0.0		18.3	0.1
Delay (s)	41.1	19.7		41.2	16.3			39.4	38.8		53.9	31.0
Level of Service	D	B		D	B			D	D		D	C
Approach Delay (s)		20.7			18.6			39.0			44.0	
Approach LOS		C			B			D			D	

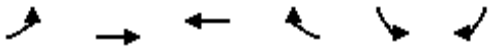
Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



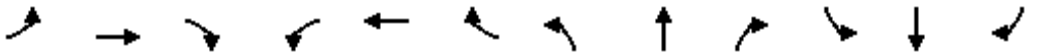
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	1077	0	15	1356	13	12	0	5	31	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.8		2.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3534			1730			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.75	1.00
Satd. Flow (perm)	1770	3539		1770	3534			1460			1389	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	1134	0	16	1427	14	13	0	5	33	0	26
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	0	24
Lane Group Flow (vph)	33	1134	0	16	1441	0	0	13	0	0	33	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	3.6	69.5		1.0	66.9			7.2			7.2	7.2
Effective Green, g (s)	4.6	72.0		2.0	69.4			8.2			8.2	8.2
Actuated g/C Ratio	0.05	0.80		0.02	0.77			0.09			0.09	0.09
Clearance Time (s)	3.0	5.3		3.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	90	2831		39	2725			133			127	144
v/s Ratio Prot	c0.02	0.32		c0.01	c0.41							
v/s Ratio Perm								0.01			c0.02	0.00
v/c Ratio	0.37	0.40		0.41	0.53			0.10			0.26	0.02
Uniform Delay, d1	41.3	2.6		43.4	4.0			37.5			38.1	37.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.9	0.4		2.5	0.7			0.2			0.8	0.0
Delay (s)	42.2	3.1		46.0	4.7			37.8			38.9	37.3
Level of Service	D	A		D	A			D			D	D
Approach Delay (s)		4.2			5.2			37.8			38.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.8
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	590	395	718	226	800	613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	0.98	1.00		0.95	1.00
Satd. Flow (prot)	1610	3323	3412		3433	1583
Flt Permitted	0.95	0.98	1.00		0.95	1.00
Satd. Flow (perm)	1610	3323	3412		3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	621	416	756	238	842	645
RTOR Reduction (vph)	0	0	34	0	0	17
Lane Group Flow (vph)	342	695	960	0	842	628
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	27.0	27.0	25.7		24.0	51.0
Effective Green, g (s)	29.5	29.5	28.2		25.0	56.0
Actuated g/C Ratio	0.33	0.33	0.31		0.28	0.62
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	528	1089	1069		954	1034
v/s Ratio Prot	c0.21	0.21	c0.28		c0.25	0.20
v/s Ratio Perm						0.20
v/c Ratio	0.65	0.64	0.90		0.88	0.61
Uniform Delay, d1	25.8	25.7	29.5		31.1	10.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.0	2.9	9.8		9.4	0.7
Delay (s)	31.9	28.6	39.4		40.5	11.0
Level of Service	C	C	D		D	B
Approach Delay (s)		29.7	39.4		27.7	
Approach LOS		C	D		C	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.3
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



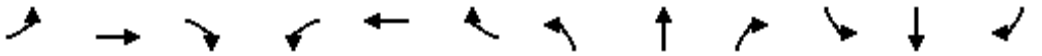
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	796	192	40	626	8	53	3	2	12	6	331
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.97		1.00	1.00			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.97	1.00
Satd. Flow (prot)	1770	3436		1770	3533			1560			1801	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78			0.86	1.00
Satd. Flow (perm)	1770	3436		1770	3533			1273			1601	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	838	202	42	659	8	56	3	2	13	6	348
RTOR Reduction (vph)	0	29	0	0	1	0	0	2	0	0	0	249
Lane Group Flow (vph)	16	1011	0	42	666	0	0	59	0	0	19	99
Parking (#/hr)								4				
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	0.9	20.2		1.9	21.2			10.1			10.1	10.1
Effective Green, g (s)	1.9	22.2		2.9	23.2			11.1			11.1	11.1
Actuated g/C Ratio	0.04	0.49		0.06	0.51			0.24			0.24	0.24
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3		2.0	4.3			2.0			2.0	2.0
Lane Grp Cap (vph)	74	1676		113	1801			311			391	386
v/s Ratio Prot	0.01	c0.29		c0.02	0.19							
v/s Ratio Perm								0.05			0.01	c0.06
v/c Ratio	0.22	0.60		0.37	0.37			0.19			0.05	0.26
Uniform Delay, d1	21.1	8.5		20.4	6.7			13.6			13.2	13.9
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.5	0.8		0.8	0.2			0.1			0.0	0.1
Delay (s)	21.6	9.2		21.2	6.9			13.7			13.2	14.0
Level of Service	C	A		C	A			B			B	B
Approach Delay (s)		9.4			7.8			13.7			14.0	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	9.3
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

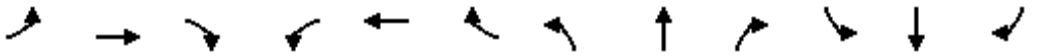
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	471	359	283	304	261	564
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5		2.8	2.5	3.0	2.8
Lane Util. Factor	0.97		1.00	1.00	1.00	1.00
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3286		1863	1583	1770	1863
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	3286		1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	496	378	298	320	275	594
RTOR Reduction (vph)	209	0	0	22	0	0
Lane Group Flow (vph)	665	0	298	298	275	594
Turn Type				pm+ov	Prot	
Protected Phases	8		6	8	5	2
Permitted Phases				6		
Actuated Green, G (s)	15.5		15.5	31.0	8.3	27.8
Effective Green, g (s)	17.0		18.0	34.0	9.3	30.3
Actuated g/C Ratio	0.32		0.34	0.65	0.18	0.58
Clearance Time (s)	4.0		5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0		4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	1062		638	1023	313	1073
v/s Ratio Prot	c0.20		0.16	0.09	c0.16	c0.32
v/s Ratio Perm				0.09		
v/c Ratio	0.63		0.47	0.29	0.88	0.55
Uniform Delay, d1	15.1		13.5	4.1	21.1	6.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		0.9	0.1	22.6	0.9
Delay (s)	15.9		14.4	4.1	43.7	7.8
Level of Service	B		B	A	D	A
Approach Delay (s)	15.9		9.1			19.1
Approach LOS	B		A			B

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	5.5
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



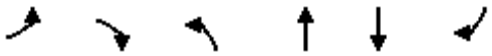
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	7	44	128	9	22	112	487	137	51	844	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	7	46	135	9	23	118	513	144	54	888	69
RTOR Reduction (vph)	0	0	41	0	0	17	0	0	81	0	0	44
Lane Group Flow (vph)	23	7	5	135	9	6	118	513	63	54	888	25
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	6.6	6.6	9.4	15.5	15.5	6.8	27.6	27.6	2.1	22.9	22.9
Effective Green, g (s)	1.5	7.6	7.6	10.4	16.5	16.5	7.8	29.6	28.6	3.1	24.9	23.9
Actuated g/C Ratio	0.02	0.12	0.12	0.16	0.25	0.25	0.12	0.45	0.44	0.05	0.38	0.36
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	40	216	183	280	468	398	210	2291	689	84	1927	576
v/s Ratio Prot	0.01	c0.00		c0.08	0.00		c0.07	0.10		0.03	c0.17	
v/s Ratio Perm			0.00			0.00			0.04			0.02
v/c Ratio	0.57	0.03	0.03	0.48	0.02	0.01	0.56	0.22	0.09	0.64	0.46	0.04
Uniform Delay, d1	31.8	25.8	25.8	25.2	18.5	18.5	27.3	11.0	10.9	30.8	15.3	13.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.4	0.1	0.1	1.3	0.0	0.0	3.4	0.0	0.1	15.6	0.2	0.0
Delay (s)	50.2	25.8	25.8	26.5	18.5	18.5	30.8	11.1	11.0	46.4	15.5	13.5
Level of Service	D	C	C	C	B	B	C	B	B	D	B	B
Approach Delay (s)		33.2			25.0			14.1			17.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	2	24	11	1	28	72	862	28	51	900	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	2	25	12	1	29	76	907	29	54	947	35
RTOR Reduction (vph)	0	0	23	0	0	27	0	0	13	0	0	17
Lane Group Flow (vph)	13	2	2	12	1	2	76	907	16	54	947	18
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	4.3	4.3	0.5	4.4	4.4	2.6	29.7	29.7	1.4	28.5	28.5
Effective Green, g (s)	0.4	4.3	4.3	0.5	4.4	4.4	3.6	31.7	30.7	2.4	30.5	29.5
Actuated g/C Ratio	0.01	0.08	0.08	0.01	0.08	0.08	0.06	0.57	0.55	0.04	0.55	0.53
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	143	122	16	147	125	114	2884	869	76	2774	835
v/s Ratio Prot	c0.01	0.00		0.01	0.00		c0.04	0.18		0.03	c0.19	
v/s Ratio Perm			0.00			c0.00			0.01			0.01
v/c Ratio	1.00	0.01	0.02	0.75	0.01	0.02	0.67	0.31	0.02	0.71	0.34	0.02
Uniform Delay, d1	27.8	23.8	23.8	27.6	23.7	23.8	25.6	6.4	5.7	26.4	7.1	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	249.6	0.0	0.1	106.0	0.0	0.1	13.8	0.1	0.0	26.7	0.1	0.0
Delay (s)	277.4	23.9	23.9	133.6	23.8	23.8	39.3	6.4	5.7	53.1	7.2	6.3
Level of Service	F	C	C	F	C	C	D	A	A	D	A	A
Approach Delay (s)		106.3			55.2			8.9			9.5	
Approach LOS		F			E			A			A	

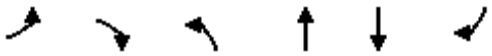
Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	74	50	105	1071	1467	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1562	1770	5085	5085	1548
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1562	1770	5085	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	53	111	1127	1544	184
RTOR Reduction (vph)	0	45	0	0	0	94
Lane Group Flow (vph)	78	8	111	1127	1544	90
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	7.0	7.0	4.2	30.3	22.1	22.1
Effective Green, g (s)	7.0	7.0	4.2	30.3	22.1	22.1
Actuated g/C Ratio	0.15	0.15	0.09	0.67	0.49	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	274	241	164	3401	2481	755
v/s Ratio Prot	c0.04		c0.06	0.22	c0.30	
v/s Ratio Perm		0.01				0.06
v/c Ratio	0.28	0.03	0.68	0.33	0.62	0.12
Uniform Delay, d1	16.9	16.3	19.9	3.2	8.5	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	10.5	0.1	0.5	0.1
Delay (s)	17.5	16.3	30.4	3.2	9.0	6.4
Level of Service	B	B	C	A	A	A
Approach Delay (s)	17.0			5.7	8.7	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

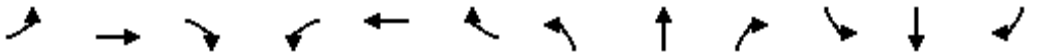
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	18	22	46	1158	1466	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1563	1770	5085	5085	1549
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1563	1770	5085	5085	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	23	48	1219	1543	54
RTOR Reduction (vph)	0	21	0	0	0	23
Lane Group Flow (vph)	19	2	48	1219	1543	31
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	3.1	3.1	1.0	26.9	21.9	21.9
Effective Green, g (s)	3.1	3.1	1.0	26.9	21.9	21.9
Actuated g/C Ratio	0.08	0.08	0.03	0.71	0.58	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	144	128	47	3600	2931	893
v/s Ratio Prot	c0.01		c0.03	0.24	c0.30	
v/s Ratio Perm		0.00				0.02
v/c Ratio	0.13	0.01	1.02	0.34	0.53	0.03
Uniform Delay, d1	16.2	16.0	18.5	2.1	4.9	3.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	137.5	0.1	0.2	0.0
Delay (s)	16.6	16.1	156.0	2.2	5.1	3.5
Level of Service	B	B	F	A	A	A
Approach Delay (s)	16.3			8.0	5.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	38.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



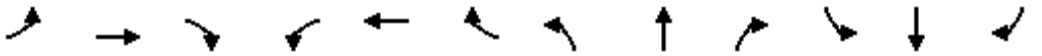
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	0	45	13	0	6	94	1132	30	16	1636	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.92			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1661			1720		1770	5085	1544	1770	5085	1544
Flt Permitted		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1661			1720		1770	5085	1544	1770	5085	1544
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	0	47	14	0	6	99	1192	32	17	1722	97
RTOR Reduction (vph)	0	43	0	0	6	0	0	0	6	0	0	17
Lane Group Flow (vph)	0	33	0	0	14	0	99	1192	26	17	1722	80
Confl. Peds. (#/hr)			2			2	2		2			2
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)		8.7			5.6		8.8	60.9	60.9	0.6	52.7	52.7
Effective Green, g (s)		8.7			5.6		8.8	60.9	60.9	0.6	52.7	52.7
Actuated g/C Ratio		0.09			0.06		0.10	0.66	0.66	0.01	0.57	0.57
Clearance Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		157			105		170	3373	1024	12	2919	886
v/s Ratio Prot		c0.02			c0.01		c0.06	0.23		0.01	c0.34	
v/s Ratio Perm									0.02			0.05
v/c Ratio		0.21			0.14		0.58	0.35	0.03	1.42	0.59	0.09
Uniform Delay, d1		38.4			40.8		39.7	6.8	5.3	45.6	12.6	8.8
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7			0.6		5.0	0.1	0.0	416.9	0.3	0.0
Delay (s)		39.1			41.4		44.7	6.9	5.3	462.5	12.9	8.8
Level of Service		D			D		D	A	A	F	B	A
Approach Delay (s)		39.1			41.4			9.7			16.8	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

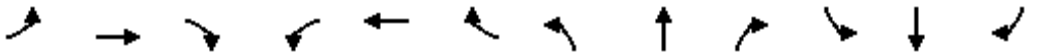
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	855	131	133	637	147	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	900	138	140	671	155	69
RTOR Reduction (vph)	0	70	0	0	0	56
Lane Group Flow (vph)	900	68	140	671	155	13
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	21.1	21.1	4.4	31.2	8.6	8.6
Effective Green, g (s)	24.5	24.5	5.4	34.6	9.6	9.6
Actuated g/C Ratio	0.49	0.49	0.11	0.70	0.19	0.19
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1752	784	193	2474	343	307
v/s Ratio Prot	c0.25		c0.08	0.19	c0.09	
v/s Ratio Perm		0.04				0.01
v/c Ratio	0.51	0.09	0.73	0.27	0.45	0.04
Uniform Delay, d1	8.5	6.6	21.3	2.8	17.6	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	10.9	0.1	0.3	0.0
Delay (s)	8.9	6.7	32.2	2.9	18.0	16.2
Level of Service	A	A	C	A	B	B
Approach Delay (s)	8.6			7.9	17.4	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	49.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	19	26	20	13	38	51	834	47	99	1115	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	20	27	21	14	40	54	878	49	104	1174	146
RTOR Reduction (vph)	0	0	23	0	0	35	0	0	27	0	0	75
Lane Group Flow (vph)	51	20	4	21	14	5	54	878	22	104	1174	71
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.4	9.7	9.7	0.5	7.8	7.8	2.9	28.2	28.2	5.8	31.1	31.1
Effective Green, g (s)	2.4	9.7	9.7	0.5	7.8	7.8	2.9	28.2	28.2	5.8	31.1	31.1
Actuated g/C Ratio	0.04	0.15	0.15	0.01	0.12	0.12	0.05	0.44	0.44	0.09	0.48	0.48
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	66	281	239	14	226	192	80	2234	695	160	2463	767
v/s Ratio Prot	c0.03	c0.01		0.01	0.01		0.03	0.17		c0.06	c0.23	
v/s Ratio Perm			0.00			0.00			0.01			0.04
v/c Ratio	0.77	0.07	0.02	1.50	0.06	0.03	0.68	0.39	0.03	0.65	0.48	0.09
Uniform Delay, d1	30.6	23.4	23.2	31.9	25.0	24.9	30.2	12.2	10.2	28.2	11.1	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	42.0	0.1	0.0	427.8	0.1	0.1	20.2	0.1	0.0	9.1	0.1	0.1
Delay (s)	72.6	23.5	23.2	459.7	25.1	24.9	50.4	12.3	10.3	37.3	11.2	9.0
Level of Service	E	C	C	F	C	C	D	B	B	D	B	A
Approach Delay (s)		49.0			146.7			14.3			12.9	
Approach LOS		D			F			B			B	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

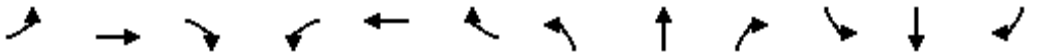


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	46	42	149	86	0	92	898	242	1	1068	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	48	44	157	91	0	97	945	255	1	1124	96
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	142	0	0	60
Lane Group Flow (vph)	36	48	6	157	91	0	97	945	113	1	1124	36
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.4	9.3	9.3	10.5	17.4		5.4	30.5	30.5	0.6	25.7	25.7
Effective Green, g (s)	3.4	10.3	10.3	11.5	18.4		6.4	32.5	31.5	1.6	27.7	26.7
Actuated g/C Ratio	0.05	0.15	0.15	0.16	0.26		0.09	0.46	0.44	0.02	0.39	0.38
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	85	271	230	287	483		160	2331	703	40	1987	596
v/s Ratio Prot	0.02	0.03		c0.09	c0.05		c0.05	0.19		0.00	c0.22	
v/s Ratio Perm			0.00						0.07			0.02
v/c Ratio	0.42	0.18	0.03	0.55	0.19		0.61	0.41	0.16	0.03	0.57	0.06
Uniform Delay, d1	32.8	26.6	26.0	27.3	20.4		31.0	12.8	11.8	33.9	16.9	14.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.3	0.0	2.1	0.2		6.4	0.1	0.1	0.3	0.4	0.0
Delay (s)	36.2	26.9	26.1	29.4	20.6		37.4	12.9	11.9	34.1	17.3	14.1
Level of Service	D	C	C	C	C		D	B	B	C	B	B
Approach Delay (s)		29.2			26.2			14.5			17.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

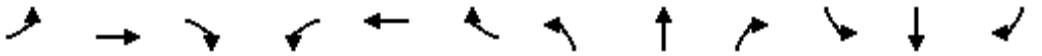
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	37	13	1214	75	0	1259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0		5.0
Lane Util. Factor	1.00	1.00	0.91	1.00		0.91
Frt	1.00	0.85	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	5085	1583		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	5085	1583		5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	39	14	1278	79	0	1325
RTOR Reduction (vph)	0	12	0	24	0	0
Lane Group Flow (vph)	39	2	1278	55	0	1325
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.3	6.3	37.7	37.7		37.7
Effective Green, g (s)	6.3	6.3	37.7	37.7		37.7
Actuated g/C Ratio	0.12	0.12	0.70	0.70		0.70
Clearance Time (s)	5.0	5.0	5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	207	185	3550	1105		3550
v/s Ratio Prot	c0.02		0.25			c0.26
v/s Ratio Perm		0.00		0.03		
v/c Ratio	0.19	0.01	0.36	0.05		0.37
Uniform Delay, d1	21.5	21.1	3.3	2.5		3.3
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	0.0	0.1	0.0		0.1
Delay (s)	22.0	21.1	3.3	2.6		3.4
Level of Service	C	C	A	A		A
Approach Delay (s)	21.8		3.3			3.4
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	213	29	17	53	14	8	70	1356	193	15	1487	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.13	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	236	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	224	31	18	56	15	8	74	1427	203	16	1565	127
RTOR Reduction (vph)	0	0	14	0	0	7	0	0	95	0	0	54
Lane Group Flow (vph)	224	31	4	56	15	1	74	1427	108	16	1565	73
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Prot		Perm
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases			4			8	2		2			6
Actuated Green, G (s)	14.9	16.4	16.4	4.4	5.9	5.9	38.1	38.1	38.1	0.6	43.7	43.7
Effective Green, g (s)	14.9	16.4	16.4	4.4	5.9	5.9	38.1	38.1	38.1	0.6	43.7	43.7
Actuated g/C Ratio	0.19	0.21	0.21	0.06	0.07	0.07	0.48	0.48	0.48	0.01	0.55	0.55
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	332	384	327	98	138	117	113	2437	759	13	2795	870
v/s Ratio Prot	c0.13	c0.02		0.03	0.01			0.28		0.01	c0.31	
v/s Ratio Perm			0.00			0.00	c0.31		0.07			0.05
v/c Ratio	0.67	0.08	0.01	0.57	0.11	0.01	0.65	0.59	0.14	1.23	0.56	0.08
Uniform Delay, d1	30.0	25.5	25.1	36.6	34.3	34.1	15.7	15.0	11.6	39.5	11.6	8.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	0.1	0.0	7.8	0.3	0.0	12.8	0.4	0.1	333.7	0.2	0.0
Delay (s)	35.4	25.6	25.1	44.4	34.7	34.1	28.6	15.3	11.7	373.1	11.9	8.5
Level of Service	D	C	C	D	C	C	C	B	B	F	B	A
Approach Delay (s)		33.6			41.5			15.5			15.0	
Approach LOS		C			D			B			B	

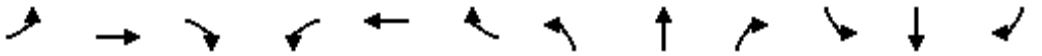
Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	46	64	164	77	166	44	885	35	196	1440	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1561	1770	1863	1561	1770	3539	1544	1770	3539	1544
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1561	1770	1863	1561	1770	3539	1544	1770	3539	1544
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	48	67	173	81	175	46	932	37	206	1516	101
RTOR Reduction (vph)	0	0	60	0	0	142	0	0	22	0	0	39
Lane Group Flow (vph)	46	48	7	173	81	33	46	932	15	206	1516	62
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.7	9.5	9.5	10.4	16.2	16.2	4.8	35.7	35.7	13.9	44.8	44.8
Effective Green, g (s)	3.7	9.5	9.5	10.4	16.2	16.2	4.8	35.7	35.7	13.9	44.8	44.8
Actuated g/C Ratio	0.04	0.11	0.11	0.12	0.19	0.19	0.06	0.42	0.42	0.16	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	77	207	173	215	353	296	99	1478	645	288	1854	809
v/s Ratio Prot	0.03	0.03		c0.10	c0.04		0.03	0.26		c0.12	c0.43	
v/s Ratio Perm			0.00			0.02			0.01			0.04
v/c Ratio	0.60	0.23	0.04	0.80	0.23	0.11	0.46	0.63	0.02	0.72	0.82	0.08
Uniform Delay, d1	40.2	34.7	33.9	36.6	29.4	28.7	39.1	19.7	14.6	33.9	16.9	10.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.9	0.6	0.1	19.2	0.3	0.2	3.4	0.9	0.0	8.2	2.9	0.0
Delay (s)	52.0	35.2	34.0	55.8	29.7	28.9	42.5	20.6	14.7	42.1	19.9	10.1
Level of Service	D	D	C	E	C	C	D	C	B	D	B	B
Approach Delay (s)		39.5			39.9			21.4			21.8	
Approach LOS		D			D			C			C	

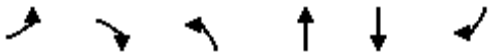
Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	85.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



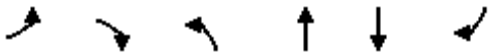
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	12	33	99	7	0	114	886	84	0	1438	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	4.0	4.0		3.0	5.0	6.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00		0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1593	1676	1425	1593	1676		1593	3185	1425		3185	1425
Flt Permitted	0.95	1.00	1.00	0.75	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1593	1676	1425	1256	1676		1593	3185	1425		3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	13	35	104	7	0	120	933	88	0	1514	141
RTOR Reduction (vph)	0	0	25	0	0	0	0	0	32	0	0	46
Lane Group Flow (vph)	104	13	10	104	7	0	120	933	56	0	1514	95
Turn Type	Prot		Perm	Perm		Perm	Prot		Perm	Perm		Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Actuated Green, G (s)	9.1	29.5	29.5	16.4	16.4		10.0	69.5	69.5		55.5	55.5
Effective Green, g (s)	10.1	29.5	30.5	16.4	16.4		11.0	70.5	69.5		56.5	56.5
Actuated g/C Ratio	0.09	0.27	0.28	0.15	0.15		0.10	0.65	0.64		0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.7	4.7		4.7	4.7
Lane Grp Cap (vph)	148	454	399	189	252		161	2060	909		1651	739
v/s Ratio Prot	c0.07	0.01			0.00		c0.08	0.29			c0.48	
v/s Ratio Perm			0.01	c0.08					0.04			0.07
v/c Ratio	0.70	0.03	0.02	0.55	0.03		0.75	0.45	0.06		0.92	0.13
Uniform Delay, d1	48.0	29.2	28.5	42.9	39.5		47.6	9.6	7.5		24.1	13.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	11.6	0.0	0.0	2.0	0.0		15.0	0.3	0.1		8.8	0.1
Delay (s)	59.6	29.2	28.5	44.8	39.5		62.7	9.9	7.5		32.9	13.7
Level of Service	E	C	C	D	D		E	A	A		C	B
Approach Delay (s)		49.9			44.5			15.3			31.2	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	109.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



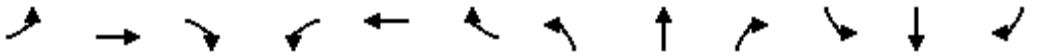
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	62	83	266	937	1260	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	87	280	986	1326	124
RTOR Reduction (vph)	0	78	0	0	0	57
Lane Group Flow (vph)	65	9	280	986	1326	67
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	7.9	7.9	16.3	57.5	36.2	36.2
Effective Green, g (s)	7.9	7.9	16.3	57.5	36.2	36.2
Actuated g/C Ratio	0.10	0.10	0.22	0.76	0.48	0.48
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	185	166	383	2699	1699	760
v/s Ratio Prot	c0.04		c0.16	0.28	c0.37	
v/s Ratio Perm		0.01				0.04
v/c Ratio	0.35	0.05	0.73	0.37	0.78	0.09
Uniform Delay, d1	31.4	30.4	27.5	2.9	16.3	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	7.0	0.1	2.4	0.1
Delay (s)	32.5	30.5	34.5	3.0	18.7	10.7
Level of Service	C	C	C	A	B	B
Approach Delay (s)	31.4			10.0	18.0	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	75.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	121	107	99	1258	1363	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	127	113	104	1324	1435	196
RTOR Reduction (vph)	0	92	0	0	0	88
Lane Group Flow (vph)	127	21	104	1324	1435	108
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	11.2	11.2	7.1	43.3	32.2	32.2
Effective Green, g (s)	12.2	12.2	8.1	46.7	35.6	35.6
Actuated g/C Ratio	0.19	0.19	0.13	0.72	0.55	0.55
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	335	299	222	2562	1953	874
v/s Ratio Prot	c0.07		0.06	c0.37	c0.41	
v/s Ratio Perm		0.01				0.07
v/c Ratio	0.38	0.07	0.47	0.52	0.73	0.12
Uniform Delay, d1	22.8	21.5	26.2	3.9	10.9	6.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.6	0.3	1.7	0.1
Delay (s)	23.1	21.5	26.8	4.3	12.6	7.1
Level of Service	C	C	C	A	B	A
Approach Delay (s)	22.4			5.9	12.0	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	8.2
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

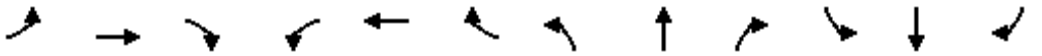


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	32	10	44	104	59	25	1184	34	35	1144	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9	3.7	3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	131	34	11	46	109	62	26	1246	36	37	1204	281
RTOR Reduction (vph)	0	0	10	0	0	56	0	0	17	0	0	127
Lane Group Flow (vph)	131	34	1	46	109	6	26	1246	19	37	1204	154
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	9.5	9.5	9.5	5.9	5.9	5.9	2.7	37.7	37.7	4.1	39.1	39.1
Effective Green, g (s)	11.1	11.1	10.5	7.5	7.5	7.5	3.7	41.1	41.1	5.1	42.5	42.5
Actuated g/C Ratio	0.14	0.14	0.14	0.10	0.10	0.10	0.05	0.53	0.53	0.07	0.55	0.55
Clearance Time (s)	4.9	4.9	4.9	5.3	5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1	2.0	2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	254	267	215	172	181	153	85	1879	841	117	1943	869
v/s Ratio Prot	c0.07	0.02		0.03	c0.06		0.01	c0.35		c0.02	0.34	
v/s Ratio Perm			0.00			0.00			0.01			0.10
v/c Ratio	0.52	0.13	0.01	0.27	0.60	0.04	0.31	0.66	0.02	0.32	0.62	0.18
Uniform Delay, d1	30.7	28.9	28.9	32.4	33.5	31.7	35.6	13.1	8.6	34.5	11.9	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.2	0.0	0.3	3.8	0.0	0.7	1.1	0.0	0.6	0.8	0.2
Delay (s)	32.5	29.1	29.0	32.7	37.4	31.7	36.4	14.3	8.6	35.1	12.7	8.9
Level of Service	C	C	C	C	D	C	D	B	A	D	B	A
Approach Delay (s)		31.6			34.8			14.6			12.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	12.6
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	31	27	1653	59	42	1461
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1701		5085	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1701		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	28	1740	62	44	1538
RTOR Reduction (vph)	26	0	0	24	0	0
Lane Group Flow (vph)	35	0	1740	38	44	1538
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Actuated Green, G (s)	5.1		38.2	38.2	4.1	47.3
Effective Green, g (s)	5.1		38.2	38.2	4.1	47.3
Actuated g/C Ratio	0.08		0.61	0.61	0.07	0.76
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	139		3113	969	116	3854
v/s Ratio Prot	c0.02		c0.34		0.02	c0.30
v/s Ratio Perm				0.02		
v/c Ratio	0.25		0.56	0.04	0.38	0.40
Uniform Delay, d1	26.9		7.1	4.8	27.9	2.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0		0.2	0.0	2.1	0.1
Delay (s)	27.8		7.4	4.8	30.0	2.7
Level of Service	C		A	A	C	A
Approach Delay (s)	27.8		7.3			3.4
Approach LOS	C		A			A

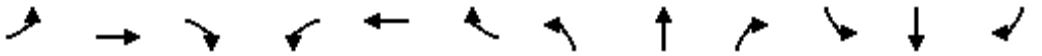
Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	62.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	0	45	13	0	6	94	1132	30	16	1636	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1562		1770	1562		1770	5085	1547	1770	5085	1547
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1562		1770	1562		1770	5085	1547	1770	5085	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	0	47	14	0	6	99	1192	32	17	1722	97
RTOR Reduction (vph)	0	43	0	0	5	0	0	0	12	0	0	38
Lane Group Flow (vph)	29	4	0	14	1	0	99	1192	20	17	1722	59
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	0.5	5.3		0.5	5.3		4.3	39.7	39.7	0.5	35.9	35.9
Effective Green, g (s)	0.5	5.3		0.5	5.3		4.3	39.7	39.7	0.5	35.9	35.9
Actuated g/C Ratio	0.01	0.09		0.01	0.09		0.07	0.64	0.64	0.01	0.58	0.58
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	14	134		14	134		123	3256	991	14	2944	896
v/s Ratio Prot	c0.02	c0.00		0.01	0.00		c0.06	c0.23		0.01	c0.34	
v/s Ratio Perm									0.01			0.04
v/c Ratio	2.07	0.03		1.00	0.00		0.80	0.37	0.02	1.21	0.58	0.07
Uniform Delay, d1	30.8	26.0		30.8	25.9		28.4	5.2	4.1	30.8	8.3	5.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	662.9	0.1		240.5	0.0		30.5	0.3	0.0	317.6	0.9	0.1
Delay (s)	693.7	26.1		271.3	25.9		58.9	5.6	4.1	348.4	9.2	5.9
Level of Service	F	C		F	C		E	A	A	F	A	A
Approach Delay (s)		280.8			197.7			9.5			12.1	
Approach LOS		F			F			A			B	

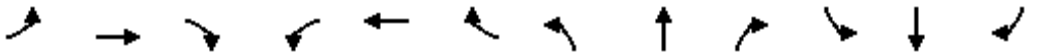
Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



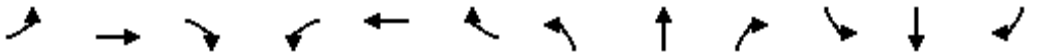
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	4	61	52	4	21	135	592	116	60	1011	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1782	1583		1780	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1782	1583		1780	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	4	64	55	4	22	142	623	122	63	1064	185
RTOR Reduction (vph)	0	0	57	0	0	20	0	0	66	0	0	76
Lane Group Flow (vph)	0	44	7	0	59	2	142	623	56	63	1064	109
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		8.3	8.3		8.7	8.7	10.7	37.3	37.3	6.6	33.2	33.2
Effective Green, g (s)		8.3	8.3		8.7	8.7	10.7	37.3	37.3	6.6	33.2	33.2
Actuated g/C Ratio		0.10	0.10		0.11	0.11	0.13	0.46	0.46	0.08	0.41	0.41
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		183	162		191	170	234	1632	730	144	1452	650
v/s Ratio Prot		c0.02			c0.03		c0.08	c0.18		0.04	c0.30	
v/s Ratio Perm			0.00			0.00			0.04			0.07
v/c Ratio		0.24	0.04		0.31	0.01	0.61	0.38	0.08	0.44	0.73	0.17
Uniform Delay, d1		33.4	32.7		33.3	32.3	33.1	14.3	12.2	35.4	20.1	15.1
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7	0.1		0.9	0.0	4.4	0.1	0.0	2.1	1.9	0.1
Delay (s)		34.1	32.8		34.2	32.3	37.5	14.4	12.2	37.5	22.1	15.2
Level of Service		C	C		C	C	D	B	B	D	C	B
Approach Delay (s)		33.3			33.7			17.8			21.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	80.9	Sum of lost time (s)	25.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



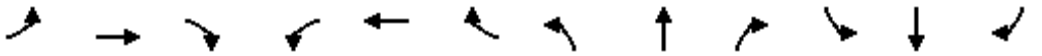
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	10	68	8	90	227	81	559	30	53	971	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1787	1583		1856	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.74	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1369	1583		1829	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	11	72	8	95	239	85	588	32	56	1022	104
RTOR Reduction (vph)	0	0	50	0	0	165	0	0	21	0	0	70
Lane Group Flow (vph)	0	71	22	0	103	74	85	588	11	56	1022	34
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		17.2	17.2		17.2	17.2	5.2	19.1	19.1	4.6	18.5	18.5
Effective Green, g (s)		17.2	17.2		17.2	17.2	5.2	19.1	19.1	4.6	18.5	18.5
Actuated g/C Ratio		0.31	0.31		0.31	0.31	0.09	0.34	0.34	0.08	0.33	0.33
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		421	487		563	487	165	1209	541	146	1171	524
v/s Ratio Prot							c0.05	0.17		0.03	c0.29	
v/s Ratio Perm		0.05	0.01		c0.06	0.05			0.01			0.02
v/c Ratio		0.17	0.05		0.18	0.15	0.52	0.49	0.02	0.38	0.87	0.07
Uniform Delay, d1		14.1	13.6		14.2	14.0	24.1	14.5	12.2	24.3	17.6	12.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	0.0		0.2	0.1	2.7	0.3	0.0	1.7	7.4	0.1
Delay (s)		14.3	13.6		14.4	14.2	26.9	14.8	12.2	26.0	25.0	12.8
Level of Service		B	B		B	B	C	B	B	C	C	B
Approach Delay (s)		14.0			14.2			16.2			24.0	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	1	181	0	5	9	190	587	0	24	1102	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1585			1863	1583	1770	3539		1770	3539	1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1585			1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	1	191	0	5	9	200	618	0	25	1160	129
RTOR Reduction (vph)	0	152	0	0	0	8	0	0	0	0	0	53
Lane Group Flow (vph)	93	40	0	0	5	1	200	618	0	25	1160	76
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	5.7	14.0			4.3	4.3	12.0	41.1		1.6	30.7	30.7
Effective Green, g (s)	5.7	14.0			4.3	4.3	12.0	41.1		1.6	30.7	30.7
Actuated g/C Ratio	0.08	0.20			0.06	0.06	0.17	0.60		0.02	0.45	0.45
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	147	323			117	99	309	2117		41	1581	707
v/s Ratio Prot	c0.05	c0.03			0.00		c0.11	0.17		0.01	c0.33	
v/s Ratio Perm						0.00						0.05
v/c Ratio	0.63	0.12			0.04	0.01	0.65	0.29		0.61	0.73	0.11
Uniform Delay, d1	30.5	22.3			30.3	30.2	26.4	6.7		33.2	15.6	11.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.6	0.2			0.2	0.0	4.6	0.1		23.0	1.8	0.1
Delay (s)	39.1	22.5			30.4	30.2	31.0	6.8		56.3	17.4	11.1
Level of Service	D	C			C	C	C	A		E	B	B
Approach Delay (s)		27.9			30.3			12.7			17.6	
Approach LOS		C			C			B			B	

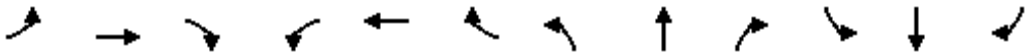
Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	0	9	19	0	24	20	349	28	43	1008	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.99	1.00		0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1562	1770		1562	1770	3539	1547	1770	3539	1547
Flt Permitted		0.68	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1263	1562	1770		1562	1770	3539	1547	1770	3539	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	0	9	20	0	25	21	367	29	45	1061	68
RTOR Reduction (vph)	0	0	8	0	0	23	0	0	14	0	0	26
Lane Group Flow (vph)	0	25	1	20	0	2	21	367	15	45	1061	42
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Perm		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Actuated Green, G (s)		5.9	5.9	5.8		5.8	1.0	34.2	34.2	3.6	36.8	36.8
Effective Green, g (s)		5.9	5.9	5.8		5.8	1.0	34.2	34.2	3.6	36.8	36.8
Actuated g/C Ratio		0.09	0.09	0.09		0.09	0.02	0.52	0.52	0.05	0.56	0.56
Clearance Time (s)		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		114	141	157		138	27	1848	808	97	1988	869
v/s Ratio Prot				c0.01			0.01	0.10		c0.03	c0.30	
v/s Ratio Perm		c0.02	0.00			0.00			0.01			0.03
v/c Ratio		0.22	0.01	0.13		0.02	0.78	0.20	0.02	0.46	0.53	0.05
Uniform Delay, d1		27.7	27.1	27.5		27.2	32.1	8.3	7.6	30.0	9.0	6.5
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.0	0.0	0.4		0.0	81.9	0.1	0.0	3.5	0.3	0.0
Delay (s)		28.6	27.1	27.9		27.3	114.0	8.4	7.6	33.5	9.3	6.5
Level of Service		C	C	C		C	F	A	A	C	A	A
Approach Delay (s)		28.2			27.6			13.7			10.0	
Approach LOS		C			C			B			B	

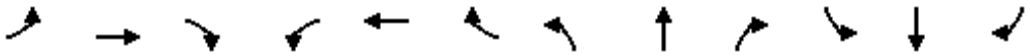
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



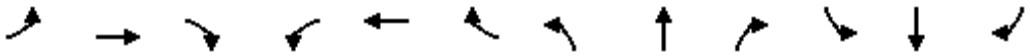
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	0	34	9	3	23	9	477	15	46	1130	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4		3.0	3.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1795	1583	1770	3523		1770	3490	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1795	1583	1770	3523		1770	3490	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	0	36	9	3	24	9	502	16	48	1189	121
RTOR Reduction (vph)	0	0	30	0	0	23	0	1	0	0	4	0
Lane Group Flow (vph)	0	69	6	0	12	1	9	517	0	48	1306	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		10.6	10.6		3.1	3.1	0.8	39.3		4.4	42.9	
Effective Green, g (s)		11.6	11.6		4.1	4.1	1.8	41.6		5.4	45.2	
Actuated g/C Ratio		0.15	0.15		0.05	0.05	0.02	0.55		0.07	0.60	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		273	245		98	86	42	1951		127	2101	
v/s Ratio Prot		c0.04			c0.01		0.01	0.15		c0.03	c0.37	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.25	0.02		0.12	0.02	0.21	0.26		0.38	0.62	
Uniform Delay, d1		27.9	26.9		33.8	33.6	36.0	8.8		33.2	9.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.2	0.0	0.9	0.1		0.7	0.6	
Delay (s)		28.1	27.0		34.0	33.6	36.9	8.9		33.9	10.1	
Level of Service		C	C		C	C	D	A		C	B	
Approach Delay (s)		27.7			33.7			9.3			11.0	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



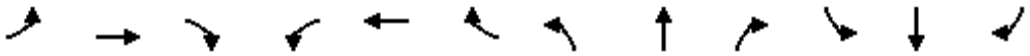
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	16	30	23	4	18	19	474	25	15	1071	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.95		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791	1583		1717		1770	3513		1770	3502	
Flt Permitted		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1791	1583		1717		1770	3513		1770	3502	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	17	32	24	4	19	20	499	26	16	1127	84
RTOR Reduction (vph)	0	0	28	0	18	0	0	2	0	0	3	0
Lane Group Flow (vph)	0	85	4	0	29	0	20	523	0	16	1208	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		9.9	9.9		5.1		1.0	43.4		1.0	43.4	
Effective Green, g (s)		9.9	9.9		5.1		1.0	43.4		1.0	43.4	
Actuated g/C Ratio		0.13	0.13		0.07		0.01	0.56		0.01	0.56	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		230	203		114		23	1977		23	1971	
v/s Ratio Prot		c0.05			c0.02		c0.01	0.15		0.01	c0.34	
v/s Ratio Perm			0.00									
v/c Ratio		0.37	0.02		0.26		0.87	0.26		0.70	0.61	
Uniform Delay, d1		30.7	29.4		34.2		38.0	8.7		37.9	11.2	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		0.4		124.8	0.1		54.1	0.6	
Delay (s)		31.1	29.4		34.6		162.8	8.7		92.0	11.8	
Level of Service		C	C		C		F	A		F	B	
Approach Delay (s)		30.6			34.6			14.4			12.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	77.1	Sum of lost time (s)	17.7
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	5	111	13	11	7	171	532	22	13	1042	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1814	1583	1770	3518		1770	3508	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1814	1583	1770	3518		1770	3508	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	5	117	14	12	7	180	560	23	14	1097	69
RTOR Reduction (vph)	0	0	105	0	0	6	0	3	0	0	5	0
Lane Group Flow (vph)	0	41	12	0	26	1	180	580	0	14	1161	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		6.8	6.8		5.1	5.1	11.1	42.7		0.8	32.4	
Effective Green, g (s)		7.8	7.8		6.1	6.1	12.1	45.4		1.8	35.1	
Actuated g/C Ratio		0.11	0.11		0.08	0.08	0.17	0.62		0.02	0.48	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		190	169		151	132	293	2185		44	1684	
v/s Ratio Prot		c0.02			c0.01		c0.10	0.16		0.01	c0.33	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.22	0.07		0.17	0.00	0.61	0.27		0.32	0.69	
Uniform Delay, d1		29.9	29.4		31.2	30.7	28.3	6.3		35.0	14.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.2		0.5	0.0	2.7	0.1		1.5	1.3	
Delay (s)		30.4	29.6		31.7	30.7	31.0	6.4		36.6	16.0	
Level of Service		C	C		C	C	C	A		D	B	
Approach Delay (s)		29.8			31.5			12.2			16.3	
Approach LOS		C			C			B			B	

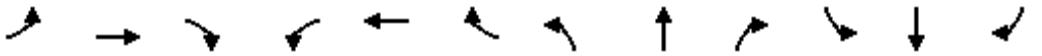
Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	73.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	13	28	52	16	244	47	1037	18	135	1407	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.97	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1800	1531	1681	1724	1583	1770	3527		1770	3494	
Flt Permitted		0.97	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1800	1531	1681	1724	1583	1770	3527		1770	3494	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	14	29	55	17	257	49	1092	19	142	1481	97
RTOR Reduction (vph)	0	0	26	0	0	228	0	1	0	0	3	0
Lane Group Flow (vph)	0	47	3	36	36	29	49	1110	0	142	1575	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		9.1	9.1	9.7	9.7	9.7	4.4	45.5		10.7	51.8	
Effective Green, g (s)		10.1	10.1	10.7	10.7	10.7	6.4	47.5		12.7	53.8	
Actuated g/C Ratio		0.11	0.11	0.11	0.11	0.11	0.07	0.51		0.14	0.57	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		193	165	191	196	180	121	1782		239	2000	
v/s Ratio Prot		c0.03		c0.02	0.02		0.03	0.31		c0.08	c0.45	
v/s Ratio Perm			0.00			0.02						
v/c Ratio		0.24	0.02	0.19	0.18	0.16	0.40	0.62		0.59	0.79	
Uniform Delay, d1		38.4	37.5	37.7	37.7	37.6	42.0	16.8		38.2	15.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0	0.3	0.3	0.3	0.8	0.8		2.6	2.2	
Delay (s)		38.9	37.6	38.1	38.0	37.9	42.8	17.5		40.9	17.9	
Level of Service		D	D	D	D	D	D	B		D	B	
Approach Delay (s)		38.4			37.9			18.6			19.8	
Approach LOS		D			D			B			B	

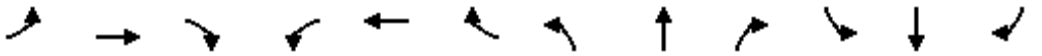
Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	94.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



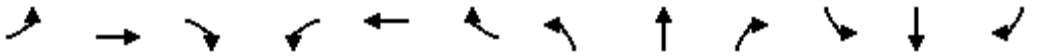
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	0	41	12	0	23	50	1009	32	38	1378	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	37	0	43	13	0	24	53	1062	34	40	1451	6
RTOR Reduction (vph)	0	0	38	0	0	23	0	2	0	0	0	2
Lane Group Flow (vph)	37	0	5	13	0	2	53	1094	0	40	1451	4
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	10.7		10.7	4.5		4.5	4.4	51.2		3.9	50.7	50.7
Effective Green, g (s)	10.7		10.7	5.5		5.5	4.4	52.2		4.9	51.7	50.7
Actuated g/C Ratio	0.12		0.12	0.06		0.06	0.05	0.59		0.06	0.59	0.58
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	215		192	111		99	89	2090		99	2079	912
v/s Ratio Prot	c0.02			c0.01			c0.03	0.31		0.02	c0.41	
v/s Ratio Perm			0.00			0.00						0.00
v/c Ratio	0.17		0.03	0.12		0.02	0.60	0.52		0.40	0.70	0.00
Uniform Delay, d1	34.7		34.1	39.0		38.7	40.9	10.6		40.1	12.7	7.9
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1		0.0	0.2		0.0	6.9	0.4		1.0	1.2	0.0
Delay (s)	34.8		34.1	39.1		38.7	47.9	10.9		41.1	13.9	7.9
Level of Service	C		C	D		D	D	B		D	B	A
Approach Delay (s)		34.4			38.9			12.6			14.6	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



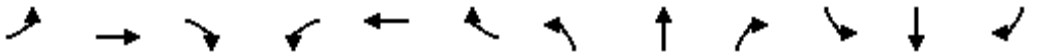
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	542	6	308	177	6	101	99	1009	55	38	1139	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	571	6	324	186	6	106	104	1062	58	40	1199	182
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	109
Lane Group Flow (vph)	291	286	324	186	6	106	104	1062	58	40	1199	73
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	16.4	16.4	76.8	9.8	9.8	76.8	5.0	28.6	76.8	4.0	27.6	27.6
Effective Green, g (s)	17.4	17.4	76.8	10.8	10.8	76.8	6.0	32.0	76.8	5.0	31.0	31.0
Actuated g/C Ratio	0.23	0.23	1.00	0.14	0.14	1.00	0.08	0.42	1.00	0.07	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	381	382	1583	249	262	1583	138	2119	1583	115	2053	639
v/s Ratio Prot	c0.17	0.17		c0.11	0.00		c0.06	0.21		0.02	c0.24	
v/s Ratio Perm			c0.20			0.07			0.04			0.05
v/c Ratio	0.76	0.75	0.20	0.75	0.02	0.07	0.75	0.50	0.04	0.35	0.58	0.11
Uniform Delay, d1	27.8	27.7	0.0	31.7	28.5	0.0	34.7	16.5	0.0	34.3	17.9	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.4	7.4	0.3	11.5	0.0	0.1	18.5	0.3	0.0	1.8	0.6	0.1
Delay (s)	36.2	35.1	0.3	43.2	28.5	0.1	53.1	16.9	0.0	36.2	18.5	14.5
Level of Service	D	D	A	D	C	A	D	B	A	D	B	B
Approach Delay (s)		22.9			27.6			19.1			18.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	11.6
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



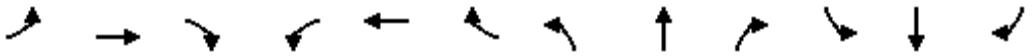
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	2	37	133	2	194	5	1044	36	67	1814	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0		3.0	-0.4	3.0	4.0	0.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1687	1583	1770	1586		1770	3539	1583	1770	5085	
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.19	1.00	
Satd. Flow (perm)	1681	1687	1583	1770	1586		1770	3539	1583	352	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	2	39	140	2	204	5	1099	38	71	1909	1
RTOR Reduction (vph)	0	0	34	0	50	0	0	0	17	0	0	0
Lane Group Flow (vph)	88	87	5	140	156	0	5	1099	21	71	1910	0
Turn Type	Split		Perm	Split			Prot		Perm	Perm		
Protected Phases	4	4		8	8		5	2			6	
Permitted Phases			4						2	6		
Actuated Green, G (s)	7.8	7.8	7.8	11.2	11.2		1.0	37.0	37.0	31.0	31.0	
Effective Green, g (s)	8.8	7.8	8.8	11.2	11.2		2.0	40.4	37.0	31.0	34.4	
Actuated g/C Ratio	0.13	0.11	0.13	0.16	0.16		0.03	0.59	0.54	0.46	0.51	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0		4.0	3.0	3.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	218	194	205	292	261		52	2103	861	160	2572	
v/s Ratio Prot	c0.05	0.05		0.08	c0.10		0.00	c0.31			c0.38	
v/s Ratio Perm			0.00						0.01	0.20		
v/c Ratio	0.40	0.45	0.02	0.48	0.60		0.10	0.52	0.02	0.44	0.74	
Uniform Delay, d1	27.2	28.1	25.9	25.8	26.3		32.1	8.1	7.2	12.6	13.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	1.6	0.0	1.2	3.6		0.8	0.2	0.0	2.0	1.2	
Delay (s)	28.4	29.7	25.9	27.0	30.0		32.9	8.4	7.2	14.6	14.5	
Level of Service	C	C	C	C	C		C	A	A	B	B	
Approach Delay (s)		28.5			28.8			8.4			14.5	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	8.2
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



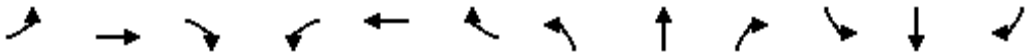
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	9	165	0	2	114	46	948	0	293	1812	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.95	0.95		1.00		1.00	0.95		1.00	0.95	
Frt		0.86	0.85		0.87		1.00	1.00		1.00	1.00	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1530	1504		1615		1770	3539		1770	3539	
Flt Permitted		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1530	1504		1615		1770	3539		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	9	174	0	2	120	48	998	0	308	1907	0
RTOR Reduction (vph)	0	74	79	0	106	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	19	11	0	16	0	48	998	0	308	1907	0
Turn Type	Perm		Perm				Prot			Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4									6
Actuated Green, G (s)		9.4	9.4		9.4		3.0	37.9		18.5	53.4	
Effective Green, g (s)		9.4	9.4		9.4		3.0	37.9		18.5	53.4	
Actuated g/C Ratio		0.12	0.12		0.12		0.04	0.47		0.23	0.66	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		178	175		188		66	1660		405	2339	
v/s Ratio Prot		c0.01			0.01		0.03	0.28		c0.17	c0.54	
v/s Ratio Perm			0.01									
v/c Ratio		0.11	0.06		0.08		0.73	0.60		0.76	0.82	
Uniform Delay, d1		31.9	31.8		31.9		38.5	15.9		29.1	10.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.2		0.2		32.6	0.6		8.2	2.3	
Delay (s)		32.2	31.9		32.1		71.1	16.5		37.3	12.4	
Level of Service		C	C		C		E	B		D	B	
Approach Delay (s)		32.1			32.1			19.0			15.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	80.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	8	105	116	3	18	17	958	332	14	1716	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	2.6		2.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1790	1583	1681	1689	1583	1770	4889		1770	5068	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1790	1583	1681	1689	1583	1770	4889		1770	5068	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	8	111	122	3	19	18	1008	349	15	1806	43
RTOR Reduction (vph)	0	0	98	0	0	17	0	53	0	0	2	0
Lane Group Flow (vph)	0	43	13	62	63	2	18	1304	0	15	1847	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4						
Actuated Green, G (s)		7.3	7.3	8.3	8.3	8.3	0.9	38.9		0.7	37.7	
Effective Green, g (s)		8.3	8.3	9.3	9.3	9.3	1.9	42.3		1.7	41.1	
Actuated g/C Ratio		0.11	0.11	0.13	0.13	0.13	0.03	0.59		0.02	0.57	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	6.0		3.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2	0.2	2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)		206	182	217	218	204	47	2864		42	2885	
v/s Ratio Prot		c0.02		0.04	c0.04		c0.01	0.27		0.01	c0.36	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.21	0.07	0.29	0.29	0.01	0.38	0.46		0.36	0.64	
Uniform Delay, d1		29.0	28.5	28.4	28.5	27.4	34.6	8.4		34.7	10.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.1	0.3	0.3	0.0	1.9	0.2		1.9	0.5	
Delay (s)		29.2	28.6	28.7	28.7	27.4	36.5	8.6		36.6	11.1	
Level of Service		C	C	C	C	C	D	A		D	B	
Approach Delay (s)		28.7			28.6			9.0			11.3	
Approach LOS		C			C			A			B	

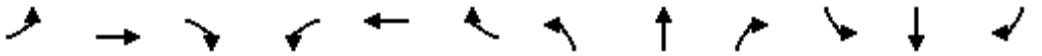
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	11.6
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	146	20	235	70	9	35	149	1574	11	15	2057	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.96		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1526		1783	1583	1770	5078		1770	5054	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1526		1783	1583	1770	5078		1770	5054	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	154	21	247	74	9	37	157	1657	12	16	2165	67
RTOR Reduction (vph)	0	0	214	0	0	35	0	1	0	0	2	0
Lane Group Flow (vph)	0	175	33	0	83	2	157	1668	0	16	2230	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		13.6	13.6		5.0	5.0	15.0	80.9		1.2	68.1	
Effective Green, g (s)		15.9	15.9		7.3	7.3	16.0	83.9		2.2	71.1	
Actuated g/C Ratio		0.13	0.13		0.06	0.06	0.13	0.70		0.02	0.59	
Clearance Time (s)		5.3	5.3		4.0	4.0	3.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		236	202		108	96	236	3550		32	2994	
v/s Ratio Prot		c0.10			c0.05		c0.09	0.33		0.01	c0.44	
v/s Ratio Perm			0.02			0.00						
v/c Ratio		0.74	0.16		0.77	0.02	0.67	0.47		0.50	0.74	
Uniform Delay, d1		50.1	46.1		55.5	53.0	49.5	8.1		58.4	17.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		10.4	0.1		25.0	0.0	5.4	0.2		4.4	1.7	
Delay (s)		60.5	46.3		80.5	53.0	54.8	8.3		62.8	19.6	
Level of Service		E	D		F	D	D	A		E	B	
Approach Delay (s)		52.2			72.0			12.3			19.9	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

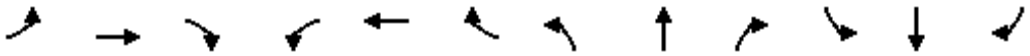
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	350	78	361	938	181	269	1591	149	275	1735	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1532	1770	5085	1534	3433	5085	1560	3433	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1532	1770	5085	1534	3433	5085	1560	3433	5085	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	119	368	82	380	987	191	283	1675	157	289	1826	244
RTOR Reduction (vph)	0	0	69	0	0	123	0	0	0	0	0	0
Lane Group Flow (vph)	119	368	13	380	987	68	283	1675	157	289	1826	244
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	8.5	16.6	16.6	28.8	36.9	36.9	11.8	43.3	120.0	11.9	43.1	120.0
Effective Green, g (s)	9.5	19.6	19.6	29.8	39.9	39.9	12.8	46.3	120.0	12.9	46.1	120.0
Actuated g/C Ratio	0.08	0.16	0.16	0.25	0.33	0.33	0.11	0.39	1.00	0.11	0.38	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	272	578	250	440	1691	510	366	1962	1560	369	1953	1560
v/s Ratio Prot	0.03	0.10		c0.21	c0.19		0.08	0.33		c0.08	c0.36	
v/s Ratio Perm			0.01			0.04			0.10			c0.16
v/c Ratio	0.44	0.64	0.05	0.86	0.58	0.13	0.77	0.85	0.10	0.78	0.93	0.16
Uniform Delay, d1	52.7	46.9	42.4	43.2	33.2	28.0	52.2	33.7	0.0	52.2	35.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.4	0.1	15.5	0.6	0.1	8.9	5.0	0.1	9.6	9.9	0.2
Delay (s)	53.1	49.3	42.5	58.6	33.7	28.1	61.1	38.7	0.1	61.8	45.4	0.2
Level of Service	D	D	D	E	C	C	E	D	A	E	D	A
Approach Delay (s)		49.1			39.1			38.9			42.7	
Approach LOS		D			D			D			D	

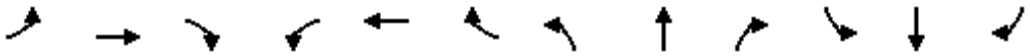
Intersection Summary			
HCM Average Control Delay	41.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1	25	28	1	19	29	2015	40	34	2134	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0	4.7	2.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.91	
Frt		0.93			0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1698			1712		1770	3539	1583	1770	5081	
Flt Permitted		0.88			0.88		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1535			1544		1770	3539	1583	1770	5081	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	1	26	29	1	20	31	2121	42	36	2246	12
RTOR Reduction (vph)	0	23	0	0	18	0	0	0	7	0	1	0
Lane Group Flow (vph)	0	30	0	0	32	0	31	2121	35	36	2257	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		6.7			6.7		1.5	50.2	50.2	1.5	49.2	
Effective Green, g (s)		7.7			7.7		2.5	52.9	51.2	2.5	51.9	
Actuated g/C Ratio		0.11			0.11		0.04	0.74	0.72	0.04	0.73	
Clearance Time (s)		4.0			4.0		4.0	5.7	5.7	3.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8	3.8	2.0	3.8	
Lane Grp Cap (vph)		166			167		62	2633	1140	62	3709	
v/s Ratio Prot							0.02	c0.60		c0.02	0.44	
v/s Ratio Perm		0.02			c0.02				0.02			
v/c Ratio		0.18			0.19		0.50	0.81	0.03	0.58	0.61	
Uniform Delay, d1		28.8			28.9		33.7	5.8	2.8	33.8	4.7	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5			0.6		2.3	2.0	0.0	8.6	0.3	
Delay (s)		29.3			29.4		36.0	7.8	2.9	42.4	5.0	
Level of Service		C			C		D	A	A	D	A	
Approach Delay (s)		29.3			29.4			8.1			5.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	5.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



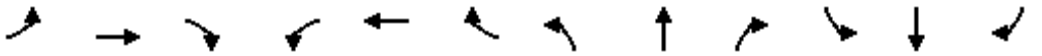
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	71	152	137	328	115	291	2285	85	95	2096	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5069	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5069	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	75	160	144	345	121	306	2405	89	100	2206	43
RTOR Reduction (vph)	0	0	136	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	93	75	24	144	345	121	306	2405	89	100	2248	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	8.5	14.9	14.9	7.7	14.1	120.0	14.7	71.8	120.0	5.9	63.0	
Effective Green, g (s)	9.5	17.9	17.9	8.7	17.1	120.0	15.7	74.8	120.0	6.9	66.0	
Actuated g/C Ratio	0.08	0.15	0.15	0.07	0.14	1.00	0.13	0.62	1.00	0.06	0.55	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	140	528	230	249	504	1562	449	3170	1562	197	2788	
v/s Ratio Prot	c0.05	0.02		0.04	c0.10		c0.09	0.47		0.03	c0.44	
v/s Ratio Perm			0.02			c0.08			0.06			
v/c Ratio	0.66	0.14	0.10	0.58	0.68	0.08	0.68	0.76	0.06	0.51	0.81	
Uniform Delay, d1	53.7	44.4	44.1	53.9	48.9	0.0	49.8	16.2	0.0	54.9	21.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.8	0.2	0.3	2.0	4.1	0.1	3.4	1.8	0.1	0.8	1.8	
Delay (s)	62.5	44.5	44.4	55.9	53.0	0.1	53.1	17.9	0.1	55.7	23.7	
Level of Service	E	D	D	E	D	A	D	B	A	E	C	
Approach Delay (s)		49.6			43.2			21.2			25.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	30	247	2448	209	241	2085
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	2.0	2.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	260	2577	220	254	2195
RTOR Reduction (vph)	0	0	0	29	0	0
Lane Group Flow (vph)	32	260	2577	191	254	2195
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	7.2	93.6	55.6	55.6	15.8	76.4
Effective Green, g (s)	8.2	93.6	57.6	57.6	16.8	78.4
Actuated g/C Ratio	0.09	1.00	0.62	0.62	0.18	0.84
Clearance Time (s)	6.0		6.0	6.0	3.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	155	1583	3129	974	318	4259
v/s Ratio Prot	0.02		c0.51		c0.14	0.43
v/s Ratio Perm		c0.16		0.12		
v/c Ratio	0.21	0.16	0.82	0.20	0.80	0.52
Uniform Delay, d1	39.7	0.0	14.0	7.9	36.8	2.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	1.9	0.1	12.3	0.1
Delay (s)	40.3	0.2	15.9	8.0	49.0	2.3
Level of Service	D	A	B	A	D	A
Approach Delay (s)	4.6		15.3			7.1
Approach LOS	A		B			A

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	93.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

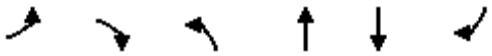


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	23	52	449	139	597	64	1167	237	257	1152	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	0.91	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1863	1583	3433	1602	1504	1770	3539	1583	3433	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1863	1583	3433	1602	1504	1770	3539	1583	3433	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	24	55	473	146	628	67	1228	249	271	1213	0
RTOR Reduction (vph)	0	0	52	0	60	264	0	0	158	0	0	0
Lane Group Flow (vph)	0	24	3	473	337	113	67	1228	91	271	1213	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		5.6	5.6	27.0	27.0	27.0	4.0	33.0	33.0	8.4	37.4	
Effective Green, g (s)		5.6	5.6	27.0	27.0	27.0	4.0	33.0	33.0	8.4	37.4	
Actuated g/C Ratio		0.06	0.06	0.30	0.30	0.30	0.04	0.37	0.37	0.09	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		116	98	1030	481	451	79	1298	580	320	1471	
v/s Ratio Prot		c0.01		0.14	c0.21		0.04	c0.35		c0.08	0.34	
v/s Ratio Perm			0.00			0.08			0.06			
v/c Ratio		0.21	0.03	0.46	0.70	0.25	0.85	0.95	0.16	0.85	0.82	
Uniform Delay, d1		40.1	39.7	25.6	27.9	23.8	42.7	27.6	19.2	40.2	23.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.9	0.1	0.3	4.6	0.3	53.2	15.0	0.6	18.3	5.4	
Delay (s)		41.0	39.8	25.9	32.5	24.1	95.9	42.7	19.7	58.5	28.8	
Level of Service		D	D	C	C	C	F	D	B	E	C	
Approach Delay (s)		40.2			27.5			41.3			34.2	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	34.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

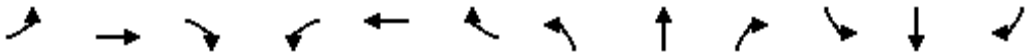
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	121	29	594	130	84	1008
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	127	31	625	137	88	1061
RTOR Reduction (vph)	0	24	0	63	0	0
Lane Group Flow (vph)	127	7	625	74	88	1061
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.3	9.3	24.3	24.3	3.8	31.1
Effective Green, g (s)	10.8	10.8	27.3	27.3	4.8	34.1
Actuated g/C Ratio	0.21	0.21	0.54	0.54	0.10	0.68
Clearance Time (s)	4.0	4.0	6.0	6.0	3.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	379	339	1917	857	169	2394
v/s Ratio Prot	c0.07		0.18		c0.05	c0.30
v/s Ratio Perm		0.00		0.05		
v/c Ratio	0.34	0.02	0.33	0.09	0.52	0.44
Uniform Delay, d1	16.8	15.6	6.4	5.6	21.7	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.2	0.1	1.3	0.3
Delay (s)	17.3	15.6	6.6	5.6	23.0	4.0
Level of Service	B	B	A	A	C	A
Approach Delay (s)	17.0		6.4			5.5
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	50.4	Sum of lost time (s)	4.5
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	17	503	271	767	1328	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	529	285	807	1398	14
RTOR Reduction (vph)	0	257	0	0	0	7
Lane Group Flow (vph)	18	272	285	807	1398	7
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	16.7	16.7	15.7	59.9	39.2	39.2
Effective Green, g (s)	16.7	16.7	15.7	59.9	39.2	39.2
Actuated g/C Ratio	0.19	0.19	0.18	0.69	0.45	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	341	305	321	2448	1602	717
v/s Ratio Prot	0.01		c0.16	0.23	c0.40	
v/s Ratio Perm		c0.17				0.00
v/c Ratio	0.05	0.89	0.89	0.33	0.87	0.01
Uniform Delay, d1	28.5	34.1	34.6	5.3	21.4	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	26.2	24.2	0.1	5.6	0.0
Delay (s)	28.6	60.3	58.8	5.4	27.0	13.0
Level of Service	C	E	E	A	C	B
Approach Delay (s)	59.3			19.4	26.9	
Approach LOS	E			B	C	

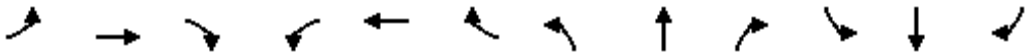
Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	86.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1	8	235	7	321	8	992	69	231	1597	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.92			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1689			1776	1556	1770	3499		1770	3526	
Flt Permitted		0.91			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1563			1345	1556	1770	3499		1770	3526	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1	8	247	7	338	8	1044	73	243	1681	36
RTOR Reduction (vph)	0	6	0	0	0	207	0	6	0	0	2	0
Lane Group Flow (vph)	0	8	0	0	254	131	8	1111	0	243	1715	0
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						
Actuated Green, G (s)		15.7			15.7	15.7	1.2	30.0		12.1	40.9	
Effective Green, g (s)		16.7			16.7	16.7	2.2	33.0		13.1	43.9	
Actuated g/C Ratio		0.23			0.23	0.23	0.03	0.46		0.18	0.61	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		365			314	363	54	1615		324	2165	
v/s Ratio Prot							0.00	0.32		c0.14	c0.49	
v/s Ratio Perm		0.01			c0.19	0.08						
v/c Ratio		0.02			0.81	0.36	0.15	0.69		0.75	0.79	
Uniform Delay, d1		21.1			25.9	22.9	33.7	15.2		27.6	10.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			13.4	0.2	0.5	1.4		8.4	2.3	
Delay (s)		21.1			39.3	23.2	34.2	16.6		36.0	12.7	
Level of Service		C			D	C	C	B		D	B	
Approach Delay (s)		21.1			30.1			16.8			15.6	
Approach LOS		C			C			B			B	

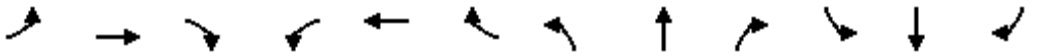
Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	71.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	0	31	58	4	24	41	1016	8	19	1698	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	1531		1779	1474	1770	3539	1544	1770	3526	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1770	1531		1779	1474	1770	3539	1544	1770	3526	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	0	33	61	4	25	43	1069	8	20	1787	38
RTOR Reduction (vph)	0	0	30	0	0	24	0	0	2	0	1	0
Lane Group Flow (vph)	0	57	3	0	65	1	43	1069	6	20	1824	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		7.6	7.6		3.2	3.2	3.5	59.5	59.5	2.0	58.0	
Effective Green, g (s)		8.6	8.6		4.2	4.2	4.5	62.5	60.5	3.0	61.0	
Actuated g/C Ratio		0.10	0.10		0.05	0.05	0.05	0.69	0.67	0.03	0.68	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		169	146		83	69	89	2458	1038	59	2390	
v/s Ratio Prot		c0.03			c0.04		c0.02	0.30		0.01	c0.52	
v/s Ratio Perm			0.00			0.00			0.00			
v/c Ratio		0.34	0.02		0.78	0.02	0.48	0.43	0.01	0.34	0.76	
Uniform Delay, d1		38.0	36.9		42.4	40.9	41.6	6.0	4.9	42.5	9.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4	0.0		34.7	0.0	1.5	0.3	0.0	1.2	2.4	
Delay (s)		38.5	36.9		77.1	41.0	43.1	6.3	4.9	43.8	12.0	
Level of Service		D	D		E	D	D	A	A	D	B	
Approach Delay (s)		37.9			67.1			7.7			12.4	
Approach LOS		D			E			A			B	

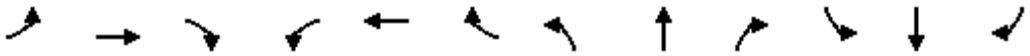
Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	261	0	407	12	4	2	819	771	0	4	1088	674
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1770		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1770		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	275	0	428	13	4	2	862	812	0	4	1145	709
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	351
Lane Group Flow (vph)	137	138	428	13	4	0	862	812	0	4	1145	358
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	11.3	11.3	90.0	4.2	4.2		25.1	55.4		1.4	33.7	33.7
Effective Green, g (s)	13.3	13.3	90.0	6.2	6.2		27.1	57.4		3.4	35.7	35.7
Actuated g/C Ratio	0.15	0.15	1.00	0.07	0.07		0.30	0.64		0.04	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	248	248	1478	122	122		1034	2257		67	1404	586
v/s Ratio Prot	0.08	c0.08		0.01	0.00		c0.25	0.23		0.00	c0.32	
v/s Ratio Perm			c0.29									0.24
v/c Ratio	0.55	0.56	0.29	0.11	0.03		0.83	0.36		0.06	0.82	0.61
Uniform Delay, d1	35.6	35.6	0.0	39.3	39.1		29.3	7.7		41.8	24.2	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.7	2.7	0.5	0.4	0.1		5.9	0.4		0.4	3.8	1.9
Delay (s)	38.2	38.3	0.5	39.7	39.2		35.2	8.1		42.1	28.0	23.5
Level of Service	D	D	A	D	D		D	A		D	C	C
Approach Delay (s)		15.3			39.5			22.1			26.3	
Approach LOS		B			D			C			C	

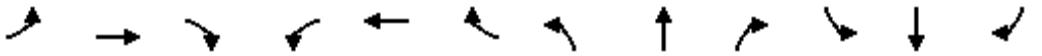
Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	1	31	0	2	31	36	1214	0	35	963	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	3.0		4.0	3.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1592			1863	1583	1770	3539		1770	3491	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1592			1863	1583	1770	3539		1770	3491	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	1	33	0	2	33	38	1278	0	37	1014	101
RTOR Reduction (vph)	0	29	0	0	0	31	0	0	0	0	5	0
Lane Group Flow (vph)	64	5	0	0	2	2	38	1278	0	37	1110	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	8.0	8.0			4.0	4.0	1.3	37.2		1.3	37.2	
Effective Green, g (s)	9.0	9.0			5.0	5.0	2.3	39.2		2.3	39.2	
Actuated g/C Ratio	0.13	0.13			0.07	0.07	0.03	0.56		0.03	0.56	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	226	203			132	112	58	1968		58	1941	
v/s Ratio Prot	c0.04	0.00			0.00		c0.02	c0.36		0.02	0.32	
v/s Ratio Perm						c0.00						
v/c Ratio	0.28	0.03			0.02	0.02	0.66	0.65		0.64	0.57	
Uniform Delay, d1	27.8	26.9			30.5	30.5	33.7	10.9		33.7	10.2	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.1			0.0	0.1	23.6	0.7		20.8	0.4	
Delay (s)	28.5	27.0			30.5	30.5	57.3	11.6		54.4	10.6	
Level of Service	C	C			C	C	E	B		D	B	
Approach Delay (s)		28.0			30.5			12.9			12.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

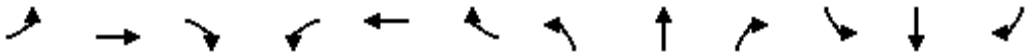


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	2	103	22	1	26	83	894	23	73	982	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1770	1593		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1770	1593		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	189	2	108	23	1	27	87	941	24	77	1034	116
RTOR Reduction (vph)	0	0	91	0	25	0	0	0	13	0	0	64
Lane Group Flow (vph)	96	95	17	23	3	0	87	941	11	77	1034	52
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.5	11.5	11.5	4.6	4.6		6.9	33.3	33.3	6.4	32.8	32.8
Effective Green, g (s)	11.5	11.5	11.5	4.6	4.6		6.9	33.3	33.3	6.4	32.8	32.8
Actuated g/C Ratio	0.16	0.16	0.16	0.06	0.06		0.09	0.46	0.46	0.09	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	264	265	249	111	100		167	1612	721	155	1588	710
v/s Ratio Prot	c0.06	0.06		c0.01	0.00		c0.05	0.27		0.04	c0.29	
v/s Ratio Perm			0.01						0.01			0.03
v/c Ratio	0.36	0.36	0.07	0.21	0.03		0.52	0.58	0.02	0.50	0.65	0.07
Uniform Delay, d1	27.5	27.5	26.2	32.5	32.1		31.5	14.8	10.9	31.8	15.7	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.0	0.3	0.0		1.4	0.6	0.0	0.9	1.1	0.1
Delay (s)	27.8	27.8	26.3	32.9	32.2		32.9	15.4	10.9	32.7	16.8	11.5
Level of Service	C	C	C	C	C		C	B	B	C	B	B
Approach Delay (s)		27.3			32.5			16.7			17.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	73.1	Sum of lost time (s)	17.3
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

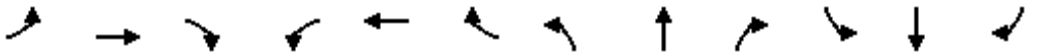
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	7	8	1	4	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	7	8	1	4	29
RTOR Reduction (vph)	0	6	0	1	0	0
Lane Group Flow (vph)	1	1	8	0	4	29
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	1.8	1.8	1.8	1.8	0.5	7.3
Effective Green, g (s)	1.8	1.8	1.8	1.8	0.5	7.3
Actuated g/C Ratio	0.09	0.09	0.09	0.09	0.03	0.38
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	167	149	176	149	46	712
v/s Ratio Prot	c0.00		0.00		0.00	c0.02
v/s Ratio Perm		0.00		0.00		
v/c Ratio	0.01	0.00	0.05	0.00	0.09	0.04
Uniform Delay, d1	7.8	7.8	7.9	7.8	9.1	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.1	0.0	0.8	0.0
Delay (s)	7.9	7.8	8.0	7.8	9.9	3.7
Level of Service	A	A	A	A	A	A
Approach Delay (s)	7.9		8.0			4.5
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.03		
Actuated Cycle Length (s)	19.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	1062	62	98	933	29	138	32	14	3	34	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1716	1583		1791	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1716	1583		1791	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1118	65	103	982	31	145	34	15	3	36	14
RTOR Reduction (vph)	0	0	32	0	0	10	0	0	13	0	13	0
Lane Group Flow (vph)	57	1118	33	103	982	21	88	91	2	0	40	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	2.0	28.2	28.2	4.4	30.6	30.6	6.6	6.6	6.6		2.0	
Effective Green, g (s)	4.0	30.2	30.2	5.4	32.6	32.6	7.6	7.6	7.6		4.0	
Actuated g/C Ratio	0.07	0.51	0.51	0.09	0.55	0.55	0.13	0.13	0.13		0.07	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	120	1815	812	162	1959	876	217	221	204		122	
v/s Ratio Prot	0.03	c0.32		c0.06	0.28		0.05	c0.05			c0.02	
v/s Ratio Perm			0.02			0.01			0.00			
v/c Ratio	0.47	0.62	0.04	0.64	0.50	0.02	0.41	0.41	0.01		0.33	
Uniform Delay, d1	26.4	10.2	7.1	25.8	8.1	6.0	23.6	23.6	22.4		26.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.1	0.7	0.0	5.9	0.3	0.0	0.5	0.5	0.0		0.6	
Delay (s)	27.5	10.9	7.2	31.7	8.4	6.0	24.0	24.0	22.4		26.7	
Level of Service	C	B	A	C	A	A	C	C	C		C	
Approach Delay (s)		11.5			10.5			23.9			26.7	
Approach LOS		B			B			C			C	

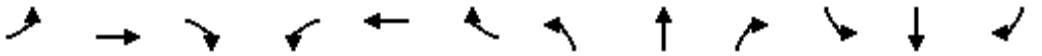
Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	11.7
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	858	221	177	932	38	230	44	112	20	36	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1711	1478	1770	1863	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1711	1478	1770	1863	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	81	903	233	186	981	40	242	46	118	21	38	71
RTOR Reduction (vph)	0	0	134	0	0	20	0	0	107	0	0	62
Lane Group Flow (vph)	81	903	99	186	981	20	143	145	11	21	38	9
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	2.7	20.2	20.2	6.1	23.6	23.6	4.1	4.1	4.1	5.0	5.0	5.0
Effective Green, g (s)	3.7	22.9	22.9	7.1	26.3	26.3	5.1	5.1	5.1	6.0	6.9	6.9
Actuated g/C Ratio	0.07	0.43	0.43	0.13	0.49	0.49	0.09	0.09	0.09	0.11	0.13	0.13
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	122	1509	630	234	1733	724	160	162	140	198	239	190
v/s Ratio Prot	0.05	c0.26		c0.11	c0.28		c0.09	0.08		0.01	c0.02	
v/s Ratio Perm			0.07			0.01			0.01			0.01
v/c Ratio	0.66	0.60	0.16	0.79	0.57	0.03	0.89	0.90	0.08	0.11	0.16	0.05
Uniform Delay, d1	24.4	11.9	9.5	22.6	9.7	7.1	24.0	24.0	22.2	21.4	20.8	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.1	0.8	0.2	15.8	0.5	0.0	40.9	40.8	0.1	0.3	0.4	0.1
Delay (s)	34.5	12.6	9.6	38.4	10.2	7.1	64.9	64.8	22.3	21.8	21.2	20.7
Level of Service	C	B	A	D	B	A	E	E	C	C	C	C
Approach Delay (s)		13.5			14.4			52.5			21.0	
Approach LOS		B			B			D			C	

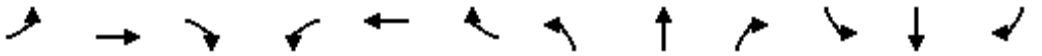
Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	8.7
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



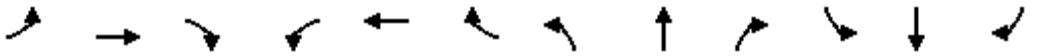
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	915	84	65	850	2	142	40	10	3	17	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		2.0	2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1793	1583		1850	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1793	1583		1850	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	87	963	88	68	895	2	149	42	11	3	18	98
RTOR Reduction (vph)	0	0	56	0	0	1	0	0	7	0	0	92
Lane Group Flow (vph)	87	963	32	68	895	1	0	191	4	0	21	6
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	7.2	31.2	31.2	6.5	30.5	30.5		31.6	31.6		4.7	4.7
Effective Green, g (s)	8.2	33.2	33.2	7.5	32.5	32.5		32.6	32.6		5.7	5.7
Actuated g/C Ratio	0.09	0.37	0.37	0.08	0.36	0.36		0.36	0.36		0.06	0.06
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.0	4.0		3.0	3.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3		3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	161	1305	584	148	1278	572		649	573		117	100
v/s Ratio Prot	0.05	c0.27		0.04	c0.25			c0.11			c0.01	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.54	0.74	0.06	0.46	0.70	0.00		0.29	0.01		0.18	0.06
Uniform Delay, d1	39.1	24.6	18.3	39.3	24.6	18.4		20.5	18.4		39.9	39.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	2.5	0.1	0.8	2.0	0.0		1.2	0.0		0.3	0.1
Delay (s)	41.1	27.1	18.4	40.1	26.5	18.4		21.6	18.4		40.2	39.7
Level of Service	D	C	B	D	C	B		C	B		D	D
Approach Delay (s)		27.5			27.5			21.5			39.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	543	380	57	477	64	426	70	43	60	44	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1708	1583		1810	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1708	1583		1810	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	572	400	60	502	67	448	74	45	63	46	19
RTOR Reduction (vph)	0	0	131	0	0	35	0	0	34	0	0	17
Lane Group Flow (vph)	42	572	269	60	502	32	260	262	11	0	109	2
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	3.0	37.6	58.6	6.2	40.8	40.8	21.0	21.0	21.0		8.2	8.2
Effective Green, g (s)	4.0	39.6	60.6	7.2	42.8	42.8	22.0	22.0	22.0		9.2	9.2
Actuated g/C Ratio	0.04	0.44	0.67	0.08	0.48	0.48	0.24	0.24	0.24		0.10	0.10
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	79	1557	1066	142	1683	753	411	418	387		185	162
v/s Ratio Prot	0.02	c0.16	0.06	c0.03	0.14		c0.15	0.15			c0.06	
v/s Ratio Perm			0.11			0.02			0.01			0.00
v/c Ratio	0.53	0.37	0.25	0.42	0.30	0.04	0.63	0.63	0.03		0.59	0.01
Uniform Delay, d1	42.1	16.8	5.8	39.4	14.4	12.6	30.4	30.3	25.9		38.6	36.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.4	0.2	0.1	0.7	0.5	0.1	3.3	3.1	0.0		3.1	0.0
Delay (s)	45.5	17.1	5.9	40.2	14.9	12.7	33.7	33.4	25.9		41.7	36.3
Level of Service	D	B	A	D	B	B	C	C	C		D	D
Approach Delay (s)		13.9			17.1			32.9			40.9	
Approach LOS		B			B			C			D	

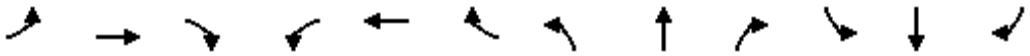
Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	14	35	24	13	4	36	1322	6	7	852	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	2.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1638		3433	1795		1676	4984	1414	1745	5187	1473
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1638		3433	1795		1676	4984	1414	1745	5187	1473
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	15	37	25	14	4	38	1392	6	7	897	202
RTOR Reduction (vph)	0	31	0	0	4	0	0	0	3	0	0	100
Lane Group Flow (vph)	173	21	0	25	14	0	38	1392	3	7	897	102
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	10.7	10.1		3.6	4.3		1.6	30.4	30.4	0.9	28.7	28.7
Effective Green, g (s)	11.7	11.1		4.6	5.3		2.6	33.8	33.8	1.9	32.1	32.1
Actuated g/C Ratio	0.18	0.18		0.07	0.08		0.04	0.53	0.53	0.03	0.51	0.51
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	325	287		249	150		69	2661	755	52	2630	747
v/s Ratio Prot	c0.10	0.01		0.01	c0.01		c0.02	c0.28		0.00	0.17	
v/s Ratio Perm									0.00			0.07
v/c Ratio	0.53	0.07		0.10	0.10		0.55	0.52	0.00	0.13	0.34	0.14
Uniform Delay, d1	23.3	21.8		27.4	26.8		29.8	9.5	6.9	29.9	9.3	8.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1		0.1	0.1		5.3	0.3	0.0	0.4	0.2	0.2
Delay (s)	24.2	21.9		27.5	26.9		35.1	9.9	6.9	30.3	9.4	8.4
Level of Service	C	C		C	C		D	A	A	C	A	A
Approach Delay (s)		23.6			27.2			10.5			9.4	
Approach LOS		C			C			B			A	

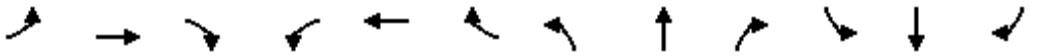
Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



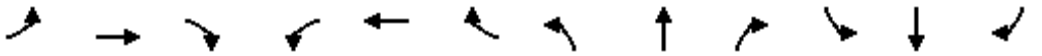
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	28	31	15	19	15	138	185	0	37	211	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.95			0.96		1.00	1.00		1.00	0.92	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1745			1758		1770	3539		1770	1722	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1775			1785		1770	3539		1770	1722	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	29	33	16	20	16	145	195	0	39	222	224
RTOR Reduction (vph)	0	31	0	0	15	0	0	0	0	0	68	0
Lane Group Flow (vph)	0	64	0	0	37	0	145	195	0	39	378	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		2.4			1.5		5.3	22.1		1.6	18.4	
Effective Green, g (s)		2.4			1.5		5.3	22.1		1.6	18.4	
Actuated g/C Ratio		0.06			0.03		0.12	0.51		0.04	0.42	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		98			61		215	1794		65	727	
v/s Ratio Prot							c0.08	c0.06		0.02	c0.22	
v/s Ratio Perm		c0.04			c0.02							
v/c Ratio		0.65			0.60		0.67	0.11		0.60	0.52	
Uniform Delay, d1		20.2			20.8		18.3	5.6		20.7	9.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.2			10.1		6.4	0.0		9.5	0.6	
Delay (s)		31.4			30.9		24.7	5.6		30.2	10.0	
Level of Service		C			C		C	A		C	A	
Approach Delay (s)		31.4			30.9			13.8			11.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	0	95	5	1	6	176	1590	5	54	2087	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1788	1583	1770	3538		1770	3539	1583
Flt Permitted		0.95	1.00		0.85	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1588	1583	1770	3538		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	0	100	5	1	6	185	1674	5	57	2197	256
RTOR Reduction (vph)	0	0	89	0	0	6	0	0	0	0	0	34
Lane Group Flow (vph)	0	104	11	0	6	0	185	1679	0	57	2197	222
Turn Type	Split		Perm	Perm		Perm	Prot			Prot		Perm
Protected Phases	4	4			3		5	2		1	6	
Permitted Phases			4	3		3						6
Actuated Green, G (s)		13.1	13.1		3.3	3.3	11.1	91.9		6.6	87.4	87.4
Effective Green, g (s)		14.1	14.1		4.3	4.3	14.1	93.9		7.6	90.4	90.4
Actuated g/C Ratio		0.11	0.11		0.03	0.03	0.11	0.70		0.06	0.68	0.68
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		187	167		51	51	187	2483		101	2391	1070
v/s Ratio Prot		c0.06					c0.10	0.47		0.03	c0.62	
v/s Ratio Perm			0.01		c0.00	0.00						0.14
v/c Ratio		0.56	0.06		0.12	0.00	0.99	0.68		0.56	0.92	0.21
Uniform Delay, d1		56.9	53.9		62.9	62.7	59.8	11.3		61.5	18.6	8.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.0	0.1		0.4	0.0	61.9	0.8		4.2	6.4	0.1
Delay (s)		58.9	54.0		63.3	62.7	121.7	12.1		65.7	24.9	8.3
Level of Service		E	D		E	E	F	B		E	C	A
Approach Delay (s)		56.5			63.0			23.0			24.2	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	133.8	Sum of lost time (s)	10.9
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

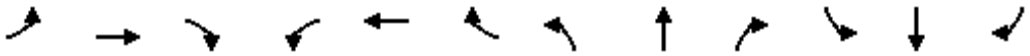


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	301	7	213	13	15	41	218	1454	5	5	1532	633
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	3.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	0.85		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1592		1770	1863	1583	3433	3537		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1592		1770	1863	1583	3433	3537		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	317	7	224	14	16	43	229	1531	5	5	1613	666
RTOR Reduction (vph)	0	110	0	0	0	42	0	0	0	0	0	150
Lane Group Flow (vph)	317	121	0	14	16	1	229	1536	0	5	1613	516
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						6
Actuated Green, G (s)	15.1	15.1		1.7	1.7	1.7	6.1	53.1		0.7	46.7	46.7
Effective Green, g (s)	16.1	16.1		2.7	2.7	2.7	7.1	55.6		1.7	49.2	49.2
Actuated g/C Ratio	0.18	0.18		0.03	0.03	0.03	0.08	0.64		0.02	0.56	0.56
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		3.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0		2.0	2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	635	294		55	58	49	280	2258		35	1999	894
v/s Ratio Prot	c0.09	0.08		0.01	c0.01		c0.07	0.43		0.00	c0.46	
v/s Ratio Perm						0.00						0.33
v/c Ratio	0.50	0.41		0.25	0.28	0.03	0.82	0.68		0.14	0.81	0.58
Uniform Delay, d1	31.9	31.3		41.2	41.2	40.9	39.4	10.1		42.0	15.2	12.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.9		0.9	0.9	0.1	15.9	1.1		0.7	2.9	1.5
Delay (s)	32.5	32.3		42.1	42.2	41.0	55.3	11.2		42.7	18.0	13.7
Level of Service	C	C		D	D	D	E	B		D	B	B
Approach Delay (s)		32.4			41.5			16.9			16.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

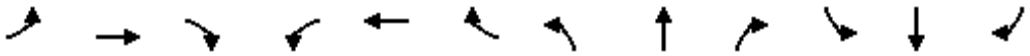
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	771	763	830	452	1040	795
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	2.0
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	812	803	874	476	1095	837
RTOR Reduction (vph)	0	11	0	323	0	0
Lane Group Flow (vph)	812	792	874	153	1095	837
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	23.1	50.0	26.7	26.7	26.9	59.9
Effective Green, g (s)	24.1	54.6	29.0	29.0	29.2	60.9
Actuated g/C Ratio	0.27	0.61	0.32	0.32	0.32	0.68
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	3.0
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	919	990	1140	510	1114	2395
v/s Ratio Prot	c0.24	0.26	c0.25		c0.32	0.24
v/s Ratio Perm		0.24		0.10		
v/c Ratio	0.88	0.80	0.77	0.30	0.98	0.35
Uniform Delay, d1	31.6	13.5	27.5	22.9	30.2	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	4.3	3.3	0.4	22.7	0.4
Delay (s)	41.4	17.8	30.8	23.3	52.8	6.6
Level of Service	D	B	C	C	D	A
Approach Delay (s)	29.7		28.2			32.8
Approach LOS	C		C			C

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.7
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	294	15	27	25	10	53	42	921	0	70	1317	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.92		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1665			1688		1770	3539		1770	3479	
Flt Permitted	0.95	0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1665			1688		1770	3539		1770	3479	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	309	16	28	26	11	56	44	969	0	74	1386	177
RTOR Reduction (vph)	0	5	0	0	42	0	0	0	0	0	7	0
Lane Group Flow (vph)	179	169	0	0	51	0	44	969	0	74	1556	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	17.3	17.3			7.8		4.8	79.7		8.3	82.8	
Effective Green, g (s)	17.3	17.3			7.8		4.8	79.7		8.3	82.8	
Actuated g/C Ratio	0.13	0.13			0.06		0.04	0.61		0.06	0.64	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Vehicle Extension (s)	2.0	2.0			2.0		2.0	4.2		2.0	3.2	
Lane Grp Cap (vph)	224	222			101		65	2170		113	2216	
v/s Ratio Prot	c0.11	0.10			c0.03		0.02	0.27		c0.04	c0.45	
v/s Ratio Perm												
v/c Ratio	0.80	0.76			0.50		0.68	0.45		0.65	0.70	
Uniform Delay, d1	54.7	54.4			59.2		61.8	13.4		59.5	15.5	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.7	12.9			1.4		19.7	0.7		9.9	1.0	
Delay (s)	71.4	67.2			60.6		81.6	14.1		69.4	16.5	
Level of Service	E	E			E		F	B		E	B	
Approach Delay (s)		69.3			60.6			17.0			18.9	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.3
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

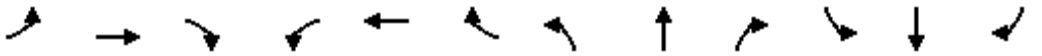


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	20	128	133	7	48	131	787	20	25	1144	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1778	1583	1770	3526		1770	3523	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1778	1583	1770	3526		1770	3523	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	166	21	135	140	7	51	138	828	21	26	1204	38
RTOR Reduction (vph)	0	0	117	0	0	46	0	1	0	0	1	0
Lane Group Flow (vph)	0	187	18	0	147	5	138	848	0	26	1241	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		17.2	17.2		13.9	13.9	13.4	78.4		3.6	68.6	
Effective Green, g (s)		17.2	17.2		13.9	13.9	13.4	78.4		3.6	68.6	
Actuated g/C Ratio		0.13	0.13		0.11	0.11	0.10	0.60		0.03	0.53	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)		236	209		190	169	182	2126		49	1859	
v/s Ratio Prot		c0.10			c0.08		c0.08	0.24		0.01	c0.35	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.79	0.09		0.77	0.03	0.76	0.40		0.53	0.67	
Uniform Delay, d1		54.7	49.5		56.5	52.0	56.7	13.5		62.4	22.4	
Progression Factor		1.00	1.00		1.00	1.00	0.89	1.00		1.00	1.00	
Incremental Delay, d2		15.5	0.1		16.2	0.0	5.5	0.2		5.4	1.0	
Delay (s)		70.2	49.6		72.7	52.1	55.9	13.7		67.8	23.4	
Level of Service		E	D		E	D	E	B		E	C	
Approach Delay (s)		61.5			67.4			19.6			24.3	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

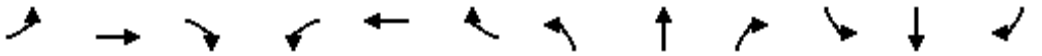
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	71	286	671	48	390	732
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	75	301	706	51	411	771
RTOR Reduction (vph)	0	227	0	36	0	0
Lane Group Flow (vph)	75	74	706	15	411	771
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	11.8	11.8	13.9	13.9	16.6	34.5
Effective Green, g (s)	13.8	13.8	16.6	16.6	18.6	37.2
Actuated g/C Ratio	0.25	0.25	0.30	0.30	0.33	0.66
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	846	390	1507	469	588	3378
v/s Ratio Prot	0.02		c0.14		c0.23	0.15
v/s Ratio Perm		c0.05		0.01		
v/c Ratio	0.09	0.19	0.47	0.03	0.70	0.23
Uniform Delay, d1	16.3	16.7	16.1	14.0	16.3	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	0.4	0.0	2.9	0.1
Delay (s)	16.3	16.8	16.5	14.0	19.2	3.8
Level of Service	B	B	B	B	B	A
Approach Delay (s)	16.7		16.3			9.1
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	725	32	137	758	122	115	17	474	252	6	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5053		1770	5085	1583		1785	1583	1681	1689	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5053		1770	5085	1583		1785	1583	1681	1689	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	763	34	144	798	128	121	18	499	265	6	87
RTOR Reduction (vph)	0	5	0	0	0	83	0	0	185	0	0	72
Lane Group Flow (vph)	74	792	0	144	798	45	0	139	314	135	136	15
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	6.1	24.1		8.2	26.2	26.2		19.1	19.1	12.7	12.7	12.7
Effective Green, g (s)	7.1	26.4		9.2	28.5	28.5		20.1	20.1	13.7	13.7	13.7
Actuated g/C Ratio	0.09	0.32		0.11	0.35	0.35		0.25	0.25	0.17	0.17	0.17
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	154	1639		200	1780	554		441	391	283	284	266
v/s Ratio Prot	0.04	0.16		c0.08	c0.16			0.08		0.08	c0.08	
v/s Ratio Perm						0.03			c0.20			0.01
v/c Ratio	0.48	0.48		0.72	0.45	0.08		0.32	0.80	0.48	0.48	0.06
Uniform Delay, d1	35.4	22.0		34.9	20.4	17.7		25.0	28.8	30.6	30.6	28.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.5		9.9	0.4	0.1		0.2	10.8	0.5	0.5	0.0
Delay (s)	36.3	22.5		44.7	20.8	17.8		25.2	39.6	31.1	31.1	28.4
Level of Service	D	C		D	C	B		C	D	C	C	C
Approach Delay (s)		23.7			23.6			36.5			30.4	
Approach LOS		C			C			D			C	

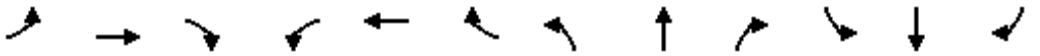
Intersection Summary			
HCM Average Control Delay	27.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	198	672	529	80	592	183	480	683	57	161	636	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	208	707	557	84	623	193	505	719	60	169	669	347
RTOR Reduction (vph)	0	0	212	0	0	135	0	0	43	0	0	190
Lane Group Flow (vph)	208	707	345	84	623	58	505	719	17	169	669	157
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.2	22.7	22.7	6.1	20.2	20.2	10.2	20.5	20.5	8.2	18.5	18.5
Effective Green, g (s)	9.2	24.7	24.7	7.1	22.9	22.9	11.2	22.8	21.5	9.2	20.8	20.8
Actuated g/C Ratio	0.12	0.33	0.33	0.09	0.30	0.30	0.15	0.30	0.28	0.12	0.27	0.27
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	215	608	517	166	1071	479	508	1532	450	432	1446	450
v/s Ratio Prot	c0.12	c0.38		0.05	0.18		c0.15	c0.14		0.05	0.13	
v/s Ratio Perm			0.22			0.04			0.01			0.10
v/c Ratio	0.97	1.16	0.67	0.51	0.58	0.12	0.99	0.47	0.04	0.39	0.46	0.35
Uniform Delay, d1	33.1	25.5	22.0	32.6	22.3	19.1	32.2	21.5	19.6	30.7	22.8	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	51.3	90.4	4.2	0.9	1.0	0.2	38.1	0.4	0.1	0.2	0.4	0.7
Delay (s)	84.4	115.9	26.2	33.5	23.4	19.3	70.4	21.9	19.7	30.9	23.2	22.8
Level of Service	F	F	C	C	C	B	E	C	B	C	C	C
Approach Delay (s)		77.5			23.5			40.8			24.2	
Approach LOS		E			C			D			C	

Intersection Summary			
HCM Average Control Delay	44.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

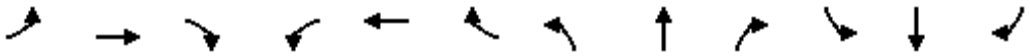


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	23	105	154	13	391	95	770	45	289	894	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.91	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1793	1583		1808	1597	1770	3731		1832	5790	1639
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1793	1583		1808	1597	1770	3731		1832	5790	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	82	24	111	162	14	412	100	811	47	304	941	76
RTOR Reduction (vph)	0	0	100	0	0	89	0	5	0	0	0	47
Lane Group Flow (vph)	0	106	11	0	176	323	100	853	0	304	941	29
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		6.7	6.7		12.1	24.5	6.5	20.5		12.4	26.4	26.4
Effective Green, g (s)		6.7	6.7		12.1	26.5	6.5	22.8		13.4	28.7	26.4
Actuated g/C Ratio		0.10	0.10		0.18	0.38	0.09	0.33		0.19	0.42	0.38
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		174	154		317	683	167	1233		356	2408	627
v/s Ratio Prot		c0.06			c0.10	0.09	0.06	c0.23		c0.17	0.16	
v/s Ratio Perm			0.01			0.11						0.02
v/c Ratio		0.61	0.07		0.56	0.47	0.60	0.69		0.85	0.39	0.05
Uniform Delay, d1		29.9	28.3		26.0	16.0	30.0	20.1		26.9	14.1	13.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		4.1	0.1		1.2	0.2	3.8	2.2		17.1	0.2	0.1
Delay (s)		34.0	28.4		27.2	16.2	33.8	22.2		44.0	14.3	13.5
Level of Service		C	C		C	B	C	C		D	B	B
Approach Delay (s)		31.1			19.5			23.5			21.1	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

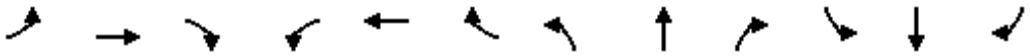
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	3	66	844	7	217	912
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	1.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3535		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3535		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	69	888	7	228	960
RTOR Reduction (vph)	0	58	1	0	0	0
Lane Group Flow (vph)	3	11	894	0	228	960
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	6.0	6.0	19.2		7.5	32.5
Effective Green, g (s)	7.0	7.0	21.2		8.5	34.5
Actuated g/C Ratio	0.15	0.15	0.47		0.19	0.76
Clearance Time (s)	4.0	4.0	4.8		4.0	3.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	272	244	1647		331	2683
v/s Ratio Prot	0.00		c0.25		c0.13	0.27
v/s Ratio Perm		c0.01				
v/c Ratio	0.01	0.04	0.54		0.69	0.36
Uniform Delay, d1	16.3	16.4	8.7		17.3	1.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.1	0.4		5.9	0.1
Delay (s)	16.3	16.5	9.1		23.1	1.9
Level of Service	B	B	A		C	A
Approach Delay (s)	16.5		9.1			6.0
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	8.8
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	24	0	22	0	1379	29	31	1633	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		2.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3528		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3528		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	25	0	23	0	1452	31	33	1719	0
RTOR Reduction (vph)	0	0	0	0	0	22	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	25	0	1	0	1482	0	33	1719	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				2.2		2.2		46.0		1.5	50.5	
Effective Green, g (s)				3.2		3.2		48.0		2.5	52.5	
Actuated g/C Ratio				0.05		0.05		0.69		0.04	0.76	
Clearance Time (s)				4.0		4.0		4.9		3.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				82		73		2444		64	2681	
v/s Ratio Prot				c0.01				0.42		0.02	c0.49	
v/s Ratio Perm						0.00						
v/c Ratio				0.30		0.01		0.61		0.52	0.64	
Uniform Delay, d1				32.0		31.5		5.6		32.8	4.0	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.8		0.0		0.7		2.9	0.8	
Delay (s)				32.7		31.6		6.3		35.7	4.7	
Level of Service				C		C		A		D	A	
Approach Delay (s)		0.0			32.2			6.3			5.3	
Approach LOS		A			C			A			A	

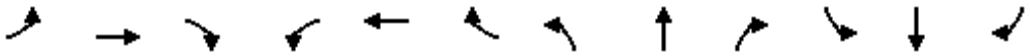
Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	13.6
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	10	54	62	17	65	34	1638	43	30	1799	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.88		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1605		1770	3521		1770	3525	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1605		1770	3521		1770	3525	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	11	57	65	18	68	36	1724	45	32	1894	38
RTOR Reduction (vph)	0	0	53	0	61	0	0	1	0	0	1	0
Lane Group Flow (vph)	64	11	4	65	25	0	36	1768	0	32	1931	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3									
Actuated Green, G (s)	6.1	6.1	6.1	7.8	7.8		3.8	55.1		3.8	55.5	
Effective Green, g (s)	7.1	7.1	7.1	8.8	8.8		4.8	57.1		4.8	57.5	
Actuated g/C Ratio	0.08	0.08	0.08	0.10	0.10		0.05	0.63		0.05	0.64	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	139	147	125	173	157		94	2231		94	2250	
v/s Ratio Prot	c0.04	0.01		c0.04	0.02		c0.02	0.50		0.02	c0.55	
v/s Ratio Perm			0.00									
v/c Ratio	0.46	0.07	0.04	0.38	0.16		0.38	0.79		0.34	0.86	
Uniform Delay, d1	39.7	38.5	38.3	38.1	37.3		41.2	12.1		41.1	13.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	0.2	0.1	1.1	0.4		0.9	2.2		0.8	3.6	
Delay (s)	41.7	38.6	38.4	39.2	37.6		42.2	14.3		41.9	16.6	
Level of Service	D	D	D	D	D		D	B		D	B	
Approach Delay (s)		40.0			38.3			14.9			17.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.1	Sum of lost time (s)	11.9
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

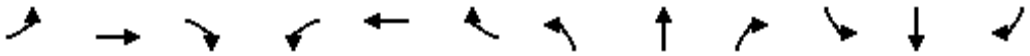
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	26	10	104	31	58	5	2170	9	39	2502	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2013			1963		1770	4984		1770	4965	
Flt Permitted		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2013			1963		1770	4984		1770	4965	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	27	11	109	33	61	5	2284	9	41	2634	77
RTOR Reduction (vph)	0	3	0	0	11	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	93	0	0	192	0	5	2293	0	41	2709	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split			Split			Prot			Prot		
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)		10.3			19.2		2.4	95.8		7.0	100.4	
Effective Green, g (s)		11.3			20.2		3.4	98.5		8.0	103.1	
Actuated g/C Ratio		0.08			0.13		0.02	0.66		0.05	0.69	
Clearance Time (s)		4.0			4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0		2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		152			264		40	3273		94	3413	
v/s Ratio Prot		c0.05			c0.10		0.00	c0.46		0.02	c0.55	
v/s Ratio Perm												
v/c Ratio		0.61			0.73		0.12	0.70		0.44	0.79	
Uniform Delay, d1		67.2			62.2		71.8	16.4		68.8	16.1	
Progression Factor		1.00			1.00		0.77	0.36		0.99	1.43	
Incremental Delay, d2		5.1			8.1		0.4	0.5		0.6	1.0	
Delay (s)		72.3			70.4		55.5	6.4		69.0	24.2	
Level of Service		E			E		E	A		E	C	
Approach Delay (s)		72.3			70.4			6.5			24.8	
Approach LOS		E			E			A			C	

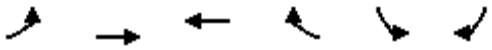
Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



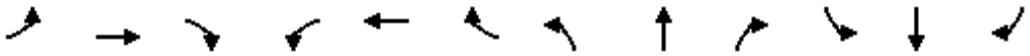
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	0	201	386	0	7	46	2194	40	5	2444	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00		0.97	1.00		0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1540	1770		1554	1770	5068		1770	5016	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1540	1770		1554	1770	5068		1770	5016	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	0	212	406	0	7	48	2309	42	5	2573	196
RTOR Reduction (vph)	0	0	72	0	0	4	0	1	0	0	5	0
Lane Group Flow (vph)	27	0	140	406	0	3	48	2350	0	5	2764	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	37.4		37.4	37.4		37.4	6.4	95.3		0.6	89.5	
Effective Green, g (s)	38.4		38.4	38.4		38.4	7.4	96.8		2.6	91.0	
Actuated g/C Ratio	0.26		0.26	0.26		0.26	0.05	0.65		0.02	0.61	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	453		394	453		398	87	3271		31	3043	
v/s Ratio Prot	0.02			c0.23			c0.03	0.46		0.00	c0.55	
v/s Ratio Perm			0.09			0.00						
v/c Ratio	0.06		0.35	0.90		0.01	0.55	0.72		0.16	0.91	
Uniform Delay, d1	42.2		45.7	53.9		41.6	69.7	17.6		72.6	25.8	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		0.74	0.72	
Incremental Delay, d2	0.0		0.2	19.4		0.0	4.2	1.4		0.6	3.0	
Delay (s)	42.2		45.9	73.3		41.6	73.9	19.0		54.4	21.7	
Level of Service	D		D	E		D	E	B		D	C	
Approach Delay (s)		45.4			72.8			20.1			21.7	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



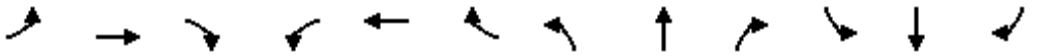
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	3	310	341	51	229	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	3.9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	326	359	54	241	32
RTOR Reduction (vph)	0	0	0	32	0	23
Lane Group Flow (vph)	3	326	359	22	241	9
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.6	20.2	15.6	15.6	10.8	10.8
Effective Green, g (s)	1.6	21.2	16.6	16.6	11.8	11.8
Actuated g/C Ratio	0.04	0.51	0.40	0.40	0.28	0.28
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	2.0
Lane Grp Cap (vph)	68	1804	1412	632	502	449
v/s Ratio Prot	0.00	c0.09	c0.10		c0.14	
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.04	0.18	0.25	0.03	0.48	0.02
Uniform Delay, d1	19.3	5.5	8.4	7.6	12.4	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.2	0.0	0.3	0.0
Delay (s)	19.4	5.6	8.5	7.7	12.6	10.7
Level of Service	B	A	A	A	B	B
Approach Delay (s)		5.7	8.4		12.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	13.3
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



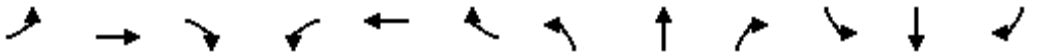
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	399	510	162	299	151	402	531	167	30	479	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4983	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4983	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	420	537	171	315	159	423	559	176	32	504	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	24	0
Lane Group Flow (vph)	42	420	537	171	315	159	423	559	176	32	558	0
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			
Actuated Green, G (s)	3.4	17.6	84.7	8.1	22.7	84.7	20.1	37.4	84.7	2.6	19.9	
Effective Green, g (s)	4.4	20.3	84.7	9.1	25.4	84.7	21.1	39.7	84.7	3.6	22.2	
Actuated g/C Ratio	0.05	0.24	1.00	0.11	0.30	1.00	0.25	0.47	1.00	0.04	0.26	
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	92	848	1583	190	1061	1583	441	1659	1583	75	1306	
v/s Ratio Prot	0.02	c0.12		c0.10	0.09		c0.24	0.16		0.02	c0.11	
v/s Ratio Perm			0.34			0.10			0.11			
v/c Ratio	0.46	0.50	0.34	0.90	0.30	0.10	0.96	0.34	0.11	0.43	0.43	
Uniform Delay, d1	39.0	27.8	0.0	37.4	22.8	0.0	31.4	14.2	0.0	39.5	26.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.7	0.6	37.9	0.3	0.1	31.9	0.2	0.1	1.4	0.5	
Delay (s)	40.3	28.5	0.6	75.3	23.1	0.1	63.3	14.4	0.1	41.0	26.4	
Level of Service	D	C	A	E	C	A	E	B	A	D	C	
Approach Delay (s)		14.0			31.3			30.1			27.2	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	26	109	162	33	127	44	842	29	63	1375	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1789	1583	1770	3521		1770	3526	
Flt Permitted		0.93	1.00		0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1734	1583		1376	1583	1770	3521		1770	3526	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	27	115	171	35	134	46	886	31	66	1447	36
RTOR Reduction (vph)	0	0	62	0	0	104	0	4	0	0	3	0
Lane Group Flow (vph)	0	34	53	0	206	30	46	913	0	66	1480	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		11.7	11.7		11.7	11.7	2.8	30.7		3.0	31.9	
Effective Green, g (s)		13.3	13.3		13.3	13.3	3.8	33.4		4.0	34.6	
Actuated g/C Ratio		0.22	0.22		0.22	0.22	0.06	0.56		0.07	0.58	
Clearance Time (s)		4.9	4.9		4.9	4.9	3.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		384	351		305	351	112	1960		118	2033	
v/s Ratio Prot							0.03	c0.26		0.04	c0.42	
v/s Ratio Perm		0.02	0.03		c0.15	0.02						
v/c Ratio		0.09	0.15		0.68	0.08	0.41	0.47		0.56	0.73	
Uniform Delay, d1		18.5	18.8		21.4	18.5	27.0	8.0		27.1	9.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.1		5.3	0.1	0.9	0.2		3.2	2.3	
Delay (s)		18.6	18.9		26.7	18.6	27.9	8.2		30.4	11.6	
Level of Service		B	B		C	B	C	A		C	B	
Approach Delay (s)		18.9			23.5			9.1			12.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.3
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

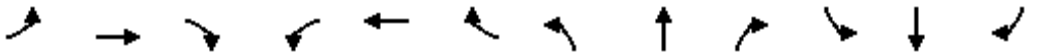


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2	1	53	5	55	1	911	27	95	1561	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1583		1781	1583	1770	3524		1770	3537	
Flt Permitted		0.86	1.00		0.76	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1596	1583		1417	1583	1770	3524		1770	3537	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	2	1	56	5	58	1	959	28	100	1643	6
RTOR Reduction (vph)	0	0	1	0	0	50	0	2	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	61	8	1	985	0	100	1649	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4		4						
Actuated Green, G (s)		12.1	12.1		12.1	12.1	0.6	56.0		8.2	63.6	
Effective Green, g (s)		13.1	13.1		13.1	13.1	1.6	59.0		9.2	66.6	
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.02	0.66		0.10	0.74	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	4.3		3.0	4.3	
Lane Grp Cap (vph)		232	230		206	230	31	2310		181	2617	
v/s Ratio Prot							0.00	c0.28		0.06	c0.47	
v/s Ratio Perm		0.01	0.00		c0.04	0.01						
v/c Ratio		0.04	0.00		0.30	0.04	0.03	0.43		0.55	0.63	
Uniform Delay, d1		33.0	32.9		34.3	33.0	43.4	7.4		38.4	5.7	
Progression Factor		1.00	1.00		1.00	1.00	0.71	0.11		1.00	1.00	
Incremental Delay, d2		0.1	0.0		0.8	0.1	0.1	0.2		3.6	1.2	
Delay (s)		33.1	32.9		35.1	33.1	31.0	1.0		42.1	6.9	
Level of Service		C	C		D	C	C	A		D	A	
Approach Delay (s)		33.1			34.1			1.0			8.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

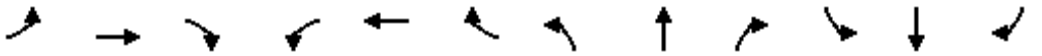
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	6	101	876	58	128	1490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3506		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3506		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	106	922	61	135	1568
RTOR Reduction (vph)	0	93	5	0	0	0
Lane Group Flow (vph)	6	13	978	0	135	1568
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	9.8	9.8	47.8		18.7	70.5
Effective Green, g (s)	10.8	10.8	50.8		19.7	73.5
Actuated g/C Ratio	0.12	0.12	0.56		0.22	0.82
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	212	190	1979		387	2890
v/s Ratio Prot	0.00		0.28		0.08	c0.44
v/s Ratio Perm		c0.01				
v/c Ratio	0.03	0.07	0.49		0.35	0.54
Uniform Delay, d1	35.0	35.1	11.8		29.7	2.7
Progression Factor	1.00	1.00	1.00		0.77	0.09
Incremental Delay, d2	0.0	0.1	0.2		0.2	0.6
Delay (s)	35.0	35.2	12.1		23.2	0.9
Level of Service	C	D	B		C	A
Approach Delay (s)	35.2		12.1			2.6
Approach LOS	D		B			A

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



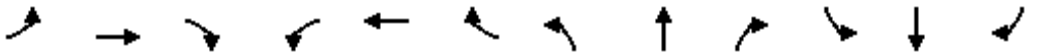
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	274	0	235	2	0	2	248	748	4	0	910	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5			3.0		3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00	0.98			1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85			0.93		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400	1542			1695		1660	3417	1544		3491	1500
Flt Permitted	0.95	1.00			0.98		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400	1542			1695		1660	3417	1544		3491	1500
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	288	0	247	2	0	2	261	787	4	0	958	147
RTOR Reduction (vph)	0	189	0	0	2	0	0	0	1	0	0	89
Lane Group Flow (vph)	288	58	0	0	2	0	261	787	3	0	958	58
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.9	12.9			1.3		8.3	35.0	35.0		22.7	22.7
Effective Green, g (s)	15.4	15.4			2.3		9.3	38.4	38.4		26.1	26.1
Actuated g/C Ratio	0.23	0.23			0.04		0.14	0.59	0.59		0.40	0.40
Clearance Time (s)	6.0	6.0			4.0		4.0	6.4	6.4		6.4	6.4
Vehicle Extension (s)	4.1	4.1			2.0		2.0	4.3	4.3		4.3	4.3
Lane Grp Cap (vph)	798	362			59		235	2000	904		1389	597
v/s Ratio Prot	c0.08	0.04			c0.00		c0.16	0.23			c0.27	
v/s Ratio Perm									0.00			0.04
v/c Ratio	0.36	0.16			0.04		1.11	0.39	0.00		0.69	0.10
Uniform Delay, d1	21.0	20.0			30.6		28.1	7.3	5.6		16.4	12.4
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.3			0.1		91.6	0.2	0.0		1.6	0.1
Delay (s)	21.4	20.3			30.7		119.7	7.5	5.7		18.0	12.5
Level of Service	C	C			C		F	A	A		B	B
Approach Delay (s)		20.9			30.7			35.4			17.3	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



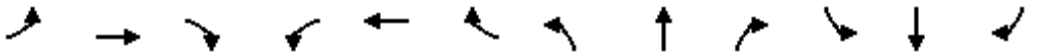
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	0	53	1	0	6	118	987	1	1	1085	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4	6.4	4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	0	56	1	0	6	124	1039	1	1	1142	63
RTOR Reduction (vph)	0	0	49	0	0	6	0	0	0	0	0	18
Lane Group Flow (vph)	0	27	7	0	1	0	124	1039	1	1	1142	45
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)		7.8	7.8		4.0	4.0	7.2	43.2	43.2	0.7	36.7	36.7
Effective Green, g (s)		7.8	8.8		4.0	4.0	8.2	44.2	43.2	0.7	37.7	37.7
Actuated g/C Ratio		0.11	0.12		0.05	0.05	0.11	0.60	0.58	0.01	0.51	0.51
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)		186	188		96	85	196	2111	923	17	1801	805
v/s Ratio Prot		c0.02			c0.00		c0.07	0.29		0.00	c0.32	
v/s Ratio Perm			0.00			0.00			0.00			0.03
v/c Ratio		0.15	0.04		0.01	0.00	0.63	0.49	0.00	0.06	0.63	0.06
Uniform Delay, d1		30.1	28.9		33.2	33.2	31.5	8.5	6.4	36.4	13.2	9.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.0		0.0	0.0	4.8	0.3	0.0	0.5	0.9	0.0
Delay (s)		30.3	28.9		33.2	33.2	36.3	8.8	6.4	36.9	14.1	9.2
Level of Service		C	C		C	C	D	A	A	D	B	A
Approach Delay (s)		29.4			33.2			11.8			13.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	16.4
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



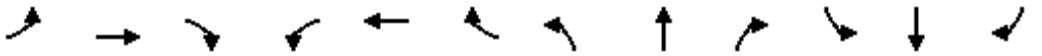
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	1	502	7	1	5	295	1004	10	4	1053	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1610	3034		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1610	3034		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	108	1	528	7	1	5	311	1057	11	4	1108	77
RTOR Reduction (vph)	0	0	278	0	8	0	0	0	5	0	0	48
Lane Group Flow (vph)	54	55	250	5	0	0	311	1057	6	4	1108	29
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	14.0	14.0	14.0	1.3	1.3		10.6	33.1	33.1	0.8	22.9	22.9
Effective Green, g (s)	16.7	16.7	16.7	2.3	2.3		11.6	36.5	36.5	1.8	26.3	26.3
Actuated g/C Ratio	0.24	0.24	0.24	0.03	0.03		0.16	0.52	0.52	0.03	0.37	0.37
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	398	399	374	52	99		291	1830	818	45	1894	590
v/s Ratio Prot	0.03	0.03		c0.00	0.00		c0.18	c0.30		0.00	0.22	
v/s Ratio Perm			c0.16						0.00			0.02
v/c Ratio	0.14	0.14	0.67	0.10	0.00		1.07	0.58	0.01	0.09	0.59	0.05
Uniform Delay, d1	21.3	21.3	24.4	33.1	33.0		29.5	11.7	8.3	33.6	17.8	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	5.2	1.3	0.0		72.2	0.7	0.0	0.3	0.6	0.1
Delay (s)	21.5	21.5	29.6	34.4	33.1		101.7	12.4	8.3	33.9	18.4	14.2
Level of Service	C	C	C	C	C		F	B	A	C	B	B
Approach Delay (s)		28.2			33.6			32.5			18.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	10.7
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	256	4	289	121	5	65	145	1372	45	94	1558	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.0	
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1688	1583		1777	1583	1770	5061		1770	5005	
Flt Permitted	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1688	1583		1777	1583	1770	5061		1770	5005	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	269	4	304	127	5	68	153	1444	47	99	1640	193
RTOR Reduction (vph)	0	0	264	0	0	60	0	2	0	0	10	0
Lane Group Flow (vph)	137	136	40	0	132	8	153	1489	0	99	1823	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)	14.8	14.8	14.8		13.0	13.0	14.0	63.0		11.5	61.2	
Effective Green, g (s)	15.8	15.8	15.8		14.0	14.0	15.0	66.0		12.5	64.2	
Actuated g/C Ratio	0.13	0.13	0.13		0.12	0.12	0.12	0.55		0.10	0.54	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3		2.0	5.3	
Lane Grp Cap (vph)	221	222	208		207	185	221	2784		184	2678	
v/s Ratio Prot	c0.08	0.08			c0.07		c0.09	0.29		0.06	c0.36	
v/s Ratio Perm			0.03			0.01						
v/c Ratio	0.62	0.61	0.19		0.64	0.04	0.69	0.53		0.54	0.68	
Uniform Delay, d1	49.3	49.2	46.4		50.6	47.1	50.3	17.2		51.0	20.4	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	3.5	0.2		4.7	0.0	7.3	0.7		1.5	1.0	
Delay (s)	52.9	52.7	46.6		55.3	47.1	57.6	18.0		52.5	21.4	
Level of Service	D	D	D		E	D	E	B		D	C	
Approach Delay (s)		49.5			52.5			21.6			23.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

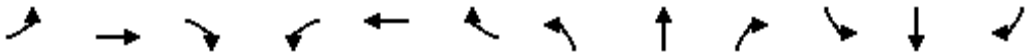


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	328	112	74	24	87	37	257	1430	23	49	2079	392
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.91	0.91			0.95		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.97			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3207			3379		3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.72			0.75		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	2376			2552		3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	345	118	78	25	92	39	271	1505	24	52	2188	413
RTOR Reduction (vph)	0	17	0	0	28	0	0	0	11	0	0	143
Lane Group Flow (vph)	183	341	0	0	128	0	271	1505	13	52	2188	270
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	16.2	35.1			13.2		11.6	63.7	63.7	7.2	59.3	59.3
Effective Green, g (s)	17.2	37.8			15.9		12.6	66.7	66.7	8.2	62.3	62.3
Actuated g/C Ratio	0.14	0.31			0.13		0.10	0.56	0.56	0.07	0.52	0.52
Clearance Time (s)	4.0	5.7			5.7		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3			4.3		2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	231	879			338		360	2826	880	121	2640	822
v/s Ratio Prot	c0.11	0.06					c0.08	0.30		0.03	c0.43	
v/s Ratio Perm		c0.06			0.05				0.01			0.17
v/c Ratio	0.79	0.39			1.22dr		0.75	0.53	0.02	0.43	0.83	0.33
Uniform Delay, d1	49.7	32.1			47.5		52.2	16.8	11.9	53.7	24.3	16.7
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.8	0.5			1.1		7.7	0.7	0.0	0.9	2.5	0.4
Delay (s)	65.4	32.5			48.7		59.9	17.5	12.0	54.5	26.9	17.1
Level of Service	E	C			D		E	B	B	D	C	B
Approach Delay (s)		43.7			48.7			23.8			25.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

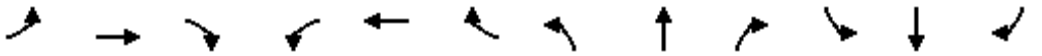
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	553	17	14	258	8	14	2	15	7	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	3523		1770	3524			1702			1708	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (perm)	1770	3523		1770	3524			1702			1708	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	582	18	15	272	8	15	2	16	7	0	5
RTOR Reduction (vph)	0	2	0	0	2	0	0	14	0	0	5	0
Lane Group Flow (vph)	6	598	0	15	278	0	0	19	0	0	7	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.8	25.4		0.6	25.2			4.1			0.9	
Effective Green, g (s)	1.8	28.1		1.6	27.9			5.1			1.9	
Actuated g/C Ratio	0.04	0.58		0.03	0.57			0.10			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	65	2033		58	2019			178			67	
v/s Ratio Prot	0.00	c0.17		c0.01	0.08			c0.01			c0.00	
v/s Ratio Perm												
v/c Ratio	0.09	0.29		0.26	0.14			0.10			0.11	
Uniform Delay, d1	22.7	5.2		23.0	4.8			19.7			22.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.1		0.9	0.1			0.1			0.3	
Delay (s)	22.9	5.4		23.8	4.9			19.8			22.8	
Level of Service	C	A		C	A			B			C	
Approach Delay (s)		5.6			5.8			19.8			22.8	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	159	540	12	39	322	34	4	0	13	12	0	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.90			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1649			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1649			1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	167	568	13	41	339	36	4	0	14	13	0	129
RTOR Reduction (vph)	0	0	6	0	0	22	0	13	0	0	0	105
Lane Group Flow (vph)	167	568	7	41	339	14	0	5	0	0	13	24
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	7.7	23.9	23.9	2.3	18.5	18.5		1.0			8.5	8.5
Effective Green, g (s)	8.7	26.9	26.9	3.3	21.5	21.5		2.0			10.5	10.5
Actuated g/C Ratio	0.16	0.49	0.49	0.06	0.39	0.39		0.04			0.19	0.19
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	278	1718	769	105	1373	614		60			335	300
v/s Ratio Prot	c0.09	c0.16		0.02	0.10			c0.00			0.01	
v/s Ratio Perm			0.00			0.01						c0.02
v/c Ratio	0.60	0.33	0.01	0.39	0.25	0.02		0.08			0.04	0.08
Uniform Delay, d1	21.7	8.7	7.4	25.1	11.5	10.5		25.8			18.3	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	2.5	0.1	0.0	0.9	0.1	0.0		0.2			0.0	0.0
Delay (s)	24.2	8.9	7.4	26.0	11.6	10.5		26.0			18.3	18.5
Level of Service	C	A	A	C	B	B		C			B	B
Approach Delay (s)		12.3			12.9			26.0			18.5	
Approach LOS		B			B			C			B	

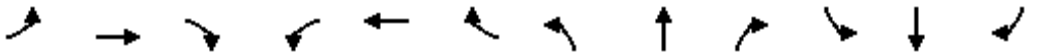
Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	9.7
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	349	2	50	239	6	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	367	2	53	252	6	57
RTOR Reduction (vph)	0	1	0	0	0	44
Lane Group Flow (vph)	367	1	53	252	6	13
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	9.9	9.9	2.3	17.2	7.7	7.7
Effective Green, g (s)	9.9	9.9	2.3	17.2	7.7	7.7
Actuated g/C Ratio	0.28	0.28	0.07	0.49	0.22	0.22
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1004	449	117	1744	391	349
v/s Ratio Prot	c0.10		c0.03	0.07	0.00	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.37	0.00	0.45	0.14	0.02	0.04
Uniform Delay, d1	10.0	9.0	15.7	4.8	10.6	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	2.8	0.0	0.0	0.0
Delay (s)	10.2	9.0	18.5	4.9	10.7	10.7
Level of Service	B	A	B	A	B	B
Approach Delay (s)	10.2			7.2	10.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	34.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

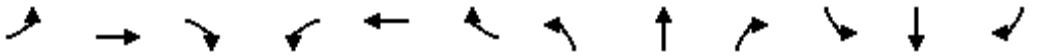
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1181	490	243	607	104	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1243	516	256	639	109	342
RTOR Reduction (vph)	0	277	0	501	0	0
Lane Group Flow (vph)	1243	239	256	138	109	342
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	32.2	32.2	15.0	15.0	7.2	27.2
Effective Green, g (s)	32.2	32.2	15.0	15.0	7.2	27.2
Actuated g/C Ratio	0.46	0.46	0.22	0.22	0.10	0.39
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1593	734	765	342	184	1387
v/s Ratio Prot	c0.36		0.07		c0.06	0.10
v/s Ratio Perm		0.15		c0.09		
v/c Ratio	0.78	0.33	0.33	0.40	0.59	0.25
Uniform Delay, d1	15.6	11.7	23.0	23.4	29.7	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.3	0.3	0.8	5.0	0.1
Delay (s)	18.2	12.0	23.2	24.1	34.7	14.3
Level of Service	B	B	C	C	C	B
Approach Delay (s)	16.4		23.9			19.2
Approach LOS	B		C			B

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



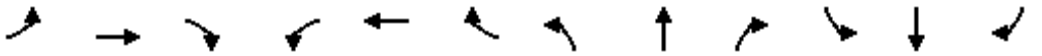
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	332	6	2	633	543	2	13	5	197	10	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1851	1583		1778	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1851	1583		1778	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	349	6	2	666	572	2	14	5	207	11	61
RTOR Reduction (vph)	0	0	3	0	0	344	0	0	5	0	0	45
Lane Group Flow (vph)	47	349	3	2	666	228	0	16	0	0	218	16
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	1.4	20.3	20.3	0.7	18.6	18.6		2.8	2.8		13.4	13.4
Effective Green, g (s)	2.4	23.3	23.3	1.7	21.6	21.6		3.8	3.8		14.4	14.4
Actuated g/C Ratio	0.04	0.43	0.43	0.03	0.40	0.40		0.07	0.07		0.27	0.27
Clearance Time (s)	4.0	6.0	6.0	3.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	78	1521	681	56	1410	631		130	111		472	421
v/s Ratio Prot	c0.03	0.10		0.00	c0.19			c0.01			c0.12	
v/s Ratio Perm			0.00			0.14			0.00			0.01
v/c Ratio	0.60	0.23	0.00	0.04	0.47	0.36		0.12	0.00		0.46	0.04
Uniform Delay, d1	25.4	9.8	8.8	25.5	12.1	11.5		23.6	23.4		16.7	14.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	8.7	0.1	0.0	0.1	0.3	0.4		0.2	0.0		0.3	0.0
Delay (s)	34.1	9.9	8.8	25.6	12.4	11.9		23.8	23.4		16.9	14.8
Level of Service	C	A	A	C	B	B		C	C		B	B
Approach Delay (s)		12.7			12.2			23.7			16.5	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



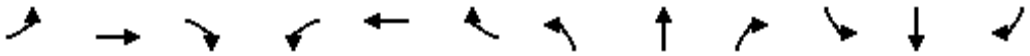
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	504	10	87	1166	61	7	5	43	43	4	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	531	11	92	1227	64	7	5	45	45	4	22
RTOR Reduction (vph)	0	0	6	0	0	34	0	0	38	0	0	18
Lane Group Flow (vph)	33	531	5	92	1227	30	7	5	7	45	4	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.5	27.7	27.7	5.0	30.2	30.2	0.9	10.4	10.4	4.2	11.7	11.7
Effective Green, g (s)	2.5	27.7	27.7	5.0	30.2	30.2	0.9	10.4	10.4	4.2	11.7	11.7
Actuated g/C Ratio	0.04	0.42	0.42	0.08	0.46	0.46	0.01	0.16	0.16	0.06	0.18	0.18
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	68	1501	672	136	1637	732	24	297	252	114	334	284
v/s Ratio Prot	0.02	0.15		c0.05	c0.35		0.00	0.00		c0.03	0.00	
v/s Ratio Perm			0.00			0.02			c0.00			c0.00
v/c Ratio	0.49	0.35	0.01	0.68	0.75	0.04	0.29	0.02	0.03	0.39	0.01	0.01
Uniform Delay, d1	30.8	12.7	10.9	29.4	14.4	9.6	31.9	23.1	23.2	29.3	22.0	22.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	0.1	0.0	12.5	1.9	0.0	6.7	0.0	0.0	2.2	0.0	0.0
Delay (s)	36.1	12.9	10.9	41.9	16.4	9.6	38.5	23.2	23.2	31.6	22.1	22.1
Level of Service	D	B	B	D	B	A	D	C	C	C	C	C
Approach Delay (s)		14.2			17.8			25.1			28.1	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



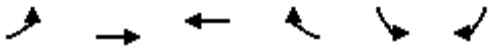
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	359	291	25	158	882	150	35	587	139	271	603	554
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	2.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	378	306	26	166	928	158	37	618	146	285	635	583
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	378	306	26	166	928	158	37	618	146	285	635	583
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.0	28.7	84.4	8.5	26.2	84.4	4.7	20.5	84.4	8.0	24.1	84.4
Effective Green, g (s)	11.0	31.7	84.4	9.5	29.2	84.4	5.7	23.2	84.4	9.0	26.8	84.4
Actuated g/C Ratio	0.13	0.38	1.00	0.11	0.35	1.00	0.07	0.27	1.00	0.11	0.32	1.00
Clearance Time (s)	4.0	5.7		3.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	447	1329	1583	386	1224	1583	232	973	1583	366	1124	1583
v/s Ratio Prot	c0.11	0.09		0.05	c0.26		0.01	c0.17		c0.08	0.18	
v/s Ratio Perm			0.02			0.10			0.09			c0.37
v/c Ratio	0.85	0.23	0.02	0.43	0.76	0.10	0.16	0.64	0.09	0.78	0.56	0.37
Uniform Delay, d1	35.9	18.0	0.0	34.9	24.5	0.0	37.1	26.9	0.0	36.7	24.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.2	0.2	0.0	0.3	3.1	0.1	0.1	1.6	0.1	9.2	0.9	0.7
Delay (s)	49.1	18.2	0.0	35.2	27.6	0.1	37.2	28.5	0.1	45.9	24.9	0.7
Level of Service	D	B	A	D	C	A	D	C	A	D	C	A
Approach Delay (s)		34.0			25.1			23.7			19.5	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	84.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



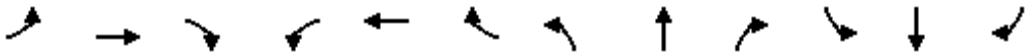
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	486	179	146	1022	50	152	242	13	60	138	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3397		1770	3514		1770	1848		1770	1792	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3397		1770	3514		1770	1848		1770	1792	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	512	188	154	1076	53	160	255	14	63	145	49
RTOR Reduction (vph)	0	40	0	0	3	0	0	2	0	0	14	0
Lane Group Flow (vph)	42	660	0	154	1126	0	160	267	0	63	180	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.1	23.4		10.6	30.9		10.7	23.0		4.2	16.5	
Effective Green, g (s)	4.1	26.1		11.6	33.6		11.7	25.3		5.2	18.8	
Actuated g/C Ratio	0.05	0.33		0.15	0.42		0.15	0.32		0.07	0.24	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	91	1111		257	1480		260	586		115	422	
v/s Ratio Prot	0.02	0.19		c0.09	c0.32		c0.09	c0.14		0.04	0.10	
v/s Ratio Perm												
v/c Ratio	0.46	0.59		0.60	0.76		0.62	0.46		0.55	0.43	
Uniform Delay, d1	36.8	22.4		31.9	19.7		31.9	21.8		36.2	25.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	1.0		2.5	2.5		3.0	0.7		2.8	0.9	
Delay (s)	38.1	23.4		34.4	22.1		35.0	22.5		39.0	26.8	
Level of Service	D	C		C	C		C	C		D	C	
Approach Delay (s)		24.2			23.6			27.1			29.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



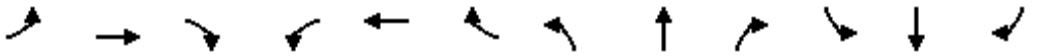
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	516	1334	27	34	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3529		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3529		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	543	1404	28	36	5
RTOR Reduction (vph)	0	0	1	0	0	4
Lane Group Flow (vph)	12	543	1431	0	36	1
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	0.9	44.1	39.2		7.5	7.5
Effective Green, g (s)	1.9	46.8	41.9		8.5	8.5
Actuated g/C Ratio	0.03	0.76	0.68		0.14	0.14
Clearance Time (s)	4.0	5.7	5.7		4.0	4.0
Vehicle Extension (s)	2.0	3.8	3.8		2.0	2.0
Lane Grp Cap (vph)	55	2702	2412		245	220
v/s Ratio Prot	0.01	c0.15	c0.41		c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.22	0.20	0.59		0.15	0.00
Uniform Delay, d1	29.0	2.0	5.2		23.2	22.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.0	0.4		0.1	0.0
Delay (s)	29.7	2.1	5.6		23.3	22.8
Level of Service	C	A	A		C	C
Approach Delay (s)		2.7	5.6		23.2	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	5.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



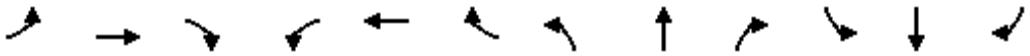
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	476	58	114	1362	0	68	0	59	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7	4.7	2.0	2.7			2.0	2.0			
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00			
Frt		1.00	0.85	1.00	1.00			1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3539	1583	1770	3539			1770	1583			
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (perm)		3539	1583	1770	3539			1770	1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	501	61	120	1434	0	72	0	62	0	0	0
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	49	0	0	0
Lane Group Flow (vph)	0	501	25	120	1434	0	0	72	13	0	0	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2						3			
Actuated Green, G (s)		18.7	18.7	7.5	30.2			8.5	8.5			
Effective Green, g (s)		21.7	19.7	9.5	33.2			10.5	10.5			
Actuated g/C Ratio		0.45	0.41	0.20	0.69			0.22	0.22			
Clearance Time (s)		5.7	5.7	4.0	5.7			4.0	4.0			
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		1587	644	347	2428			384	343			
v/s Ratio Prot		0.14		0.07	c0.41			c0.04				
v/s Ratio Perm			0.02						0.01			
v/c Ratio		0.32	0.04	0.35	0.59			0.19	0.04			
Uniform Delay, d1		8.6	8.6	16.8	4.0			15.5	15.0			
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.1	0.0	0.6	0.4			0.2	0.0			
Delay (s)		8.7	8.7	17.4	4.4			15.7	15.0			
Level of Service		A	A	B	A			B	B			
Approach Delay (s)		8.7			5.4			15.4			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	4.7
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



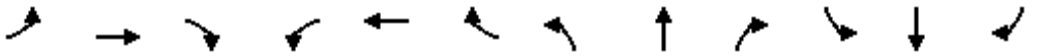
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	605	39	107	1410	5	46	17	115	27	15	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3507		1770	3537			1797	1583		1805	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.79	1.00		0.82	1.00
Satd. Flow (perm)	1770	3507		1770	3537			1468	1583		1529	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	637	41	113	1484	5	48	18	121	28	16	26
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	101	0	0	22
Lane Group Flow (vph)	40	673	0	113	1489	0	0	66	20	0	44	4
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	1.9	30.6		6.2	34.9			9.0	9.0		9.0	9.0
Effective Green, g (s)	2.9	33.3		7.2	37.6			10.0	10.0		10.0	10.0
Actuated g/C Ratio	0.05	0.56		0.12	0.63			0.17	0.17		0.17	0.17
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	86	1963		214	2235			247	266		257	266
v/s Ratio Prot	0.02	0.19		c0.06	c0.42							
v/s Ratio Perm								c0.04	0.01		0.03	0.00
v/c Ratio	0.47	0.34		0.53	0.67			0.27	0.08		0.17	0.02
Uniform Delay, d1	27.5	7.1		24.6	7.0			21.6	20.9		21.2	20.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.4	0.1		1.1	0.8			0.2	0.0		0.1	0.0
Delay (s)	29.0	7.3		25.6	7.8			21.8	20.9		21.3	20.7
Level of Service	C	A		C	A			C	C		C	C
Approach Delay (s)		8.5			9.0			21.2			21.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



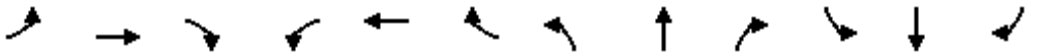
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	403	6	2	642	79	2	0	2	135	0	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98			0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3532		1770	3481			1695		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)	1770	3532		1770	3481			1695		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	424	6	2	676	83	2	0	2	142	0	225
RTOR Reduction (vph)	0	1	0	0	9	0	0	2	0	0	177	0
Lane Group Flow (vph)	105	429	0	2	750	0	0	2	0	142	48	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	6.8	27.0		0.9	21.1			1.0		11.4	11.4	
Effective Green, g (s)	7.8	29.7		1.9	23.8			2.0		12.4	12.4	
Actuated g/C Ratio	0.13	0.51		0.03	0.41			0.03		0.21	0.21	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	238	1809		58	1428			58		378	338	
v/s Ratio Prot	c0.06	0.12		0.00	c0.22			c0.00		c0.08	0.03	
v/s Ratio Perm												
v/c Ratio	0.44	0.24		0.03	0.52			0.04		0.38	0.14	
Uniform Delay, d1	23.1	7.9		27.2	12.9			27.1		19.5	18.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		0.1	0.4			0.2		0.2	0.1	
Delay (s)	23.6	7.9		27.3	13.3			27.3		19.7	18.6	
Level of Service	C	A		C	B			C		B	B	
Approach Delay (s)		11.0			13.3			27.3			19.0	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



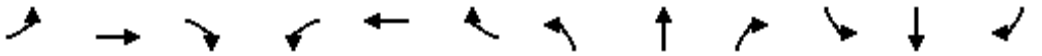
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	6	33	152	4	70	21	1096	138	11	1313	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	6	35	160	4	74	22	1154	145	12	1382	17
RTOR Reduction (vph)	0	0	32	0	0	57	0	0	85	0	0	9
Lane Group Flow (vph)	26	6	3	160	4	17	22	1154	60	12	1382	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.6	5.1	5.1	10.6	14.1	14.1	0.6	25.5	25.5	0.5	25.4	25.4
Effective Green, g (s)	1.6	5.1	5.1	10.6	14.1	14.1	0.6	25.5	25.5	0.5	25.4	25.4
Actuated g/C Ratio	0.03	0.08	0.08	0.17	0.23	0.23	0.01	0.41	0.41	0.01	0.41	0.41
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	46	154	131	304	426	362	17	2102	654	14	2093	652
v/s Ratio Prot	0.01	0.00		c0.09	0.00		c0.01	0.23		0.01	c0.27	
v/s Ratio Perm			0.00			c0.01			0.04			0.01
v/c Ratio	0.57	0.04	0.02	0.53	0.01	0.05	1.29	0.55	0.09	0.86	0.66	0.01
Uniform Delay, d1	29.7	26.0	26.0	23.3	18.4	18.6	30.6	13.7	11.0	30.6	14.7	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.9	0.1	0.1	1.6	0.0	0.1	323.2	0.3	0.1	164.6	0.8	0.0
Delay (s)	44.6	26.1	26.1	24.9	18.4	18.6	353.7	14.0	11.1	195.2	15.5	10.7
Level of Service	D	C	C	C	B	B	F	B	B	F	B	B
Approach Delay (s)		33.3			22.8			19.4			16.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



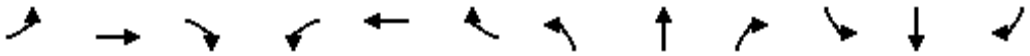
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	14	26	163	37	18	60	1229	288	37	1441	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	15	27	172	39	19	63	1294	303	39	1517	21
RTOR Reduction (vph)	0	0	24	0	0	14	0	0	171	0	0	11
Lane Group Flow (vph)	8	15	3	172	39	5	63	1294	132	39	1517	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	6.8	6.8	11.1	17.4	17.4	3.3	26.0	26.0	1.3	24.0	24.0
Effective Green, g (s)	0.5	6.8	6.8	11.1	17.4	17.4	3.3	26.0	26.0	1.3	24.0	24.0
Actuated g/C Ratio	0.01	0.10	0.10	0.17	0.27	0.27	0.05	0.40	0.40	0.02	0.37	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	14	194	165	301	497	422	90	2028	631	35	1872	583
v/s Ratio Prot	0.00	0.01		c0.10	c0.02		c0.04	0.25		0.02	c0.30	
v/s Ratio Perm			0.00			0.00			0.08			0.01
v/c Ratio	0.57	0.08	0.02	0.57	0.08	0.01	0.70	0.64	0.21	1.11	0.81	0.02
Uniform Delay, d1	32.2	26.4	26.2	24.9	17.9	17.6	30.5	15.8	12.9	32.0	18.6	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.0	0.2	0.0	2.6	0.1	0.0	21.1	0.7	0.2	188.3	2.8	0.0
Delay (s)	78.2	26.5	26.2	27.5	18.0	17.6	51.6	16.5	13.0	220.3	21.3	13.1
Level of Service	E	C	C	C	B	B	D	B	B	F	C	B
Approach Delay (s)		34.6			25.0			17.2			26.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	7	39	44	15	75	96	1480	101	43	1517	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	7	41	46	16	79	101	1558	106	45	1597	59
RTOR Reduction (vph)	0	0	35	0	0	67	0	0	47	0	0	27
Lane Group Flow (vph)	25	7	6	46	16	12	101	1558	59	45	1597	32
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.3	9.2	9.2	2.1	10.0	10.0	6.6	36.2	36.2	2.1	31.7	31.7
Effective Green, g (s)	2.3	10.2	10.2	3.1	11.0	11.0	7.6	38.2	37.2	3.1	33.7	32.7
Actuated g/C Ratio	0.03	0.15	0.15	0.04	0.16	0.16	0.11	0.55	0.53	0.04	0.48	0.47
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	273	232	79	294	250	193	2791	846	79	2462	744
v/s Ratio Prot	0.01	0.00		c0.03	c0.01		c0.06	0.31		0.03	c0.31	
v/s Ratio Perm			0.00			0.01			0.04			0.02
v/c Ratio	0.43	0.03	0.03	0.58	0.05	0.05	0.52	0.56	0.07	0.57	0.65	0.04
Uniform Delay, d1	33.0	25.4	25.4	32.6	24.9	24.9	29.3	10.2	7.8	32.6	13.5	10.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.0	0.0	10.5	0.1	0.1	2.5	0.2	0.0	9.1	0.6	0.0
Delay (s)	38.1	25.5	25.5	43.1	25.0	24.9	31.8	10.5	7.9	41.7	14.1	10.0
Level of Service	D	C	C	D	C	C	C	B	A	D	B	B
Approach Delay (s)		29.8			30.9			11.5			14.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	11.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	48	22	45	37	3	35	104	13	2	40	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1549	1770	1840		1770	1826		1770	1708	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1549	1770	1840		1770	1826		1770	1708	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	51	23	47	39	3	37	109	14	2	42	40
RTOR Reduction (vph)	0	0	19	0	3	0	0	6	0	0	33	0
Lane Group Flow (vph)	76	51	4	47	39	0	37	117	0	2	49	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	4.5	5.4	5.4	2.0	2.9		1.9	7.2		0.5	5.8	
Effective Green, g (s)	4.5	5.4	5.4	2.0	2.9		1.9	7.2		0.5	5.8	
Actuated g/C Ratio	0.14	0.16	0.16	0.06	0.09		0.06	0.22		0.02	0.18	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	241	304	253	107	161		102	397		27	299	
v/s Ratio Prot	c0.04	c0.03		0.03	0.02		c0.02	c0.06		0.00	0.03	
v/s Ratio Perm			0.00									
v/c Ratio	0.32	0.17	0.01	0.44	0.24		0.36	0.29		0.07	0.16	
Uniform Delay, d1	12.9	11.9	11.6	15.0	14.1		15.0	10.8		16.1	11.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.3	0.0	2.9	0.8		2.2	0.4		1.2	0.3	
Delay (s)	13.7	12.2	11.6	17.9	14.9		17.2	11.2		17.2	11.9	
Level of Service	B	B	B	B	B		B	B		B	B	
Approach Delay (s)		12.8			16.5			12.6			12.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		

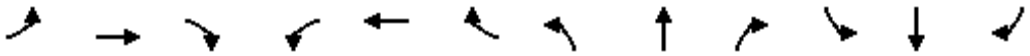
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	142	298	415	68	326	856
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	149	314	437	72	343	901
RTOR Reduction (vph)	0	259	0	49	0	0
Lane Group Flow (vph)	149	55	437	23	343	901
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	10.8	10.8	19.6	19.6	16.2	40.8
Effective Green, g (s)	10.8	10.8	19.6	19.6	16.2	40.8
Actuated g/C Ratio	0.18	0.18	0.32	0.32	0.26	0.66
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	310	278	593	504	465	1234
v/s Ratio Prot	c0.08		0.23		0.19	c0.48
v/s Ratio Perm		0.03		0.01		
v/c Ratio	0.48	0.20	0.74	0.05	0.74	0.73
Uniform Delay, d1	22.9	21.7	18.7	14.5	20.8	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.4	4.8	0.0	6.0	2.3
Delay (s)	24.1	22.1	23.5	14.6	26.8	9.1
Level of Service	C	C	C	B	C	A
Approach Delay (s)	22.7		22.2			13.9
Approach LOS	C		C			B

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	19	29	548	12	27	703
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.44	1.00
Satd. Flow (perm)	1770	1583	1863	1583	826	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	31	577	13	28	740
RTOR Reduction (vph)	0	29	0	5	0	0
Lane Group Flow (vph)	20	2	577	8	28	740
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	1.9	1.9	16.8	16.8	16.8	16.8
Effective Green, g (s)	1.9	1.9	16.8	16.8	16.8	16.8
Actuated g/C Ratio	0.07	0.07	0.61	0.61	0.61	0.61
Clearance Time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	121	109	1130	960	501	1130
v/s Ratio Prot	c0.01		0.31			c0.40
v/s Ratio Perm		0.00		0.00	0.03	
v/c Ratio	0.17	0.02	0.51	0.01	0.06	0.65
Uniform Delay, d1	12.2	12.0	3.1	2.2	2.2	3.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	0.4	0.0	0.0	1.4
Delay (s)	12.8	12.1	3.5	2.2	2.3	4.9
Level of Service	B	B	A	A	A	A
Approach Delay (s)	12.4		3.5			4.8
Approach LOS	B		A			A

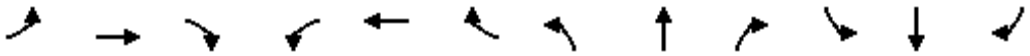
Intersection Summary			
HCM Average Control Delay	4.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	27.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	373	6	58	455	0	8	2	11	8	8	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.87		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1549	1770	3539		1770	1606		1770	1747	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1549	1770	3539		1770	1606		1770	1747	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	393	6	61	479	0	8	2	12	8	8	5
RTOR Reduction (vph)	0	0	4	0	0	0	0	11	0	0	5	0
Lane Group Flow (vph)	6	393	2	61	479	0	8	3	0	8	8	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	0.3	10.9	10.9	1.3	11.9		0.3	2.1		0.3	2.1	
Effective Green, g (s)	0.3	10.9	10.9	1.3	11.9		0.3	2.1		0.3	2.1	
Actuated g/C Ratio	0.01	0.36	0.36	0.04	0.39		0.01	0.07		0.01	0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	17	1261	552	75	1376		17	110		17	120	
v/s Ratio Prot	0.00	0.11		c0.03	c0.14		c0.00	0.00		0.00	c0.00	
v/s Ratio Perm			0.00									
v/c Ratio	0.35	0.31	0.00	0.81	0.35		0.47	0.03		0.47	0.07	
Uniform Delay, d1	15.1	7.1	6.4	14.5	6.6		15.1	13.3		15.1	13.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.2	0.1	0.0	46.8	0.2		19.2	0.1		19.2	0.2	
Delay (s)	27.2	7.3	6.4	61.3	6.8		34.2	13.4		34.2	13.6	
Level of Service	C	A	A	E	A		C	B		C	B	
Approach Delay (s)		7.6			12.9			21.0			21.4	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	30.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

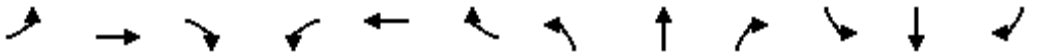
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	849	0	9	344	7	0	1	17	21	1	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.87		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1770	3528			1604		1770	1573	
Flt Permitted	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539		1770	3528			1604		1770	1573	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	894	0	9	362	7	0	1	18	22	1	26
RTOR Reduction (vph)	0	0	0	0	1	0	0	17	0	0	24	0
Lane Group Flow (vph)	24	894	0	9	368	0	0	2	0	22	3	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Perm			Split		
Protected Phases	7	4		3	8			2		6	6	
Permitted Phases							2					
Actuated Green, G (s)	0.4	23.1		0.4	23.1			1.9		3.3	3.3	
Effective Green, g (s)	0.4	23.1		0.4	23.1			1.9		3.3	3.3	
Actuated g/C Ratio	0.01	0.52		0.01	0.52			0.04		0.07	0.07	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	16	1829		16	1823			68		131	116	
v/s Ratio Prot	c0.01	c0.25		0.01	0.10			c0.00		c0.01	0.00	
v/s Ratio Perm												
v/c Ratio	1.50	0.49		0.56	0.20			0.03		0.17	0.03	
Uniform Delay, d1	22.2	7.0		22.1	5.8			20.5		19.4	19.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	410.1	0.2		38.3	0.1			0.2		0.6	0.1	
Delay (s)	432.3	7.2		60.3	5.9			20.7		20.0	19.3	
Level of Service	F	A		E	A			C		C	B	
Approach Delay (s)		18.3			7.2			20.7			19.6	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	44.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

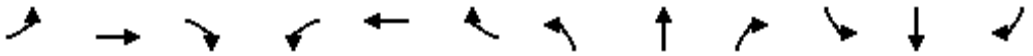
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	1	17	19	0	29	9	101	42	74	133	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00		0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1550	1770		1550	1770	1863	1550	1770	1863	1550
Flt Permitted	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1550	1770		1550	1770	1863	1550	1770	1863	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	1	18	20	0	31	9	106	44	78	140	13
RTOR Reduction (vph)	0	0	17	0	0	29	0	0	36	0	0	10
Lane Group Flow (vph)	19	1	1	20	0	2	9	106	8	78	140	3
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.3	1.7	1.7	0.3		1.7	0.3	4.5	4.5	1.9	6.1	6.1
Effective Green, g (s)	0.3	1.7	1.7	0.3		1.7	0.3	4.5	4.5	1.9	6.1	6.1
Actuated g/C Ratio	0.01	0.07	0.07	0.01		0.07	0.01	0.18	0.18	0.08	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	22	130	108	22		108	22	344	286	138	466	388
v/s Ratio Prot	0.01	0.00		c0.01			0.01	0.06		c0.04	c0.08	
v/s Ratio Perm			0.00			c0.00			0.01			0.00
v/c Ratio	0.86	0.01	0.01	0.91		0.02	0.41	0.31	0.03	0.57	0.30	0.01
Uniform Delay, d1	12.0	10.6	10.6	12.0		10.6	12.0	8.6	8.2	10.9	7.4	6.9
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	129.4	0.0	0.0	148.5		0.1	11.9	0.5	0.0	5.2	0.4	0.0
Delay (s)	141.4	10.6	10.6	160.5		10.6	23.9	9.1	8.2	16.1	7.8	6.9
Level of Service	F	B	B	F		B	C	A	A	B	A	A
Approach Delay (s)		76.0			69.4			9.7			10.5	
Approach LOS		E			E			A			B	

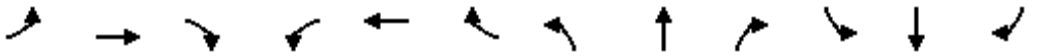
Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	24.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	26.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



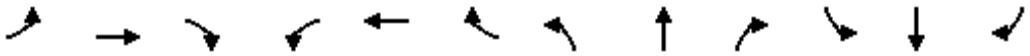
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	36	70	187	45	18	56	636	224	6	769	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0		3.0	4.3	4.3	2.0	3.2	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1825	1583		1778		1770	1863	1583	1770	3535	
Flt Permitted		0.98	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1825	1583		1778		1770	1863	1583	1770	3535	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	38	74	197	47	19	59	669	236	6	809	7
RTOR Reduction (vph)	0	0	67	0	3	0	0	0	126	0	1	0
Lane Group Flow (vph)	0	65	7	0	260	0	59	669	110	6	815	0
Turn Type	Split		Perm	Split			Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			
Actuated Green, G (s)		6.0	6.0		16.5		3.6	32.7	32.7	0.9	30.1	
Effective Green, g (s)		7.0	7.0		17.5		4.6	33.7	33.7	1.9	31.1	
Actuated g/C Ratio		0.10	0.10		0.24		0.06	0.47	0.47	0.03	0.43	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.3	5.3	3.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		176	153		430		112	867	737	46	1518	
v/s Ratio Prot		c0.04			c0.15		c0.03	c0.36		0.00	0.23	
v/s Ratio Perm			0.00						0.07			
v/c Ratio		0.37	0.05		0.60		0.53	0.77	0.15	0.13	0.54	
Uniform Delay, d1		30.6	29.7		24.4		32.8	16.1	11.1	34.4	15.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.0		1.6		2.1	3.9	0.0	0.5	0.4	
Delay (s)		31.1	29.7		26.0		34.9	20.1	11.1	34.9	15.7	
Level of Service		C	C		C		C	C	B	C	B	
Approach Delay (s)		30.4			26.0			18.8			15.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



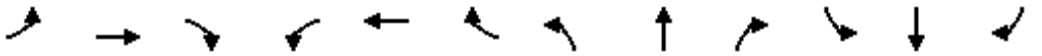
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	228	179	0	398	396	5	0	389	377	0	362	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	0.95	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1681	1757		1770	3533			1863	1583		1863	1583
Flt Permitted	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1681	1757		1770	3533			1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	240	188	0	419	417	5	0	409	397	0	381	399
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	308	0	0	0
Lane Group Flow (vph)	209	219	0	419	421	0	0	409	89	0	381	399
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	16.7	16.7		25.2	25.2			22.8	22.8		22.8	106.1
Effective Green, g (s)	17.7	17.7		26.2	26.2			23.8	23.8		23.8	106.1
Actuated g/C Ratio	0.17	0.17		0.25	0.25			0.22	0.22		0.22	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		5.0	5.0			3.0	3.0		2.5	
Lane Grp Cap (vph)	280	293		437	872			418	355		418	1583
v/s Ratio Prot	0.12	c0.12		c0.24	0.12			c0.22			c0.20	
v/s Ratio Perm									0.06			0.25
v/c Ratio	0.75	0.75		0.96	0.48			0.98	0.25		0.91	0.25
Uniform Delay, d1	42.1	42.1		39.4	34.2			40.9	33.8		40.1	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	9.8	9.5		32.9	0.9			37.9	0.4		23.8	0.4
Delay (s)	51.9	51.5		72.3	35.0			78.8	34.2		63.9	0.4
Level of Service	D	D		E	D			E	C		E	A
Approach Delay (s)		51.7			53.6			56.8			31.4	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM Average Control Delay	48.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	106.1	Sum of lost time (s)	14.6
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



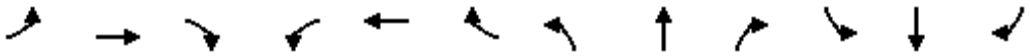
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	556	206	36	484	21	130	54	62	8	40	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00		1.00			0.97	1.00		0.99	
Satd. Flow (prot)		1859	1583		1847			1799	1583		1786	
Flt Permitted		0.98	1.00		0.95			0.81	1.00		0.96	
Satd. Flow (perm)		1820	1583		1757			1517	1583		1723	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	585	217	38	509	22	137	57	65	8	42	18
RTOR Reduction (vph)	0	0	68	0	2	0	0	0	51	0	14	0
Lane Group Flow (vph)	0	607	149	0	567	0	0	194	14	0	54	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		31.9	31.9		31.9			9.9	9.9		9.9	
Effective Green, g (s)		32.9	32.9		32.9			10.9	10.9		10.9	
Actuated g/C Ratio		0.66	0.66		0.66			0.22	0.22		0.22	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1198	1042		1156			331	345		376	
v/s Ratio Prot												
v/s Ratio Perm		c0.33	0.09		0.32			c0.13	0.01		0.03	
v/c Ratio		0.51	0.14		0.49			0.59	0.04		0.14	
Uniform Delay, d1		4.4	3.2		4.3			17.5	15.4		15.8	
Progression Factor		1.00	1.00		0.75			1.00	1.00		1.00	
Incremental Delay, d2		1.5	0.3		1.4			1.7	0.0		0.1	
Delay (s)		5.9	3.5		4.6			19.2	15.4		15.8	
Level of Service		A	A		A			B	B		B	
Approach Delay (s)		5.3			4.6			18.3			15.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



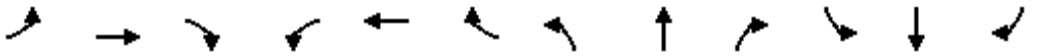
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	602	21	43	642	60	12	43	19	117	72	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.2		3.2	3.2		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	1853		1770	1839		1770	1777			1807	1583
Flt Permitted	0.28	1.00		0.33	1.00		0.52	1.00			0.77	1.00
Satd. Flow (perm)	529	1853		621	1839		974	1777			1441	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	48	634	22	45	676	63	13	45	20	123	76	99
RTOR Reduction (vph)	0	2	0	0	5	0	0	16	0	0	0	78
Lane Group Flow (vph)	48	654	0	45	734	0	13	49	0	0	199	21
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		4
Actuated Green, G (s)	32.0	32.0		32.0	32.0		9.8	9.8			9.8	9.8
Effective Green, g (s)	33.0	33.0		33.0	33.0		10.8	10.8			10.8	10.8
Actuated g/C Ratio	0.66	0.66		0.66	0.66		0.22	0.22			0.22	0.22
Clearance Time (s)	4.2	4.2		4.2	4.2		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	349	1223		410	1214		210	384			311	342
v/s Ratio Prot		0.35			c0.40			0.03				
v/s Ratio Perm	0.09			0.07			0.01				c0.14	0.01
v/c Ratio	0.14	0.53		0.11	0.60		0.06	0.13			0.64	0.06
Uniform Delay, d1	3.2	4.5		3.1	4.8		15.6	15.8			17.8	15.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.8	1.7		0.5	2.2		0.0	0.1			3.2	0.0
Delay (s)	4.0	6.1		3.7	7.1		15.6	15.9			21.0	15.6
Level of Service	A	A		A	A		B	B			C	B
Approach Delay (s)		6.0			6.9			15.8			19.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



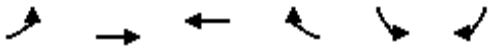
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	539	33	423	493	16	43	40	333	72	102	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0	3.0		3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.98	
Satd. Flow (prot)	1770	1847		1770	1854			1816	1583		1780	
Flt Permitted	0.95	1.00		0.95	1.00			0.66	1.00		0.86	
Satd. Flow (perm)	1770	1847		1770	1854			1220	1583		1560	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	567	35	445	519	17	45	42	351	76	107	49
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	290	0	10	0
Lane Group Flow (vph)	44	600	0	445	535	0	0	87	61	0	222	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		
Actuated Green, G (s)	3.1	43.3		28.2	68.4			16.3	16.3		16.3	
Effective Green, g (s)	4.1	44.3		29.2	69.4			17.3	17.3		17.3	
Actuated g/C Ratio	0.04	0.44		0.29	0.69			0.17	0.17		0.17	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0	4.0		4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)	73	818		517	1287			211	274		270	
v/s Ratio Prot	0.02	c0.32		c0.25	0.29							
v/s Ratio Perm								0.07	0.04		c0.14	
v/c Ratio	0.60	0.73		0.86	0.42			0.41	0.22		0.82	
Uniform Delay, d1	47.1	23.0		33.5	6.6			36.8	35.6		39.9	
Progression Factor	1.10	0.82		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	8.5	3.0		13.3	1.0			0.5	0.1		17.2	
Delay (s)	60.3	21.8		46.8	7.6			37.3	35.7		57.1	
Level of Service	E	C		D	A			D	D		E	
Approach Delay (s)		24.4			25.3			36.0			57.1	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	126	251	145	75	13	598	1045	43	30	1205	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.6	3.9	3.0	1.6	2.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	75	133	264	153	79	14	629	1100	45	32	1268	3
RTOR Reduction (vph)	0	0	221	0	0	12	0	0	25	0	0	2
Lane Group Flow (vph)	75	133	43	153	79	2	629	1100	20	32	1268	1
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	14.0	14.0	14.0	14.0	14.0	14.0	16.9	40.6	40.6	6.0	31.7	31.7
Effective Green, g (s)	15.0	15.0	15.0	15.0	15.0	15.0	17.9	42.9	41.6	7.0	34.0	32.7
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.20	0.47	0.45	0.08	0.37	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.9	4.9	4.0	3.9	3.9
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	290	305	260	290	305	260	672	1659	720	135	1315	566
v/s Ratio Prot	0.04	c0.07		c0.09	0.04		c0.18	0.31		0.02	c0.36	
v/s Ratio Perm			0.03			0.00			0.01			0.00
v/c Ratio	0.26	0.44	0.17	0.53	0.26	0.01	0.94	0.66	0.03	0.24	0.96	0.00
Uniform Delay, d1	33.4	34.4	32.9	35.0	33.4	32.0	36.2	18.7	13.8	39.7	28.2	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.4	0.1	0.8	0.2	0.0	20.1	1.1	0.0	0.3	17.0	0.0
Delay (s)	33.6	34.8	33.0	35.8	33.6	32.0	56.4	19.8	13.8	40.1	45.1	18.9
Level of Service	C	C	C	D	C	C	E	B	B	D	D	B
Approach Delay (s)		33.6			34.9			32.6			44.9	
Approach LOS		C			C			C			D	

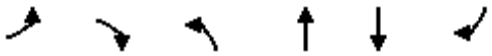
Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	91.5	Sum of lost time (s)	9.6
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	38	505	501	215	321	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	3539	1863	1546	3427	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1770	3539	1863	1546	3427	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	532	527	226	338	12
RTOR Reduction (vph)	0	0	0	134	5	0
Lane Group Flow (vph)	40	532	527	92	345	0
Confl. Peds. (#/hr)				4		4
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	1.2	22.0	16.8	16.8	11.1	
Effective Green, g (s)	1.2	22.0	16.8	16.8	11.1	
Actuated g/C Ratio	0.03	0.54	0.41	0.41	0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	52	1894	762	632	926	
v/s Ratio Prot	c0.02	0.15	c0.28		c0.10	
v/s Ratio Perm				0.06		
v/c Ratio	0.77	0.28	0.69	0.15	0.37	
Uniform Delay, d1	19.8	5.2	10.0	7.6	12.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	48.9	0.1	2.7	0.1	0.3	
Delay (s)	68.8	5.3	12.7	7.7	12.4	
Level of Service	E	A	B	A	B	
Approach Delay (s)		9.7	11.2		12.4	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	298	599	781	12	6	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.95	1.00	1.00
Satd. Flow (prot)	1770	1546	1681	1688	1863	1561
Flt Permitted	0.95	1.00	0.95	0.58	1.00	1.00
Satd. Flow (perm)	1770	1546	1681	1034	1863	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	314	631	822	13	6	514
RTOR Reduction (vph)	0	477	0	0	0	371
Lane Group Flow (vph)	314	154	419	416	6	143
Confl. Peds. (#/hr)		2				2
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	14.2	14.2	15.9	36.1	16.2	16.2
Effective Green, g (s)	14.2	14.2	15.9	36.1	16.2	16.2
Actuated g/C Ratio	0.24	0.24	0.27	0.62	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	431	377	458	819	518	434
v/s Ratio Prot			c0.25	0.14	0.00	
v/s Ratio Perm	c0.18	0.10		c0.18		0.09
v/c Ratio	0.73	0.41	0.91	0.51	0.01	0.33
Uniform Delay, d1	20.3	18.5	20.5	6.2	15.2	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	0.7	22.7	0.5	0.0	0.4
Delay (s)	26.3	19.2	43.2	6.7	15.3	17.2
Level of Service	C	B	D	A	B	B
Approach Delay (s)	21.6			25.0	17.2	
Approach LOS	C			C	B	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection 13 **New Meadow Dr/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	26	25	95.4%	57.7	8.6	E
	Through						
	Right Turn	6	8	130.0%	13.2	8.2	B
	Subtotal	**32**	**33**	**101.9%**	**48.1**	**8.7**	**D**
EB	Left Turn	9	9	100.0%	36.6	8.8	D
	Through	572	541	94.6%	9.7	1.4	A
	Right Turn						
	Subtotal	**581**	**550**	**94.7%**	**10.1**	**1.2**	**B**
WB	Left Turn						
	Through	807	692	85.8%	16.0	1.0	B
	Right Turn	116	91	78.4%	18.1	1.8	B
	Subtotal	**923**	**783**	**84.8%**	**16.3**	**0.9**	**B**
Total		**1,536**	**1,366**	**88.9%**	**14.6**	**0.9**	**B**

Intersection 10 **Diamond Creek Blvd/Blue Oaks Blvd-Wal-Mart** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	20	21	104.0%	53.7	4.2	D
	Through	6	7	116.7%	61.7	13.1	E
	Right Turn	8	8	97.5%	12.4	6.3	B
	Subtotal	**34**	**36**	**104.7%**	**46.4**	**4.1**	**D**
SB	Left Turn	76	78	102.4%	50.2	4.3	D
	Through	8	7	86.3%	55.1	10.0	E
	Right Turn	47	48	102.1%	45.5	8.7	D
	Subtotal	**131**	**133**	**101.3%**	**48.8**	**5.2**	**D**
EB	Left Turn	19	19	102.1%	67.0	12.9	E
	Through	345	342	99.1%	24.4	2.7	C
	Right Turn	9	10	111.1%	5.8	2.3	A
	Subtotal	**373**	**371**	**99.5%**	**26.2**	**3.0**	**C**
WB	Left Turn	7	6	81.4%	73.9	25.3	E
	Through	692	553	79.8%	47.8	12.0	D
	Right Turn	58	47	81.7%	25.6	11.1	C
	Subtotal	**757**	**606**	**80.0%**	**46.4**	**12.0**	**D**
Total		**1,295**	**1,145**	**88.4%**	**40.0**	**6.5**	**D**

Intersection 15 **Foothills Blvd/Blue Oaks Blvd-Hwy 65 NB Ramp** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	144	109	75.9%	207.2	21.7	F
	Through	238	186	78.0%	207.8	21.4	F
	Right Turn	57	52	91.9%	5.0	5.0	A
	Subtotal	**439**	**347**	**79.1%**	**177.3**	**20.1**	**F**
SB	Left Turn	179	124	69.2%	284.4	45.5	F
	Through	198	191	96.5%	51.4	1.6	D
	Right Turn	77	77	99.5%	36.7	7.0	D
	Subtotal	**454**	**391**	**86.2%**	**122.0**	**13.7**	**F**
EB	Left Turn	33	30	89.7%	71.9	14.2	E
	Through	477	431	90.3%	59.9	6.9	E
	Right Turn	88	75	84.7%	60.7	8.4	E
	Subtotal	**598**	**535**	**89.4%**	**60.8**	**6.4**	**E**
WB	Left Turn	80	74	92.4%	66.7	7.5	E
	Through	702	595	84.8%	52.2	2.2	D
	Right Turn	101	89	88.0%	28.5	2.6	C
	Subtotal	**883**	**758**	**85.8%**	**50.9**	**2.0**	**D**
Total		**2,374**	**2,031**	**85.6%**	**88.7**	**5.7**	**F**

Intersection 11 **Woodcreek Oaks Blvd-Pleasant Grove Blvd/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	29	26	87.9%	63.1	12.5	E
	Through	84	73	87.3%	159.3	45.8	F
	Right Turn	54	47	86.3%	42.3	25.7	D
	Subtotal	**167**	**145**	**87.1%**	**105.4**	**33.4**	**F**
SB	Left Turn	147	130	88.4%	135.3	29.5	F
	Through	157	143	90.9%	138.6	38.5	F
	Right Turn	13	12	91.5%	80.5	36.1	F
	Subtotal	**317**	**285**	**89.8%**	**135.0**	**31.8**	**F**
EB	Left Turn	35	34	98.3%	57.4	10.2	E
	Through	373	362	97.1%	55.7	3.9	E
	Right Turn	40	39	96.3%	33.2	8.1	C
	Subtotal	**448**	**435**	**97.1%**	**53.9**	**3.2**	**D**
WB	Left Turn	175	151	86.5%	48.8	7.5	D
	Through	769	651	84.7%	33.2	7.6	C
	Right Turn						
	Subtotal	**944**	**802**	**85.0%**	**36.2**	**7.5**	**D**
Total		**1,876**	**1,667**	**88.9%**	**63.6**	**3.2**	**E**

Intersection 17 **Washington Blvd/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	166	152	91.3%	116.4	24.8	F
	Through						
	Right Turn	299	301	100.5%	55.7	15.6	E
	Subtotal	**465**	**452**	**97.2%**	**76.3**	**12.7**	**E**
SB	Left Turn	17	18	105.9%	61.9	8.4	E
	Through	129	126	98.0%	72.8	11.9	E
	Right Turn	52	56	107.1%	22.0	9.8	C
	Subtotal	**198**	**200**	**101.1%**	**57.8**	**10.8**	**E**
EB	Left Turn						
	Through	381	317	83.2%	68.4	15.4	E
	Right Turn	150	132	88.2%	14.1	2.2	B
	Subtotal	**531**	**449**	**84.6%**	**52.6**	**12.0**	**D**
WB	Left Turn	92	92	100.3%	58.3	6.8	E
	Through	299	302	101.0%	26.5	1.7	C
	Right Turn	99	101	102.0%	5.0	0.7	A
	Subtotal	**490**	**495**	**101.1%**	**28.0**	**1.6**	**C**
Total		**1,684**	**1,597**	**94.8%**	**52.4**	**5.6**	**D**

Intersection 12 **Wood Meadow Dwy/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	166	160	96.4%	68.3	20.0	E
	Through	2	1	50.0%	41.5	41.5	D
	Right Turn	3	5	153.3%	42.4	18.8	D
	Subtotal	**171**	**166**	**96.9%**	**67.6**	**20.0**	**E**
SB	Left Turn	18	19	103.3%	64.5	19.2	E
	Through	1	1	90.0%	26.1	26.9	C
	Right Turn						
	Subtotal	**19**	**20**	**102.6%**	**63.7**	**18.3**	**E**
EB	Left Turn						
	Through	560	527	94.1%	11.2	0.8	B
	Right Turn	14	15	104.3%	7.2	0.8	A
	Subtotal	**574**	**541**	**94.3%**	**11.1**	**0.7**	**B**
WB	Left Turn	28	23	82.9%	83.3	7.5	F
	Through	778	661	85.0%	20.7	6.0	C
	Right Turn	7	7	92.9%	2.6	1.0	A
	Subtotal	**813**	**691**	**85.0%**	**22.6**	**5.9**	**C**
Total		**1,577**	**1,417**	**89.9%**	**24.2**	**4.5**	**C**

Intersection 14 **Collector C/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	32	25	78.8%	77.1	8.5	E
	Through						
	Right Turn	72	36	50.6%	226.4	178.7	F
	Subtotal	**104**	**62**	**59.2%**	**146.0**	**73.1**	**F**
SB	Left Turn	44	24	54.5%	197.3	99.1	F
	Through						
	Right Turn	20	18	90.0%	84.0	88.9	F
	Subtotal	**64**	**42**	**65.6%**	**147.6**	**86.1**	**F**
EB	Left Turn	52	50	95.4%	43.7	9.1	D
	Through	2,276	1,961	86.2%	54.4	10.5	D
	Right Turn	64	57	88.8%	61.6	17.3	E
	Subtotal	**2,392**	**2,068**	**86.4%**	**54.3**	**10.2**	**D**
WB	Left Turn	32	28	86.3%	87.4	20.7	F
	Through	3,640	2,998	82.4%	12.1	0.7	B
	Right Turn	20	15	76.0%	9.1	2.7	A
	Subtotal	**3,692**	**3,040**	**82.4%**	**12.8**	**0.9**	**B**
Total		**6,252**	**5,212**	**83.4%**	**31.7**	**5.0**	**C**

Intersection 16 **Fidelity Way/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	356	367	103.0%	16.4	4.9	B
	Subtotal	**356**	**367**	**103.0%**	**16.4**	**4.9**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,764	1,440	81.6%	5.9	1.4	A
	Right Turn	20	18	88.0%	1.4	1.0	A
	Subtotal	**1,784**	**1,457**	**81.7%**	**5.9**	**1.3**	**A**
WB	Left Turn	32	37	116.3%	25.6	13.9	C
	Through	2,036	1,966	96.6%	4.6	0.3	A
	Right Turn						
	Subtotal	**2,068**	**2,003**	**96.9%**	**5.0**	**0.3**	**A**
Total		**4,208**	**3,827**	**91.0%**	**6.4**	**0.8**	**A**

Intersection 90 **Eureka Rd/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	576	564	98.0%	72.8	16.8	E
	Through	652	650	99.8%	52.5	4.1	D
	Right Turn	20	15	74.0%	40.6	25.4	D
	Subtotal	**1,248**	**1,230**	**98.5%**	**62.1**	**10.2**	**E**
SB	Left Turn	972	804	82.7%	193.2	25.1	F
	Through	860	782	90.9%	49.9	5.2	D
	Right Turn						
	Subtotal	**1,832**	**1,586**	**86.6%**	**123.1**	**12.9**	**F**
EB	Left Turn	168	149	88.6%	78.0	16.7	E
	Through	1,364	1,333	97.7%	44.6	4.0	D
	Right Turn	452	417	92.3%	41.0	6.6	D
	Subtotal	**1,984**	**1,899**	**95.7%**	**46.5**	**4.8**	**D**
WB	Left Turn	68	68	100.6%	89.1	14.3	F
	Through	1,704	1,608	94.3%	47.3	9.0	D
	Right Turn	568	520	91.6%	33.5	11.6	C
	Subtotal	**2,340**	**2,196**	**93.9%**	**45.3**	**9.5**	**D**
Total		**7,404**	**6,911**	**93.3%**	**66.3**	**3.4**	**E**

Intersection 105 **Rocky Ridge Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	308	299	97.1%	93.6	20.1	F
	Through	528	515	97.5%	41.8	4.3	D
	Right Turn	268	275	102.5%	29.9	5.0	C
	Subtotal	**1,104**	**1,089**	**98.6%**	**53.1**	**7.5**	**D**
SB	Left Turn	268	261	97.5%	93.8	8.8	F
	Through	1,204	1,166	96.8%	49.1	6.0	D
	Right Turn	508	491	96.6%	78.8	43.0	E
	Subtotal	**1,980**	**1,918**	**96.9%**	**63.2**	**12.3**	**E**
EB	Left Turn	136	118	86.8%	106.9	26.8	F
	Through	1,496	1,450	96.9%	30.4	2.2	C
	Right Turn	160	151	94.5%	17.5	3.4	B
	Subtotal	**1,792**	**1,719**	**95.9%**	**34.7**	**2.4**	**C**
WB	Left Turn	164	158	96.6%	66.0	8.9	E
	Through	1,920	1,772	92.3%	46.0	11.4	D
	Right Turn	184	166	90.2%	25.7	9.3	C
	Subtotal	**2,268**	**2,096**	**92.4%**	**45.9**	**10.8**	**D**
Total		**7,144**	**6,822**	**95.5%**	**49.2**	**6.0**	**D**

Intersection 102 **Santa Clara Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	88	85	96.8%	63.5	11.1	E
	Through	36	32	90.0%	55.5	15.1	E
	Right Turn	120	115	96.0%	22.2	6.9	C
	Subtotal	**244**	**233**	**95.4%**	**43.1**	**7.8**	**D**
SB	Left Turn	176	166	94.3%	57.7	8.1	E
	Through	92	84	90.9%	60.1	10.4	E
	Right Turn	132	134	101.2%	41.7	8.1	D
	Subtotal	**400**	**383**	**95.8%**	**52.7**	**5.5**	**D**
EB	Left Turn	148	121	81.6%	55.7	10.2	E
	Through	1,744	1,676	96.1%	25.5	2.7	C
	Right Turn	44	48	108.2%	28.5	8.2	C
	Subtotal	**1,936**	**1,844**	**95.2%**	**27.6**	**2.3**	**C**
WB	Left Turn	176	164	93.4%	52.4	23.0	D
	Through	2,480	2,218	89.5%	21.9	2.8	C
	Right Turn	44	34	76.4%	10.7	2.9	B
	Subtotal	**2,700**	**2,416**	**89.5%**	**23.8**	**3.9**	**C**
Total		**5,280**	**4,876**	**92.4%**	**28.5**	**2.2**	**C**

Intersection 103 **Sierra Gardens Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	176	170	96.4%	84.8	43.5	F
	Through	40	33	82.0%	89.1	47.3	F
	Right Turn	32	34	107.5%	83.5	49.0	F
	Subtotal	**248**	**237**	**95.5%**	**85.9**	**43.7**	**F**
SB	Left Turn	240	239	99.7%	56.4	16.1	E
	Through	52	51	98.5%	61.3	16.0	E
	Right Turn	40	42	106.0%	48.8	21.2	D
	Subtotal	**332**	**333**	**100.2%**	**56.2**	**15.8**	**E**
EB	Left Turn	48	40	83.3%	84.4	25.7	F
	Through	1,792	1,729	96.5%	16.1	1.9	B
	Right Turn	40	39	97.0%	9.2	2.0	A
	Subtotal	**1,880**	**1,808**	**96.2%**	**17.6**	**2.6**	**B**
WB	Left Turn	28	22	80.0%	94.3	17.0	F
	Through	2,668	2,423	90.8%	27.3	4.9	C
	Right Turn						
	Subtotal	**2,696**	**2,446**	**90.7%**	**27.9**	**4.8**	**C**
Total		**5,156**	**4,823**	**93.5%**	**29.0**	**4.8**	**C**

Intersection 101 **N. Sunrise Ave/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	416	377	90.6%	101.7	26.5	F
	Through	508	505	99.4%	47.0	4.0	D
	Right Turn	172	164	95.6%	24.5	2.2	C
	Subtotal	**1,096**	**1,046**	**95.4%**	**63.6**	**10.9**	**E**
SB	Left Turn	188	168	89.6%	62.2	7.0	E
	Through	820	826	100.7%	47.6	4.1	D
	Right Turn	484	460	95.1%	23.7	4.7	C
	Subtotal	**1,492**	**1,454**	**97.5%**	**41.8**	**3.1**	**D**
EB	Left Turn	452	339	75.0%	243.0	31.0	F
	Through	1,692	1,618	95.6%	63.2	11.9	E
	Right Turn	208	200	96.0%	14.0	2.3	B
	Subtotal	**2,352**	**2,156**	**91.7%**	**86.9**	**12.7**	**F**
WB	Left Turn	216	186	85.9%	56.4	5.0	E
	Through	2,336	2,062	88.3%	44.3	2.2	D
	Right Turn	152	118	77.6%	52.1	8.1	D
	Subtotal	**2,704**	**2,366**	**87.5%**	**45.7**	**2.4**	**D**
Total		**7,644**	**7,022**	**91.9%**	**60.2**	**3.5**	**E**

Intersection 104 **Target Dwy/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	144	140	97.2%	64.4	19.9	E
	Through	24	32	131.7%	56.7	29.9	E
	Right Turn	56	58	103.6%	36.0	19.9	D
	Subtotal	**224**	**230**	**102.5%**	**56.1**	**19.9**	**E**
SB	Left Turn	112	122	108.9%	58.7	11.2	E
	Through	12	13	110.0%	73.4	29.4	E
	Right Turn	136	118	86.8%	45.7	10.3	D
	Subtotal	**260**	**253**	**97.4%**	**53.3**	**10.3**	**D**
EB	Left Turn	168	155	92.1%	107.1	42.1	F
	Through	1,668	1,596	95.7%	20.6	6.4	C
	Right Turn	64	69	107.5%	17.9	4.0	B
	Subtotal	**1,900**	**1,819**	**95.7%**	**28.1**	**9.9**	**C**
WB	Left Turn	72	66	91.7%	117.8	13.7	F
	Through	2,500	2,298	91.9%	41.5	3.0	D
	Right Turn	16	14	87.5%	49.0	10.6	D
	Subtotal	**2,588**	**2,378**	**91.9%**	**43.7**	**3.3**	**D**
Total		**4,972**	**4,680**	**94.1%**	**38.8**	**5.0**	**D**

Intersection 77 **Douglas Blvd/E. Roseville Pkwy** **Signal**

SimTraffic Post-Processor **Amoruso Ranch Specific Plan EIR - Eureka Douglas**
Average Results from 10 Runs **2035 Cumulative No Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	268	270	100.6%	69.4	5.4	E
	Through	736	713	96.9%	51.7	2.9	D
	Right Turn	56	63	112.9%	22.9	5.0	C
	Subtotal	**1,060**	**1,046**	**98.7%**	**54.6**	**2.8**	**D**
SB	Left Turn	840	742	88.4%	148.7	30.5	F
	Through	1,132	1,104	97.5%	54.6	5.9	D
	Right Turn	148	136	91.6%	7.6	2.5	A
	Subtotal	**2,120**	**1,982**	**93.5%**	**86.8**	**12.3**	**F**
EB	Left Turn	228	195	85.6%	53.2	4.4	D
	Through	1,868	1,718	92.0%	31.2	2.6	C
	Right Turn	412	383	92.9%	26.5	4.6	C
	Subtotal	**2,508**	**2,296**	**91.5%**	**32.3**	**2.2**	**C**
WB	Left Turn	124	120	96.8%	75.9	16.3	E
	Through	1,656	1,606	97.0%	68.3	15.8	E
	Right Turn	984	918	93.3%	68.2	32.9	E
	Subtotal	**2,764**	**2,644**	**95.6%**	**68.4**	**21.1**	**E**
Total		**8,452**	**7,968**	**94.3%**	**60.8**	**7.0**	**E**

Intersction 87 **N. Sunrise Ave/Eureka Rd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	548	537	98.0%	71.2	17.4	E
	Through	548	586	106.9%	42.9	2.6	D
	Right Turn	212	235	110.9%	4.2	0.6	A
	Subtotal	**1,308**	**1,358**	**103.8%**	**47.6**	**7.8**	**D**
SB	Left Turn	160	169	105.8%	67.1	5.9	E
	Through	500	518	103.7%	48.7	6.0	D
	Right Turn	264	264	99.8%	26.3	3.4	C
	Subtotal	**924**	**951**	**102.9%**	**46.0**	**3.5**	**D**
EB	Left Turn	240	233	97.0%	133.6	44.6	F
	Through	1,708	1,652	96.7%	31.3	5.0	C
	Right Turn	388	370	95.3%	14.4	3.0	B
	Subtotal	**2,336**	**2,254**	**96.5%**	**39.3**	**6.9**	**D**
WB	Left Turn	196	182	92.7%	116.5	15.6	F
	Through	2,592	2,386	92.1%	85.8	18.2	F
	Right Turn	64	56	88.1%	41.2	18.3	D
	Subtotal	**2,852**	**2,624**	**92.0%**	**86.9**	**17.8**	**F**
Total		**7,420**	**7,188**	**96.9%**	**59.1**	**6.3**	**E**

Intersection 85 **I-80 WB Ramps/Atlantic** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn						
	Through						
	Right Turn	1,156	1,154	99.9%	1.9	0.5	A
	Subtotal	**1,156**	**1,154**	**99.9%**	**1.9**	**0.5**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	864	833	96.4%	18.8	2.5	B
	Right Turn	744	673	90.4%	28.8	2.2	C
	Subtotal	**1,608**	**1,506**	**93.6%**	**23.3**	**2.2**	**C**
WB	Left Turn	1,008	807	80.1%	124.8	44.4	F
	Through	1,312	1,201	91.5%	7.8	1.7	A
	Right Turn						
	Subtotal	**2,320**	**2,008**	**86.6%**	**54.9**	**19.1**	**D**
Total		**5,084**	**4,668**	**91.8%**	**31.6**	**8.4**	**C**

Intersection 86 **I-80 EB Ramps/Eureka Rd-Atlantic St** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	164	158	96.1%	55.4	13.5	E
	Through	460	446	96.9%	51.0	2.7	D
	Right Turn	588	596	101.4%	6.8	0.7	A
	Subtotal	**1,212**	**1,199**	**98.9%**	**29.5**	**2.2**	**C**
SB	Left Turn	388	346	89.2%	157.6	41.2	F
	Through						
	Right Turn	388	387	99.7%	101.4	39.3	F
	Subtotal	**776**	**733**	**94.4%**	**128.2**	**30.5**	**F**
EB	Left Turn	220	156	71.1%	237.3	68.6	F
	Through	1,452	1,471	101.3%	35.2	2.1	D
	Right Turn	344	321	93.3%	14.3	1.2	B
	Subtotal	**2,016**	**1,948**	**96.6%**	**47.8**	**4.5**	**D**
WB	Left Turn						
	Through	1,852	1,693	91.4%	46.7	19.9	D
	Right Turn	1,576	1,453	92.2%	50.7	17.2	D
	Subtotal	**3,428**	**3,146**	**91.8%**	**48.6**	**18.2**	**D**
Total		**7,432**	**7,026**	**94.5%**	**53.3**	**8.1**	**D**

Intersection 38 **Pleasant Grove Blvd/Fairway Dr** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	157	132	84.1%	91.3	16.7	F
	Through	340	295	86.6%	41.5	2.8	D
	Right Turn	161	135	83.9%	20.5	3.4	C
	Subtotal	**658**	**562**	**85.3%**	**48.2**	**6.1**	**D**
SB	Left Turn	32	27	85.0%	107.9	25.0	F
	Through	243	211	87.0%	134.0	30.1	F
	Right Turn	45	35	77.8%	123.2	37.4	F
	Subtotal	**320**	**274**	**85.5%**	**130.1**	**30.4**	**F**
EB	Left Turn	68	64	94.6%	60.4	4.1	E
	Through	131	129	98.3%	50.6	3.9	D
	Right Turn	144	119	82.8%	144.1	51.3	F
	Subtotal	**343**	**312**	**91.1%**	**88.4**	**20.9**	**F**
WB	Left Turn	171	137	80.2%	180.1	39.6	F
	Through	144	147	102.3%	38.0	2.8	D
	Right Turn	48	46	95.0%	17.7	3.0	B
	Subtotal	**363**	**330**	**90.9%**	**93.7**	**15.2**	**F**
Total		**1,684**	**1,478**	**87.7%**	**81.8**	**5.7**	**F**

Intersection 35 **Pleasant Grove Blvd/Highland Pointe Dr-Wal-Mart** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	104	92	88.4%	136.2	33.0	F
	Through	667	557	83.6%	126.3	20.9	F
	Right Turn	11	8	70.0%	136.6	20.9	F
	Subtotal	**782**	**657**	**84.0%**	**128.0**	**20.6**	**F**
SB	Left Turn	46	40	87.2%	76.1	10.2	E
	Through	527	471	89.4%	48.5	10.0	D
	Right Turn	77	71	92.2%	7.2	1.6	A
	Subtotal	**650**	**582**	**89.6%**	**45.4**	**8.2**	**D**
EB	Left Turn	184	110	59.9%	322.8	35.7	F
	Through	2	1	60.0%	130.3	76.8	F
	Right Turn	119	94	78.8%	119.2	30.7	F
	Subtotal	**305**	**205**	**67.3%**	**229.1**	**32.6**	**F**
WB	Left Turn	65	74	113.8%	50.7	5.6	D
	Through	6	6	96.7%	50.1	9.0	D
	Right Turn	86	80	93.3%	79.4	49.9	E
	Subtotal	**157**	**160**	**101.9%**	**66.3**	**25.4**	**E**
Total		**1,894**	**1,604**	**84.7%**	**104.7**	**6.2**	**F**

Intersection 37 **Pleasant Grove Blvd/Hwy 65 NB Ramp** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	198	189	95.6%	57.5	9.2	E
	Through						
	Right Turn	167	165	98.6%	40.8	11.0	D
	Subtotal	**365**	**354**	**97.0%**	**49.9**	**8.6**	**D**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	563	468	83.2%	13.4	1.1	B
	Right Turn	173	131	75.5%	11.3	1.1	B
	Subtotal	**736**	**599**	**81.4%**	**13.0**	**1.0**	**B**
WB	Left Turn						
	Through	535	447	83.5%	7.1	2.8	A
	Right Turn	55	48	88.0%	1.4	0.4	A
	Subtotal	**590**	**495**	**83.9%**	**6.6**	**2.7**	**A**
Total		**1,691**	**1,448**	**85.6%**	**19.8**	**2.2**	**B**

Intersection 36 **Pleasant Grove Blvd/Hwy 65 SB Ramp** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	42	38	89.8%	23.6	3.3	C
	Through						
	Right Turn	117	114	97.5%	21.4	4.3	C
	Subtotal	**159**	**152**	**95.5%**	**21.9**	**3.6**	**C**
EB	Left Turn						
	Through	694	559	80.5%	13.4	3.4	B
	Right Turn	3	2	76.7%	7.6	5.6	A
	Subtotal	**697**	**561**	**80.5%**	**13.4**	**3.4**	**B**
WB	Left Turn						
	Through	734	642	87.5%	11.8	3.2	B
	Right Turn						
	Subtotal	**734**	**642**	**87.5%**	**11.8**	**3.1**	**B**
Total		**1,590**	**1,355**	**85.2%**	**13.6**	**2.7**	**B**

Intersection 64 **Chase Dr/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	20	18	91.5%	64.6	6.4	E
	Through						
	Right Turn	20	19	96.0%	1.3	0.2	A
	Subtotal	**40**	**38**	**93.8%**	**32.3**	**6.8**	**C**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	616	434	70.4%	23.3	4.7	C
	Right Turn	35	23	65.4%	11.8	4.9	B
	Subtotal	**651**	**457**	**70.1%**	**22.7**	**4.6**	**C**
WB	Left Turn	113	86	76.1%	60.4	10.3	E
	Through	604	490	81.2%	9.2	2.0	A
	Right Turn						
	Subtotal	**717**	**576**	**80.4%**	**16.9**	**3.3**	**B**
Total		**1,408**	**1,070**	**76.0%**	**19.9**	**2.8**	**B**

Intersection 69 **Creekside Ridge Dr/Roseville Pkwy-North Drwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	15	16	109.3%	73.2	19.8	E
	Through						
	Right Turn	18	19	102.8%	25.3	9.8	C
	Subtotal	**33**	**35**	**105.8%**	**49.4**	**12.3**	**D**
SB	Left Turn	72	72	99.7%	50.8	3.7	D
	Through	1	1	80.0%	40.9	41.3	D
	Right Turn	77	78	101.2%	61.8	11.8	E
	Subtotal	**150**	**151**	**100.3%**	**56.6**	**6.8**	**E**
EB	Left Turn	26	16	63.1%	53.9	15.6	D
	Through	688	473	68.7%	16.2	1.4	B
	Right Turn	3	2	76.7%	0.2	0.7	A
	Subtotal	**717**	**492**	**68.6%**	**17.3**	**1.6**	**B**
WB	Left Turn	10	7	69.0%	74.7	15.0	E
	Through	699	570	81.5%	23.8	2.6	C
	Right Turn	56	44	79.3%	18.8	2.9	B
	Subtotal	**765**	**621**	**81.2%**	**24.1**	**2.4**	**C**
Total		**1,665**	**1,298**	**77.9%**	**25.9**	**1.7**	**C**

Intersection 65 **Gibson Dr-Castaic Ct/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1	1	50.0%	23.7	27.2	C
	Through	1	1	130.0%	55.6	53.8	E
	Right Turn	14	14	100.0%	25.9	10.8	C
	Subtotal	**16**	**16**	**98.8%**	**32.4**	**11.3**	**C**
SB	Left Turn	297	252	85.0%	137.7	24.9	F
	Through	2	1	45.0%	118.3	80.8	F
	Right Turn	90	76	83.9%	128.9	35.2	F
	Subtotal	**389**	**329**	**84.5%**	**135.8**	**26.5**	**F**
EB	Left Turn	54	39	71.3%	75.5	8.4	E
	Through	582	413	71.0%	12.0	1.8	B
	Right Turn						
	Subtotal	**636**	**452**	**71.0%**	**17.4**	**1.9**	**B**
WB	Left Turn	16	14	85.0%	72.5	11.9	E
	Through	627	503	80.2%	34.9	7.1	C
	Right Turn	165	133	80.6%	5.6	1.3	A
	Subtotal	**808**	**649**	**80.4%**	**29.7**	**5.7**	**C**
Total		**1,849**	**1,446**	**78.2%**	**49.9**	**7.2**	**D**

Intersection 71 **N. Sunrise/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	168	160	95.3%	101.3	28.1	F
	Through	17	16	96.5%	39.9	9.4	D
	Right Turn	72	72	99.7%	8.6	3.2	A
	Subtotal	**257**	**248**	**96.6%**	**70.8**	**18.9**	**E**
SB	Left Turn	2	2	100.0%	155.3	66.9	F
	Through	53	50	93.4%	116.3	39.8	F
	Right Turn	91	90	99.1%	46.4	6.6	D
	Subtotal	**146**	**142**	**97.1%**	**73.1**	**16.1**	**E**
EB	Left Turn	24	16	67.5%	63.3	13.9	E
	Through	639	443	69.3%	31.4	2.9	C
	Right Turn	178	122	68.7%	14.5	3.1	B
	Subtotal	**841**	**581**	**69.1%**	**28.8**	**2.7**	**C**
WB	Left Turn	70	40	57.4%	236.5	54.2	F
	Through	689	506	73.4%	63.5	10.2	E
	Right Turn						
	Subtotal	**759**	**546**	**71.9%**	**76.2**	**7.6**	**E**
Total		**2,003**	**1,517**	**75.7%**	**56.8**	**4.7**	**E**

Intersection 67 **Reserve Dr/Roseville Pkwy-Burger King Drwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	94	74	78.6%	200.6	41.9	F
	Through	24	18	76.7%	220.8	39.7	F
	Right Turn	117	85	73.0%	201.2	48.0	F
	Subtotal	**235**	**178**	**75.6%**	**203.6**	**23.7**	**F**
SB	Left Turn	76	79	103.6%	45.0	4.9	D
	Through	49	48	97.3%	48.5	6.7	D
	Right Turn	21	22	103.3%	7.2	4.3	A
	Subtotal	**146**	**148**	**101.4%**	**40.6**	**4.5**	**D**
EB	Left Turn	8	5	61.3%	89.2	23.1	F
	Through	783	580	74.1%	57.5	7.0	E
	Right Turn	59	38	63.6%	53.7	10.7	D
	Subtotal	**850**	**623**	**73.2%**	**57.5**	**6.6**	**E**
WB	Left Turn	89	63	71.2%	102.0	42.0	F
	Through	662	517	78.1%	16.4	4.4	B
	Right Turn	66	51	77.4%	2.8	0.4	A
	Subtotal	**817**	**632**	**77.3%**	**24.0**	**7.7**	**C**
Total		**2,048**	**1,580**	**77.2%**	**59.0**	**5.4**	**E**

Intersection 72 **Secret Ravine Pkwy/Roseville Pkwy-Douglas Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	41	37	91.0%	102.3	33.6	F
	Through						
	Right Turn	133	127	95.7%	105.1	36.7	F
	Subtotal	**174**	**165**	**94.6%**	**104.6**	**33.8**	**F**
EB	Left Turn	168	116	68.8%	48.8	11.6	D
	Through	502	358	71.3%	4.4	1.1	A
	Right Turn	1	1	60.0%	0.4	0.7	A
	Subtotal	**671**	**474**	**70.7%**	**15.2**	**3.4**	**B**
WB	Left Turn	4	4	92.5%	122.3	27.5	F
	Through	589	478	81.1%	92.4	28.6	F
	Right Turn	38	35	92.1%	55.4	27.0	E
	Subtotal	**631**	**516**	**81.8%**	**90.1**	**28.4**	**F**
Total		**1,476**	**1,155**	**78.3%**	**61.1**	**12.0**	**E**

Intersection 70 **Taylor Rd/Roseville Pkwy** **Signal**

SimTraffic Post-Processor **Amoruso Ranch EIR**
Average Results from 10 Runs **2035 Cumulative No Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	83	82	98.3%	61.0	13.9	E
	Through	110	109	99.2%	46.2	3.0	D
	Right Turn	58	58	99.3%	30.6	8.1	C
	Subtotal	**251**	**248**	**98.9%**	**47.9**	**6.1**	**D**
SB	Left Turn	111	51	45.9%	415.7	35.8	F
	Through	72	67	93.5%	53.9	4.9	D
	Right Turn	51	44	86.1%	28.2	5.7	C
	Subtotal	**234**	**162**	**69.3%**	**162.2**	**19.4**	**F**
EB	Left Turn	74	49	66.5%	122.3	36.0	F
	Through	657	471	71.7%	26.4	3.7	C
	Right Turn	32	26	80.6%	6.5	1.3	A
	Subtotal	**763**	**546**	**71.5%**	**34.4**	**4.9**	**C**
WB	Left Turn	51	38	73.5%	78.1	12.2	E
	Through	644	503	78.1%	64.4	10.2	E
	Right Turn	251	189	75.2%	53.7	4.1	D
	Subtotal	**946**	**729**	**77.1%**	**62.5**	**7.1**	**E**
Total		**2,194**	**1,685**	**76.8%**	**60.6**	**4.3**	**E**

Intersection 66 **Roseville Pkwy/West Mall Dwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	8	7	87.5%	64.9	14.7	E
	Through	714	551	77.1%	18.2	4.6	B
	Right Turn	26	18	69.6%	2.4	1.1	A
	Subtotal	**748**	**576**	**77.0%**	**18.3**	**4.2**	**B**
SB	Left Turn	81	63	77.5%	79.1	23.5	E
	Through	802	603	75.1%	14.6	4.8	B
	Right Turn	9	7	76.7%	11.0	10.9	B
	Subtotal	**892**	**672**	**75.4%**	**20.7**	**6.2**	**C**
EB	Left Turn	6	4	71.7%	53.4	22.1	D
	Through	1	1	120.0%	55.8	33.0	E
	Right Turn	6	7	123.3%	29.3	12.1	C
	Subtotal	**13**	**13**	**99.2%**	**42.0**	**13.8**	**D**
WB	Left Turn	34	33	97.4%	50.6	6.8	D
	Through	1	1	80.0%	27.4	33.6	C
	Right Turn	88	95	108.0%	3.0	0.5	A
	Subtotal	**123**	**129**	**104.8%**	**15.6**	**2.7**	**B**
Total		**1,776**	**1,390**	**78.3%**	**19.4**	**4.6**	**B**

Intersection 63 **Gibson Dr/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	21	20	92.9%	62.6	11.4	E
	Through						
	Right Turn	253	220	87.0%	54.5	35.5	D
	Subtotal	**274**	**240**	**87.4%**	**55.3**	**32.8**	**E**
EB	Left Turn	118	82	69.6%	74.0	10.4	E
	Through	631	438	69.4%	7.0	3.6	A
	Right Turn						
	Subtotal	**749**	**520**	**69.4%**	**17.7**	**3.5**	**B**
WB	Left Turn						
	Through	599	398	66.5%	86.4	26.6	F
	Right Turn	26	16	61.9%	69.7	25.7	E
	Subtotal	**625**	**415**	**66.3%**	**85.7**	**26.2**	**F**
Total		**1,648**	**1,174**	**71.2%**	**48.8**	**12.6**	**D**

Intersection 174 **Galleria/Antelope Creek** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	28	22	78.6%	56.0	6.0	E
	Through	494	436	88.2%	17.3	2.8	B
	Right Turn	50	46	92.2%	1.9	0.2	A
	Subtotal	**572**	**504**	**88.1%**	**17.6**	**2.5**	**B**
SB	Left Turn	71	49	69.0%	167.8	44.7	F
	Through	455	343	75.4%	108.5	46.7	F
	Right Turn	43	44	102.8%	7.1	1.9	A
	Subtotal	**569**	**436**	**76.7%**	**104.8**	**41.0**	**F**
EB	Left Turn	135	131	97.2%	66.1	22.6	E
	Through	18	19	107.2%	49.9	7.8	D
	Right Turn	28	28	100.7%	1.0	0.3	A
	Subtotal	**181**	**179**	**98.7%**	**54.0**	**16.1**	**D**
WB	Left Turn	123	75	60.6%	198.2	65.9	F
	Through	24	25	103.3%	58.9	5.7	E
	Right Turn	84	84	100.2%	4.7	1.9	A
	Subtotal	**231**	**184**	**79.4%**	**87.5**	**20.9**	**F**
Total		**1,553**	**1,302**	**83.9%**	**60.7**	**14.3**	**E**

Intersection 68 **Galleria/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	173	101	58.5%	315.7	19.1	F
	Through	224	216	96.5%	53.1	6.1	D

NB	Right Turn	21	21	98.1%	5.2	0.7	A
	Subtotal	**418**	**338**	**80.9%**	**128.9**	**7.2**	**F**
SB	Left Turn	211	113	53.5%	265.5	61.0	F
	Through	248	211	85.1%	34.3	3.9	C
	Right Turn	122	103	84.7%	4.4	0.4	A
	Subtotal	**581**	**427**	**73.5%**	**85.6**	**5.8**	**F**
EB	Left Turn	183	124	68.0%	118.8	26.6	F
	Through	488	367	75.3%	53.9	9.4	D
	Right Turn	281	195	69.3%	7.1	1.3	A
	Subtotal	**952**	**687**	**72.1%**	**52.6**	**9.2**	**D**
WB	Left Turn	88	72	81.4%	73.4	14.3	E
	Through	498	407	81.7%	44.2	8.3	D
	Right Turn	173	153	88.4%	3.2	0.2	A
	Subtotal	**759**	**632**	**83.2%**	**37.8**	**4.4**	**D**
Total		**2,710**	**2,083**	**76.9%**	**67.1**	**4.4**	**E**

Intersection 34 **Pleasant Grove Blvd/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	249	150	60.4%	125.7	9.8	F
	Through	378	280	74.0%	51.4	5.3	D
	Right Turn	292	209	71.5%	6.5	0.7	A
	Subtotal	**919**	**639**	**69.5%**	**54.3**	**3.5**	**D**
SB	Left Turn	80	55	69.3%	196.5	46.3	F
	Through	323	236	73.0%	223.9	40.2	F
	Right Turn	7	5	68.6%	129.0	58.2	F
	Subtotal	**410**	**296**	**72.2%**	**217.5**	**40.9**	**F**
EB	Left Turn	17	14	80.0%	108.6	25.8	F
	Through	344	242	70.3%	228.4	18.8	F
	Right Turn	203	144	70.8%	215.7	26.9	F
	Subtotal	**564**	**399**	**70.8%**	**219.6**	**21.0**	**F**
WB	Left Turn	237	151	63.8%	293.4	32.6	F
	Through	430	425	98.7%	52.1	6.5	D
	Right Turn	62	58	94.2%	17.7	4.9	B
	Subtotal	**729**	**634**	**87.0%**	**106.5**	**11.7**	**F**
Total		**2,622**	**1,968**	**75.1%**	**128.9**	**6.3**	**F**

Intersection 107 **Foothills Blvd/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	164	115	70.2%	128.7	4.3	F
	Right Turn	138	80	57.7%	117.4	9.7	F
	Subtotal	**302**	**195**	**64.5%**	**124.0**	**5.3**	**F**
SB	Left Turn	493	380	77.0%	37.7	2.1	D
	Through	126	116	91.8%	8.4	4.4	A
	Right Turn						
	Subtotal	**619**	**495**	**80.0%**	**31.0**	**1.8**	**C**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	213	119	56.0%	123.9	20.1	F
	Through						
	Right Turn	588	330	56.1%	74.6	17.2	E
	Subtotal	**801**	**449**	**56.0%**	**87.8**	**18.7**	**F**
Total		**1,722**	**1,139**	**66.1%**	**68.9**	**6.1**	**E**

Intersection 110 **Melody Ln/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	63	45	71.9%	97.7	121.4	F
	Subtotal	**63**	**45**	**71.9%**	**97.7**	**121.4**	**F**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	589	404	68.6%	17.2	5.5	B
	Right Turn	4	3	62.5%	5.4	4.3	A
	Subtotal	**593**	**407**	**68.6%**	**17.1**	**5.4**	**B**
WB	Left Turn	86	54	63.0%	26.2	4.3	C
	Through	700	449	64.2%	6.2	1.9	A
	Right Turn						
	Subtotal	**786**	**504**	**64.1%**	**8.4**	**1.7**	**A**
Total		**1,442**	**956**	**66.3%**	**14.9**	**4.2**	**B**

Intersection 109 **Northridge Dr/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1	1	50.0%	10.7	15.1	B
	Through						
	Right Turn	6	5	83.3%	21.5	13.2	C
	Subtotal	**7**	**6**	**78.6%**	**24.2**	**13.3**	**C**
SB	Left Turn	9	9	102.2%	69.6	25.4	E
	Through						
	Right Turn	6	5	85.0%	34.3	43.1	C
	Subtotal	**15**	**14**	**95.3%**	**57.0**	**31.7**	**E**
EB	Left Turn	4	3	65.0%	57.4	42.1	E
	Through	581	418	71.9%	8.5	5.4	A
	Right Turn	7	5	65.7%	7.2	8.5	A
	Subtotal	**592**	**425**	**71.8%**	**8.8**	**5.8**	**A**
WB	Left Turn	3	2	56.7%	46.7	26.1	D
	Through	680	438	64.4%	9.6	9.0	A
	Right Turn						
	Subtotal	**683**	**440**	**64.4%**	**9.7**	**9.1**	**A**
Total		**1,297**	**885**	**68.2%**	**10.2**	**7.7**	**B**

Intersection 111 **Riverside Ave/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	358	204	56.9%	139.8	11.1	F
	Through	168	112	66.8%	42.6	5.5	D
	Right Turn	69	47	67.8%	12.9	4.1	B
	Subtotal	**595**	**363**	**61.0%**	**93.4**	**6.6**	**F**
SB	Left Turn	76	48	62.9%	289.6	64.6	F
	Through	183	110	60.2%	413.6	54.4	F
	Right Turn	61	31	51.5%	362.3	55.1	F
	Subtotal	**320**	**189**	**59.2%**	**373.3**	**53.7**	**F**
EB	Left Turn	63	24	38.4%	507.3	147.0	F
	Through	284	204	71.8%	31.1	4.5	C
	Right Turn	305	215	70.4%	3.1	0.1	A
	Subtotal	**652**	**443**	**67.9%**	**42.8**	**7.2**	**D**
WB	Left Turn	9	6	65.6%	247.7	46.4	F
	Through	404	295	73.0%	239.1	38.9	F
	Right Turn						
	Subtotal	**413**	**301**	**72.8%**	**239.2**	**38.6**	**F**
Total		**1,980**	**1,296**	**65.4%**	**150.3**	**12.8**	**F**

Intersection 108 **Vernon St/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	4	4	92.5%	82.2	45.4	F
	Through	14	14	98.6%	52.7	10.6	D
	Right Turn	28	29	102.9%	29.6	6.0	C
	Subtotal	**46**	**46**	**100.7%**	**41.3**	**3.0**	**D**
SB	Left Turn	16	14	88.8%	132.0	63.7	F
	Through	16	14	86.3%	131.8	66.3	F
	Right Turn	175	106	60.7%	297.6	102.1	F
	Subtotal	**207**	**134**	**64.9%**	**262.3**	**93.4**	**F**
EB	Left Turn	91	66	72.6%	62.2	5.5	E
	Through	535	389	72.7%	25.1	3.1	C
	Right Turn	5	4	76.0%	31.5	9.8	C
	Subtotal	**631**	**459**	**72.7%**	**30.5**	**2.8**	**C**
WB	Left Turn	23	13	57.4%	90.7	20.4	F
	Through	622	371	59.6%	53.9	20.8	D
	Right Turn	11	6	52.7%	33.3	17.7	C
	Subtotal	**656**	**390**	**59.4%**	**54.9**	**20.6**	**D**
Total		**1,540**	**1,029**	**66.8%**	**69.3**	**12.4**	**E**

Intersection 203 **Riverside Ave/I-80 WB Ramps** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	462	274	59.4%	190.8	36.2	F
	Right Turn	47	32	67.9%	30.9	8.6	C
	Subtotal	**509**	**306**	**60.1%**	**174.3**	**33.6**	**F**
SB	Left Turn						
	Through	253	169	66.7%	10.7	3.4	B
	Right Turn	244	165	67.7%	0.6	0.2	A
	Subtotal	**497**	**334**	**67.2%**	**5.7**	**1.8**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	215	204	94.7%	60.3	29.4	E
	Through						
	Right Turn	114	81	70.8%	161.9	81.7	F
	Subtotal	**329**	**284**	**86.4%**	**89.2**	**37.1**	**F**
Total		**1,335**	**924**	**69.2%**	**86.3**	**14.8**	**F**

Intersection 204 **Riverside Ave/I-80 EB Ramps** **Signal**

SimTraffic Post-Processor **Amoruso EIR**
Average Results from 10 Runs **2035 Cumulative No Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	382	278	72.6%	137.1	52.5	F
	Right Turn	18	14	77.8%	132.1	52.0	F
	Subtotal	**400**	**292**	**72.9%**	**136.9**	**52.2**	**F**
SB	Left Turn	27	20	73.0%	85.4	9.1	F
	Through	394	307	77.9%	21.9	1.6	C
	Right Turn						
	Subtotal	**421**	**327**	**77.6%**	**25.7**	**1.7**	**C**
EB	Left Turn						
	Through	106	110	103.9%	63.6	3.6	E
	Right Turn	34	34	98.8%	30.2	6.5	C
	Subtotal	**140**	**144**	**102.6%**	**55.9**	**3.6**	**E**
WB	Left Turn	31	30	96.1%	44.5	8.3	D
	Through						
	Right Turn	121	109	90.2%	81.1	43.9	F
	Subtotal	**152**	**139**	**91.4%**	**73.9**	**35.7**	**E**
Total		**1,113**	**901**	**80.9%**	**72.9**	**17.4**	**E**

Intersection 169 **Stanford Ranch Rd/Fairway Dr** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	78	64	81.7%	53.6	10.5	D
	Through	340	349	102.5%	27.0	7.8	C
	Right Turn	56	59	104.6%	13.2	2.7	B
	Subtotal	**474**	**471**	**99.3%**	**28.9**	**5.7**	**C**
SB	Left Turn	18	19	107.2%	53.6	8.0	D
	Through	216	245	113.5%	25.4	2.3	C
	Right Turn	21	21	101.0%	7.6	1.8	A
	Subtotal	**255**	**286**	**112.0%**	**26.0**	**2.2**	**C**
EB	Left Turn	22	19	85.0%	51.1	6.2	D
	Through	93	93	99.8%	32.6	4.9	C
	Right Turn	74	70	94.1%	13.8	3.2	B
	Subtotal	**189**	**181**	**95.8%**	**27.3**	**3.1**	**C**
WB	Left Turn	51	51	100.4%	47.7	5.6	D
	Through	52	57	109.2%	34.3	5.1	C
	Right Turn	5	3	66.0%	29.3	15.4	C
	Subtotal	**108**	**111**	**103.1%**	**40.6**	**3.5**	**D**
Total		**1,026**	**1,049**	**102.2%**	**29.1**	**3.1**	**C**

Intersection 170 **Stanford Ranch Rd/5 Star Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	162	156	96.4%	72.5	16.6	E
	Through	430	441	102.4%	29.7	4.3	C
	Right Turn	57	57	99.5%	11.4	1.0	B
	Subtotal	**649**	**653**	**100.7%**	**38.4**	**6.7**	**D**
SB	Left Turn	29	30	104.5%	65.3	21.5	E
	Through	305	329	107.8%	42.8	7.6	D
	Right Turn	34	33	97.4%	11.8	3.5	B
	Subtotal	**368**	**392**	**106.5%**	**42.0**	**7.8**	**D**
EB	Left Turn	28	24	85.7%	156.3	53.0	F
	Through	28	24	85.7%	153.1	43.9	F
	Right Turn	72	73	100.7%	19.1	4.9	B
	Subtotal	**128**	**121**	**94.1%**	**74.9**	**22.8**	**E**
WB	Left Turn	81	91	112.5%	33.7	2.5	C
	Through	21	20	95.2%	35.7	7.3	D
	Right Turn	21	12	57.1%	20.3	4.4	C
	Subtotal	**123**	**123**	**100.1%**	**32.7**	**2.4**	**C**
Total		**1,268**	**1,289**	**101.7%**	**42.3**	**4.7**	**D**

Intersection 171 **Stanford Ranch Rd-Galleria Blvd/Hwy 65 NB ramp** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	215	213	99.2%	43.7	7.0	D
	Through	433	437	101.0%	14.0	1.4	B
	Right Turn						
	Subtotal	**648**	**650**	**100.4%**	**23.7**	**3.1**	**C**
SB	Left Turn						
	Through	452	474	104.9%	20.7	4.9	C
	Right Turn	82	95	116.2%	18.0	4.2	B
	Subtotal	**534**	**569**	**106.6%**	**20.3**	**4.7**	**C**
EB	Left Turn						
	Through						
	Right Turn	132	132	100.3%	6.8	1.5	A
	Subtotal	**132**	**132**	**100.3%**	**6.8**	**1.5**	**A**
WB	Left Turn						
	Through						
	Right Turn	217	223	102.9%	10.2	1.7	B
	Subtotal	**217**	**223**	**102.9%**	**10.2**	**1.7**	**B**
Total		**1,531**	**1,575**	**102.9%**	**19.2**	**1.9**	**B**

Intersection 172 **Galleria Blvd/Hwy 65 SB Ramps** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	604	612	101.4%	23.7	2.0	C
	Right Turn	156	154	99.0%	20.3	2.6	C
	Subtotal	**760**	**767**	**100.9%**	**23.1**	**1.7**	**C**
SB	Left Turn	146	143	98.0%	47.6	13.4	D
	Through	438	449	102.5%	56.4	5.9	E
	Right Turn						
	Subtotal	**584**	**592**	**101.4%**	**54.4**	**3.7**	**D**
EB	Left Turn						
	Through						
	Right Turn	239	220	92.1%	25.7	14.6	C
	Subtotal	**239**	**220**	**92.1%**	**25.7**	**14.6**	**C**
WB	Left Turn						
	Through	44	45	102.3%	2.4	1.1	A
	Right Turn						
	Subtotal	**44**	**45**	**102.3%**	**2.4**	**1.1**	**A**
Total		**1,627**	**1,624**	**99.8%**	**34.3**	**3.4**	**C**

INTERSECTIONS OUTSIDE OF ROSEVILLE

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	18	609	971	89	361	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	20	669	1067	98	397	1
RTOR Reduction (vph)	0	0	0	66	0	1
Lane Group Flow (vph)	20	669	1067	32	397	0
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.1	20.9	14.8	14.8	14.2	14.2
Effective Green, g (s)	1.1	20.9	14.8	14.8	14.2	14.2
Actuated g/C Ratio	0.02	0.46	0.33	0.33	0.31	0.31
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	43	2356	1668	519	557	498
v/s Ratio Prot	0.01	c0.13	c0.21		c0.22	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.47	0.28	0.64	0.06	0.71	0.00
Uniform Delay, d1	21.7	7.5	12.9	10.4	13.6	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	0.1	0.8	0.1	4.3	0.0
Delay (s)	29.5	7.5	13.7	10.4	17.9	10.6
Level of Service	C	A	B	B	B	B
Approach Delay (s)		8.2	13.4		17.9	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	45.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰	↑↑↑	↰	↱
Volume (vph)	586	385	174	871	184	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	651	428	193	968	204	231
RTOR Reduction (vph)	0	305	0	0	0	142
Lane Group Flow (vph)	651	123	193	968	204	89
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	13.9	13.9	8.2	27.1	11.3	11.3
Effective Green, g (s)	13.9	13.9	8.2	27.1	11.3	11.3
Actuated g/C Ratio	0.29	0.29	0.17	0.56	0.23	0.23
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1460	454	299	2847	413	369
v/s Ratio Prot	c0.13		c0.11	0.19	c0.12	
v/s Ratio Perm		0.08				0.06
v/c Ratio	0.45	0.27	0.65	0.34	0.49	0.24
Uniform Delay, d1	14.1	13.3	18.7	5.8	16.1	15.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	4.7	0.1	0.9	0.3
Delay (s)	14.3	13.7	23.5	5.9	17.0	15.4
Level of Service	B	B	C	A	B	B
Approach Delay (s)	14.1			8.8	16.2	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	315	423	154	40	149	186	10	7	11	147	39	14
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	371	498	181	47	175	219	12	8	13	173	46	16

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	1049	441	33	235
Volume Left (vph)	371	47	12	173
Volume Right (vph)	181	219	13	16
Hadj (s)	0.00	-0.24	-0.13	0.14
Departure Headway (s)	5.6	5.6	7.5	6.9
Degree Utilization, x	1.0	0.69	0.07	0.45
Capacity (veh/h)	643	620	415	498
Control Delay (s)	311.6	20.4	11.0	15.4
Approach Delay (s)	311.6	20.4	11.0	15.4
Approach LOS	F	C	B	C

Intersection Summary			
Delay	193.3		
Level of Service	F		
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	258	528	181	249	364	453
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	272	556	191	262	383	477
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			827		915	272
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			827		915	272
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			76		0	38
cM capacity (veh/h)			804		231	767

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	272	556	191	262	383	477
Volume Left	0	0	191	0	383	0
Volume Right	0	556	0	0	0	477
cSH	1700	1700	804	1700	231	767
Volume to Capacity	0.16	0.33	0.24	0.15	1.66	0.62
Queue Length 95th (ft)	0	0	23	0	620	110
Control Delay (s)	0.0	0.0	10.9	0.0	351.8	17.1
Lane LOS			B		F	C
Approach Delay (s)	0.0		4.6		166.2	
Approach LOS					F	

Intersection Summary				
Average Delay	67.8			
Intersection Capacity Utilization	53.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1059	136	0	1166	401	493	0	1060	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Lane Util. Factor		0.91	1.00		0.91	1.00	0.95	0.95	0.88			
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1681	1681	2787			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1681	1681	2787			
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	1203	155	0	1325	456	560	0	1205	0	0	0
RTOR Reduction (vph)	0	0	83	0	0	320	0	0	757	0	0	0
Lane Group Flow (vph)	0	1203	72	0	1325	136	280	280	448	0	0	0
Turn Type		NA	Perm		NA	Perm	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			2			6			8			
Actuated Green, G (s)		23.6	23.6		26.0	26.0	21.4	21.4	21.4			
Effective Green, g (s)		23.6	23.6		26.0	26.0	21.4	21.4	21.4			
Actuated g/C Ratio		0.27	0.27		0.30	0.30	0.25	0.25	0.25			
Clearance Time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Vehicle Extension (s)		1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Lane Grp Cap (vph)		1380	429		1521	473	413	413	686			
v/s Ratio Prot		c0.24			c0.26		c0.17	0.17				
v/s Ratio Perm			0.05			0.09			0.16			
v/c Ratio		0.87	0.17		0.87	0.29	0.68	0.68	0.65			
Uniform Delay, d1		30.2	24.2		28.9	23.4	29.6	29.6	29.4			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		6.1	0.1		5.6	0.1	3.5	3.5	1.7			
Delay (s)		36.3	24.2		34.5	23.5	33.1	33.1	31.1			
Level of Service		D	C		C	C	C	C	C			
Approach Delay (s)		35.0			31.6			31.8			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	15.9
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	670	438	0	1153	511	0	0	0	528	0	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)		5085	1583		5085	1583				1681	1602	1504
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)		5085	1583		5085	1583				1681	1602	1504
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	753	492	0	1296	574	0	0	0	593	0	229
RTOR Reduction (vph)	0	0	393	0	0	365	0	0	0	0	81	161
Lane Group Flow (vph)	0	753	99	0	1296	209	0	0	0	308	227	45
Turn Type		NA	Perm		NA	Perm				Split	NA	Perm
Protected Phases		2			6					4	4	
Permitted Phases			2			6						4
Actuated Green, G (s)		14.2	14.2		25.6	25.6				15.3	15.3	15.3
Effective Green, g (s)		14.2	14.2		25.6	25.6				15.3	15.3	15.3
Actuated g/C Ratio		0.20	0.20		0.36	0.36				0.22	0.22	0.22
Clearance Time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Vehicle Extension (s)		1.0	1.0		1.0	1.0				1.0	1.0	1.0
Lane Grp Cap (vph)		1027	319		1851	576				365	348	327
v/s Ratio Prot		c0.15			c0.25					c0.18	0.14	
v/s Ratio Perm			0.06			0.13						0.03
v/c Ratio		0.73	0.31		0.70	0.36				0.84	0.65	0.14
Uniform Delay, d1		26.3	23.9		19.1	16.4				26.4	25.1	22.2
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		2.4	0.2		1.0	0.1				15.5	3.3	0.1
Delay (s)		28.6	24.1		20.1	16.5				41.9	28.4	22.2
Level of Service		C	C		C	B				D	C	C
Approach Delay (s)		26.8			19.0			0.0			31.9	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	15.2
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	41	240	74	30	36	352	1508	170	135	596	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1624		1681	1732	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1624		1681	1732	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	46	267	82	33	40	391	1676	189	150	662	23
RTOR Reduction (vph)	0	234	0	0	0	36	0	0	110	0	0	18
Lane Group Flow (vph)	30	79	0	57	58	4	391	1676	79	150	662	5
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	9.0	9.0		6.4	6.4	6.4	20.6	30.3	30.3	6.8	16.5	16.5
Effective Green, g (s)	9.0	9.0		6.4	6.4	6.4	20.6	30.3	30.3	6.8	16.5	16.5
Actuated g/C Ratio	0.12	0.12		0.09	0.09	0.09	0.28	0.42	0.42	0.09	0.23	0.23
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	219	201		148	152	139	502	2125	661	321	1157	360
v/s Ratio Prot	0.02	c0.05		c0.03	0.03		c0.22	c0.33		0.04	0.13	
v/s Ratio Perm						0.00			0.05			0.00
v/c Ratio	0.14	0.39		0.39	0.38	0.03	0.78	0.79	0.12	0.47	0.57	0.01
Uniform Delay, d1	28.3	29.2		31.2	31.2	30.2	23.9	18.3	12.9	31.1	24.9	21.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.3		1.7	1.6	0.1	7.5	2.0	0.1	1.1	0.7	0.0
Delay (s)	28.6	30.5		32.9	32.8	30.3	31.4	20.3	13.0	32.2	25.6	21.7
Level of Service	C	C		C	C	C	C	C	B	C	C	C
Approach Delay (s)		30.3			32.2			21.6			26.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1082	98	184	300	16	408	608	641	119	442	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	1202	109	204	333	18	453	676	712	132	491	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	1202	109	204	333	18	453	676	712	132	491	39
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	3.1	33.1	91.3	9.9	39.9	91.3	13.0	19.6	91.3	8.7	15.3	91.3
Effective Green, g (s)	3.1	33.1	91.3	9.9	39.9	91.3	13.0	19.6	91.3	8.7	15.3	91.3
Actuated g/C Ratio	0.03	0.36	1.00	0.11	0.44	1.00	0.14	0.21	1.00	0.10	0.17	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	60	1283	1583	372	1546	1583	488	759	1583	327	593	1583
v/s Ratio Prot	0.01	c0.34		0.06	0.09		c0.13	c0.19		0.04	0.14	
v/s Ratio Perm			0.07			0.01			c0.45			0.02
v/c Ratio	0.37	0.94	0.07	0.55	0.22	0.01	0.93	0.89	0.45	0.40	0.83	0.02
Uniform Delay, d1	43.1	28.1	0.0	38.6	16.0	0.0	38.7	34.8	0.0	38.9	36.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	12.8	0.1	1.7	0.1	0.0	23.9	12.7	0.9	0.8	9.3	0.0
Delay (s)	46.9	40.8	0.1	40.2	16.0	0.0	62.6	47.5	0.9	39.7	46.0	0.0
Level of Service	D	D	A	D	B	A	E	D	A	D	D	A
Approach Delay (s)		37.6			24.4			33.2			42.0	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	349	34	805	478	131	8	265	267	79	1093	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	166	388	38	894	531	146	9	294	297	88	1214	11
RTOR Reduction (vph)	0	0	32	0	0	93	0	0	206	0	0	7
Lane Group Flow (vph)	166	388	6	894	531	53	9	294	91	88	1214	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.9	19.8	19.8	36.3	46.2	46.2	1.1	39.1	39.1	10.3	48.3	48.3
Effective Green, g (s)	9.9	19.8	19.8	36.3	46.2	46.2	1.1	39.1	39.1	10.3	48.3	48.3
Actuated g/C Ratio	0.08	0.16	0.16	0.29	0.36	0.36	0.01	0.31	0.31	0.08	0.38	0.38
Clearance Time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	267	551	246	981	1287	575	15	1089	487	143	1345	602
v/s Ratio Prot	0.05	c0.11		c0.26	0.15		0.01	0.08		c0.05	c0.34	
v/s Ratio Perm			0.00			0.03			0.06			0.00
v/c Ratio	0.62	0.70	0.02	0.91	0.41	0.09	0.60	0.27	0.19	0.62	0.90	0.01
Uniform Delay, d1	56.7	50.8	45.4	43.8	30.2	26.6	62.7	33.2	32.3	56.4	37.1	24.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	4.1	0.0	12.1	0.2	0.1	36.3	0.1	0.2	5.4	8.7	0.0
Delay (s)	60.0	54.9	45.5	55.9	30.5	26.7	99.0	33.3	32.5	61.9	45.8	24.5
Level of Service	E	D	D	E	C	C	F	C	C	E	D	C
Approach Delay (s)		55.7			44.6			33.9			46.7	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	45.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	127.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	1308	832	316	108	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	1	1437	914	347	119	30
RTOR Reduction (vph)	0	0	0	198	0	24
Lane Group Flow (vph)	1	1437	914	149	119	6
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.9	24.2	18.3	18.3	8.3	8.3
Effective Green, g (s)	0.9	24.2	18.3	18.3	8.3	8.3
Actuated g/C Ratio	0.02	0.57	0.43	0.43	0.20	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	37	2895	2189	681	345	309
v/s Ratio Prot	0.00	c0.28	0.18		c0.07	
v/s Ratio Perm				0.09		0.00
v/c Ratio	0.03	0.50	0.42	0.22	0.34	0.02
Uniform Delay, d1	20.4	5.5	8.4	7.6	14.8	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.1	0.2	0.6	0.0
Delay (s)	20.7	5.6	8.5	7.8	15.4	13.8
Level of Service	C	A	A	A	B	B
Approach Delay (s)		5.6	8.3		15.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	42.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1154	259	285	804	342	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1282	288	317	893	380	52
RTOR Reduction (vph)	0	209	0	0	0	17
Lane Group Flow (vph)	1282	79	317	893	380	35
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	16.0	16.0	12.0	33.0	15.5	15.5
Effective Green, g (s)	16.0	16.0	12.0	33.0	15.5	15.5
Actuated g/C Ratio	0.27	0.27	0.21	0.56	0.26	0.26
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1390	432	363	2868	468	419
v/s Ratio Prot	c0.25		c0.18	0.18	c0.21	
v/s Ratio Perm		0.05				0.02
v/c Ratio	0.92	0.18	0.87	0.31	0.81	0.08
Uniform Delay, d1	20.6	16.2	22.5	6.7	20.1	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.3	0.2	20.0	0.1	10.3	0.1
Delay (s)	31.0	16.5	42.5	6.8	30.4	16.2
Level of Service	C	B	D	A	C	B
Approach Delay (s)	28.3			16.2	28.7	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	25	161	4	7	363	197	10	22	15	308	2	403
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	29	189	5	8	427	232	12	26	18	362	2	474

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	224	667	55	839
Volume Left (vph)	29	8	12	362
Volume Right (vph)	5	232	18	474
Hadj (s)	0.05	-0.17	-0.11	-0.22
Departure Headway (s)	7.4	6.4	8.0	6.3
Degree Utilization, x	0.46	1.0	0.12	1.0
Capacity (veh/h)	483	560	425	561
Control Delay (s)	16.4	121.5	12.2	241.4
Approach Delay (s)	16.4	121.5	12.2	241.4
Approach LOS	C	F	B	F

Intersection Summary			
Delay	161.3		
Level of Service	F		
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	316	285	578	249	550	214
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	333	300	608	262	579	225
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			633		1812	333
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			633		1812	333
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			36		0	68
cM capacity (veh/h)			950		31	709

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	333	300	608	262	579	225
Volume Left	0	0	608	0	579	0
Volume Right	0	300	0	0	0	225
cSH	1700	1700	950	1700	31	709
Volume to Capacity	0.20	0.18	0.64	0.15	18.65	0.32
Queue Length 95th (ft)	0	0	120	0	Err	34
Control Delay (s)	0.0	0.0	15.3	0.0	Err	12.4
Lane LOS			C		F	B
Approach Delay (s)	0.0		10.7		7201.7	
Approach LOS					F	

Intersection Summary			
Average Delay	2514.1		
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Volume (vph)	0	1523	539	0	817	397	580	0	45	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Lane Util. Factor		0.91	1.00		0.91	1.00	0.95	0.95	0.88			
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1681	1681	2787			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1681	1681	2787			
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	1731	612	0	928	451	659	0	51	0	0	0
RTOR Reduction (vph)	0	0	297	0	0	247	0	0	24	0	0	0
Lane Group Flow (vph)	0	1731	315	0	928	204	329	330	27	0	0	0
Turn Type		NA	Perm		NA	Perm	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			2			6			8			
Actuated Green, G (s)		21.8	21.8		21.8	21.8	15.9	15.9	15.9			
Effective Green, g (s)		21.8	21.8		21.8	21.8	15.9	15.9	15.9			
Actuated g/C Ratio		0.45	0.45		0.45	0.45	0.33	0.33	0.33			
Clearance Time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Vehicle Extension (s)		1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Lane Grp Cap (vph)		2295	714		2295	714	553	553	917			
v/s Ratio Prot		c0.34			0.18		0.20	c0.20				
v/s Ratio Perm			0.20			0.13			0.01			
v/c Ratio		0.75	0.44		0.40	0.29	0.59	0.60	0.03			
Uniform Delay, d1		11.0	9.1		8.9	8.3	13.5	13.5	11.0			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		1.3	0.2		0.0	0.1	1.1	1.2	0.0			
Delay (s)		12.3	9.2		8.9	8.4	14.7	14.7	11.0			
Level of Service		B	A		A	A	B	B	B			
Approach Delay (s)		11.5			8.8			14.4			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	10.6
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	↕	↱
Volume (vph)	0	1498	930	0	1314	83	0	0	0	563	0	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)		5085	1583		5085	1583				1681	1601	1504
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)		5085	1583		5085	1583				1681	1601	1504
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1683	1045	0	1476	93	0	0	0	633	0	272
RTOR Reduction (vph)	0	0	475	0	0	42	0	0	0	0	31	31
Lane Group Flow (vph)	0	1683	570	0	1476	51	0	0	0	329	300	214
Turn Type		NA	Perm		NA	Perm				Split	NA	Perm
Protected Phases		2			6					4	4	
Permitted Phases			2			6						4
Actuated Green, G (s)		28.7	28.7		28.7	28.7				14.0	14.0	14.0
Effective Green, g (s)		28.7	28.7		28.7	28.7				14.0	14.0	14.0
Actuated g/C Ratio		0.55	0.55		0.55	0.55				0.27	0.27	0.27
Clearance Time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Vehicle Extension (s)		1.0	1.0		1.0	1.0				1.0	1.0	1.0
Lane Grp Cap (vph)		2774	863		2774	863				447	426	400
v/s Ratio Prot		0.33			0.29					c0.20	0.19	
v/s Ratio Perm			c0.36			0.03						0.14
v/c Ratio		0.61	0.66		0.53	0.06				0.74	0.70	0.54
Uniform Delay, d1		8.1	8.5		7.7	5.6				17.6	17.4	16.5
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.3	1.5		0.1	0.0				5.4	4.3	0.7
Delay (s)		8.4	10.0		7.7	5.6				23.0	21.7	17.2
Level of Service		A	A		A	A				C	C	B
Approach Delay (s)		9.0			7.6			0.0			21.0	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	9.9
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	44	292	226	49	126	145	1245	85	142	1503	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1620		1681	1714	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1620		1681	1714	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	21	49	324	251	54	140	161	1383	94	158	1670	39
RTOR Reduction (vph)	0	188	0	0	0	121	0	0	55	0	0	24
Lane Group Flow (vph)	21	185	0	151	154	19	161	1383	39	158	1670	15
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	13.8	13.8		13.1	13.1	13.1	13.2	40.2	40.2	9.5	36.5	36.5
Effective Green, g (s)	13.8	13.8		13.1	13.1	13.1	13.2	40.2	40.2	9.5	36.5	36.5
Actuated g/C Ratio	0.14	0.14		0.14	0.14	0.14	0.14	0.42	0.42	0.10	0.38	0.38
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	231		227	232	214	241	2116	658	337	1921	598
v/s Ratio Prot	0.01	c0.11		0.09	c0.09		c0.09	c0.27		0.05	c0.33	
v/s Ratio Perm						0.01			0.02			0.01
v/c Ratio	0.08	0.80		0.67	0.66	0.09	0.67	0.65	0.06	0.47	0.87	0.02
Uniform Delay, d1	35.9	40.1		39.7	39.7	36.5	39.6	22.6	16.9	41.2	27.8	18.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	17.9		7.2	7.0	0.2	6.8	0.7	0.0	1.0	4.5	0.0
Delay (s)	36.1	58.0		46.8	46.6	36.7	46.5	23.4	16.9	42.2	32.3	18.9
Level of Service	D	E		D	D	D	D	C	B	D	C	B
Approach Delay (s)		56.8			43.6			25.3			32.9	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	440	276	688	871	58	240	802	387	26	743	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	83	489	307	764	968	64	267	891	430	29	826	54
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	83	489	307	764	968	64	267	891	430	29	826	54
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.4	17.4	99.6	24.4	36.4	99.6	9.9	35.5	99.6	2.3	27.9	99.6
Effective Green, g (s)	5.4	17.4	99.6	24.4	36.4	99.6	9.9	35.5	99.6	2.3	27.9	99.6
Actuated g/C Ratio	0.05	0.17	1.00	0.24	0.37	1.00	0.10	0.36	1.00	0.02	0.28	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	95	618	1583	841	1293	1583	341	1261	1583	79	991	1583
v/s Ratio Prot	0.05	0.14		c0.22	c0.27		c0.08	0.25		0.01	c0.23	
v/s Ratio Perm			0.19			0.04			0.27			0.03
v/c Ratio	0.87	0.79	0.19	0.91	0.75	0.04	0.78	0.71	0.27	0.37	0.83	0.03
Uniform Delay, d1	46.8	39.4	0.0	36.5	27.6	0.0	43.8	27.6	0.0	47.9	33.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.5	6.9	0.3	13.4	2.4	0.0	11.1	1.8	0.4	2.9	6.1	0.0
Delay (s)	100.2	46.2	0.3	50.0	30.0	0.0	54.9	29.4	0.4	50.8	39.8	0.0
Level of Service	F	D	A	D	C	A	D	C	A	D	D	A
Approach Delay (s)		35.3			37.4			25.8			37.8	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

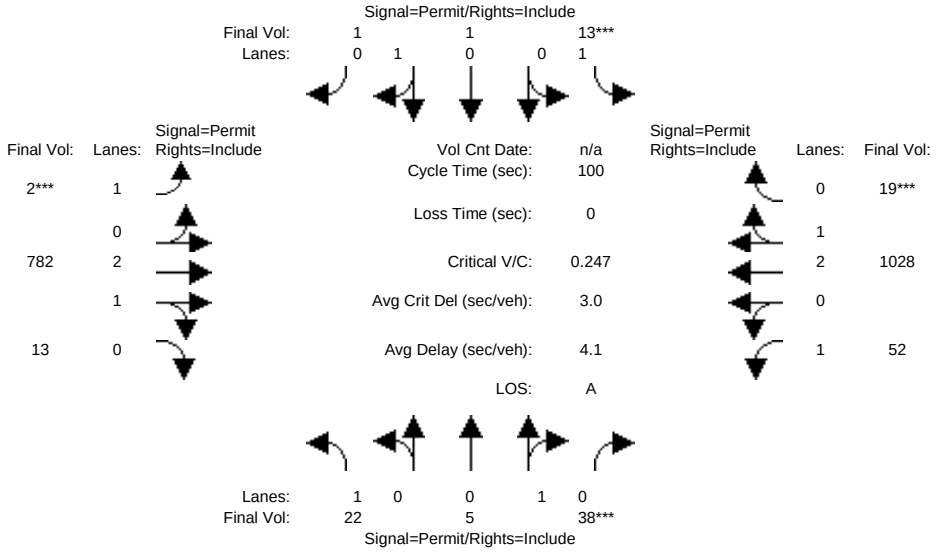
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	324	556	17	298	223	166	29	1127	440	113	478	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	360	618	19	331	248	184	32	1252	489	126	531	66
RTOR Reduction (vph)	0	0	15	0	0	137	0	0	168	0	0	36
Lane Group Flow (vph)	360	618	4	331	248	47	32	1252	321	126	531	30
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.7	26.9	26.9	13.7	25.9	25.9	4.6	50.1	50.1	10.6	56.1	56.1
Effective Green, g (s)	14.7	26.9	26.9	13.7	25.9	25.9	4.6	50.1	50.1	10.6	56.1	56.1
Actuated g/C Ratio	0.12	0.22	0.22	0.11	0.21	0.21	0.04	0.41	0.41	0.09	0.46	0.46
Clearance Time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	410	775	346	382	746	333	66	1443	645	152	1616	723
v/s Ratio Prot	c0.10	c0.17		0.10	0.07		0.02	c0.35		c0.07	0.15	
v/s Ratio Perm			0.00			0.03			0.20			0.02
v/c Ratio	0.88	0.80	0.01	0.87	0.33	0.14	0.48	0.87	0.50	0.83	0.33	0.04
Uniform Delay, d1	53.2	45.4	37.5	53.7	41.1	39.4	57.9	33.3	27.0	55.2	21.3	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.2	5.7	0.0	17.7	0.3	0.2	2.0	5.8	0.6	28.4	0.1	0.0
Delay (s)	71.4	51.1	37.6	71.3	41.4	39.6	60.0	39.1	27.6	83.6	21.4	18.5
Level of Service	E	D	D	E	D	D	E	D	C	F	C	B
Approach Delay (s)		58.2			53.9			36.3			32.0	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	122.8	Sum of lost time (s)	21.5
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #301: Locust Rd and Baseline Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	22	5	38	13	1	1	2	782	13	52	1028	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	5	38	13	1	1	2	782	13	52	1028	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	5	38	13	1	1	2	782	13	52	1028	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	5	38	13	1	1	2	782	13	52	1028	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	5	38	13	1	1	2	782	13	52	1028	19
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.12	0.88	1.00	0.50	0.50	1.00	2.95	0.05	1.00	2.95	0.05
Final Sat.:	1650	192	1458	1650	825	825	1650	4869	81	1650	4860	90
Capacity Analysis Module:												
Vol/Sat:	0.01	0.03	0.03	0.01	0.00	0.00	0.00	0.16	0.16	0.03	0.21	0.21
Crit Volume:			43	13			2					349
Crit Moves:			****	****			****					****

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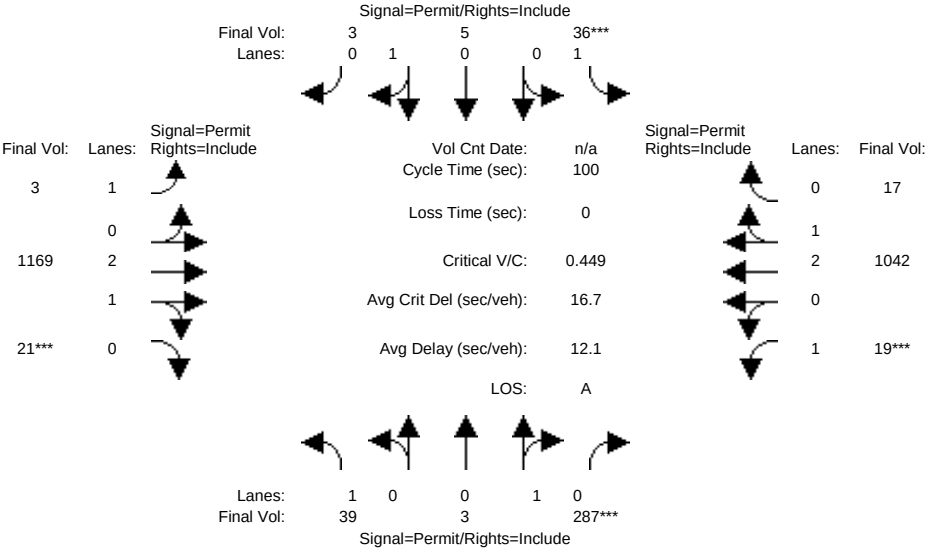
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #301: Locust Rd and Baseline Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	39	3	287	36	5	3	3	1169	21	19	1042	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	3	287	36	5	3	3	1169	21	19	1042	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	3	287	36	5	3	3	1169	21	19	1042	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	3	287	36	5	3	3	1169	21	19	1042	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	3	287	36	5	3	3	1169	21	19	1042	17
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.01	0.99	1.00	0.62	0.38	1.00	2.95	0.05	1.00	2.95	0.05
Final Sat.:	1650	17	1633	1650	1031	619	1650	4863	87	1650	4871	79
Capacity Analysis Module:												
Vol/Sat:	0.02	0.18	0.18	0.02	0.00	0.00	0.00	0.24	0.24	0.01	0.21	0.21
Crit Volume:			290	36					397	19		
Crit Moves:			****	****					****	****		

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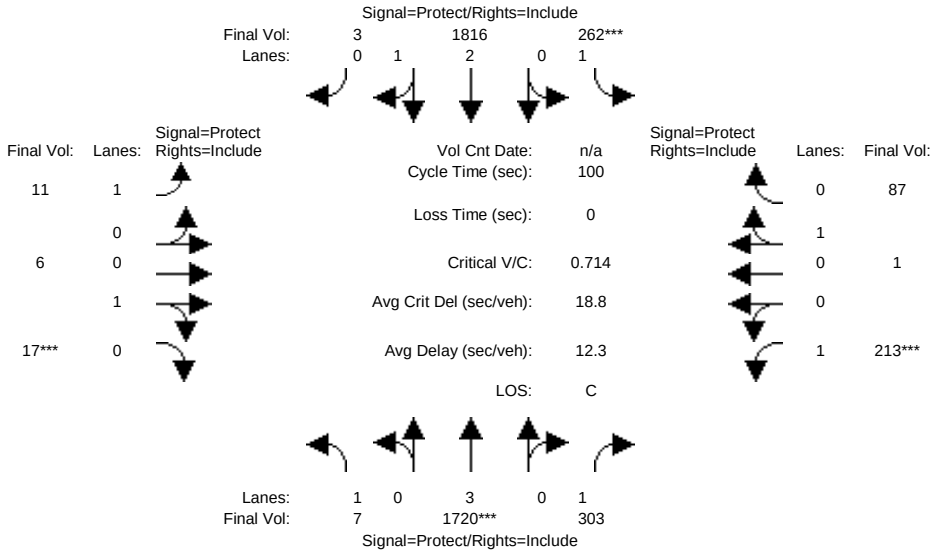
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #305: Watt Ave/PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	7	1720	303	262	1816	3	11	6	17	213	1	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	1720	303	262	1816	3	11	6	17	213	1	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	1720	303	262	1816	3	11	6	17	213	1	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	1720	303	262	1816	3	11	6	17	213	1	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	1720	303	262	1816	3	11	6	17	213	1	87
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.99	0.01	1.00	0.26	0.74	1.00	0.01	0.99
Final Sat.:	1500	4500	1500	1500	4493	7	1500	391	1109	1500	17	1483
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.20	0.17	0.40	0.40	0.01	0.02	0.02	0.14	0.06	0.06
Crit Volume:		573			262				23	213		
Crit Moves:		****			****				****	****		

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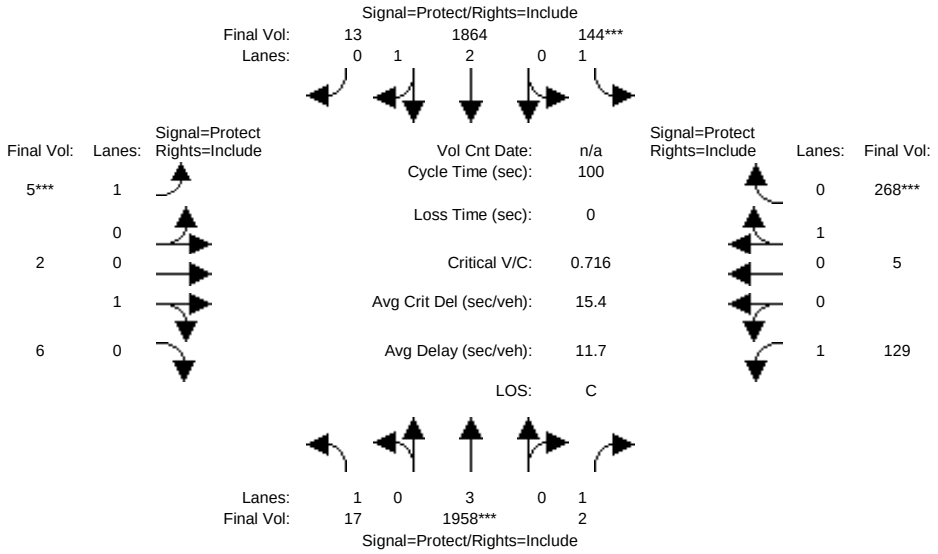
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #305: Watt Ave/PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	17	1958	2	144	1864	13	5	2	6	129	5	268
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	1958	2	144	1864	13	5	2	6	129	5	268
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	1958	2	144	1864	13	5	2	6	129	5	268
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	1958	2	144	1864	13	5	2	6	129	5	268
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	1958	2	144	1864	13	5	2	6	129	5	268
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.98	0.02	1.00	0.25	0.75	1.00	0.02	0.98
Final Sat.:	1500	4500	1500	1500	4469	31	1500	375	1125	1500	27	1473
Capacity Analysis Module:												
Vol/Sat:	0.01	0.44	0.00	0.10	0.42	0.42	0.00	0.01	0.01	0.09	0.18	0.18
Crit Volume:		653			144			5			273	
Crit Moves:		****			****			****			****	

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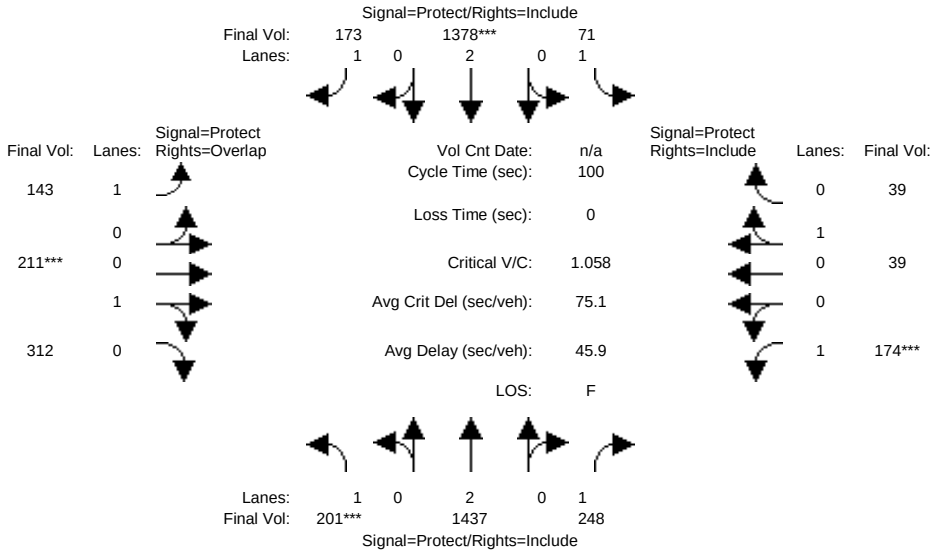
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	201	1437	248	71	1378	173	143	211	312	174	39	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	1437	248	71	1378	173	143	211	312	174	39	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	201	1437	248	71	1378	173	143	211	312	174	39	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	1437	248	71	1378	173	143	211	312	174	39	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	1437	248	71	1378	173	143	211	312	174	39	39
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.40	0.60	1.00	0.50	0.50
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	605	895	1500	750	750
Capacity Analysis Module:												
Vol/Sat:	0.13	0.48	0.17	0.05	0.46	0.12	0.10	0.35	0.35	0.12	0.05	0.05
Crit Volume:	201				689			523			174	
Crit Moves:	****				****			****			****	

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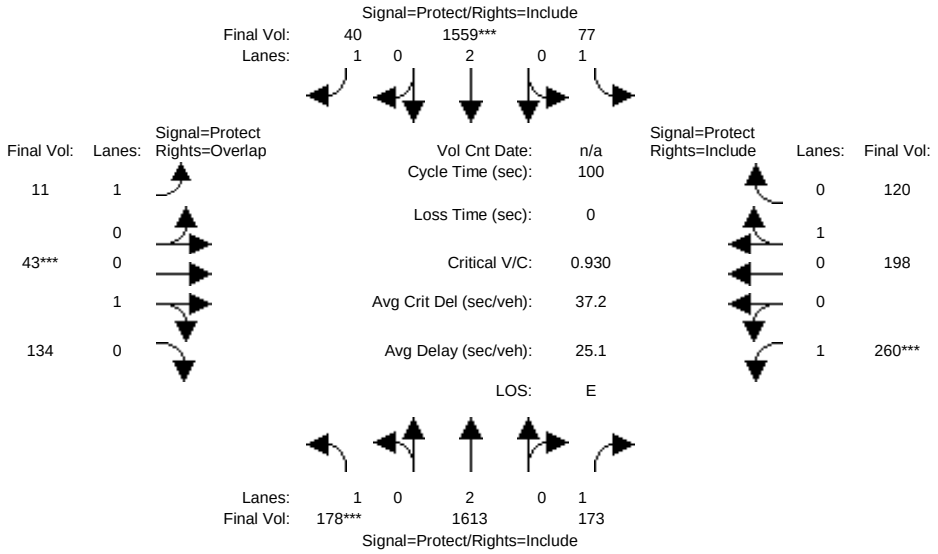
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	178	1613	173	77	1559	40	11	43	134	260	198	120
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	1613	173	77	1559	40	11	43	134	260	198	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	178	1613	173	77	1559	40	11	43	134	260	198	120
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	1613	173	77	1559	40	11	43	134	260	198	120
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	1613	173	77	1559	40	11	43	134	260	198	120
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.24	0.76	1.00	0.62	0.38
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	364	1136	1500	934	566
Capacity Analysis Module:												
Vol/Sat:	0.12	0.54	0.12	0.05	0.52	0.03	0.01	0.12	0.12	0.17	0.21	0.21
Crit Volume:	178			780			177			260		
Crit Moves:	****			****			****			****		

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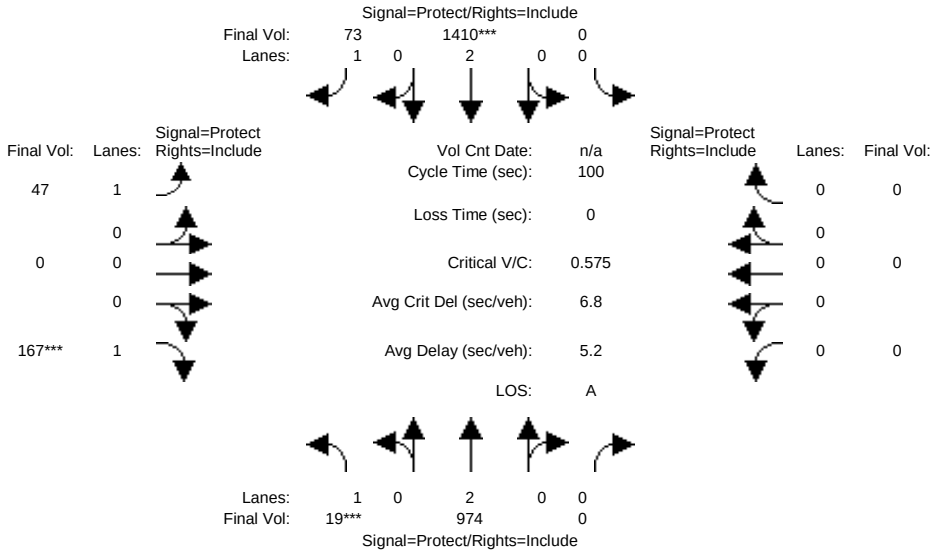
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #308: Fiddyment Rd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	19	974	0	0	1410	73	47	0	167	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	974	0	0	1410	73	47	0	167	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	974	0	0	1410	73	47	0	167	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	974	0	0	1410	73	47	0	167	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	974	0	0	1410	73	47	0	167	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	3100	0	0	3100	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.31	0.00	0.00	0.45	0.05	0.03	0.00	0.11	0.00	0.00	0.00
Crit Volume:	19				705				167	0		
Crit Moves:	****				****				****			

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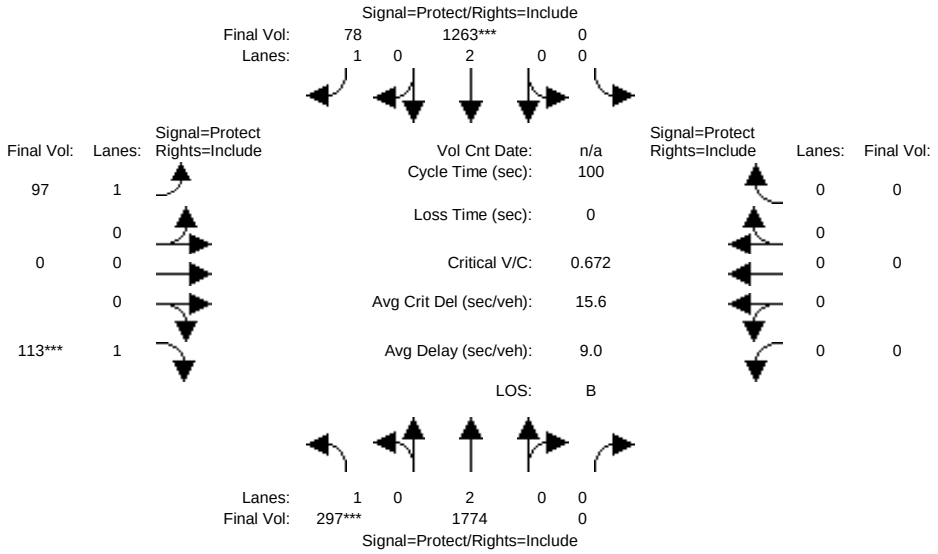
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #308: Fiddyment Rd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	297	1774	0	0	1263	78	97	0	113	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	297	1774	0	0	1263	78	97	0	113	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	297	1774	0	0	1263	78	97	0	113	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	297	1774	0	0	1263	78	97	0	113	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	297	1774	0	0	1263	78	97	0	113	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	3100	0	0	3100	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.19	0.57	0.00	0.00	0.41	0.05	0.06	0.00	0.07	0.00	0.00	0.00
Crit Volume:	297				632				113	0		
Crit Moves:	****				****				****			

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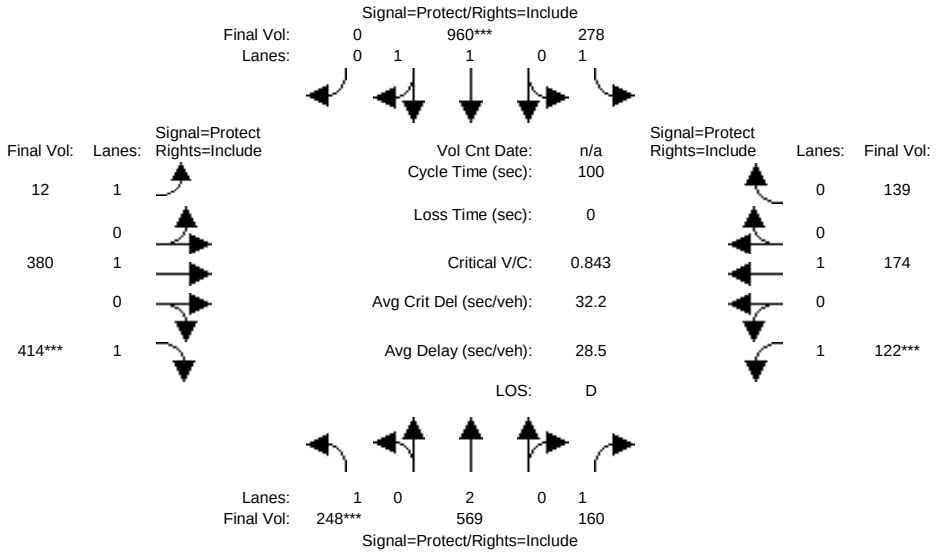
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #309: Fiddyment Rd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	248	569	160	278	960	0	12	380	414	122	174	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	248	569	160	278	960	0	12	380	414	122	174	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	248	569	160	278	960	0	12	380	414	122	174	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	248	569	160	278	960	0	12	380	414	122	174	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	248	569	160	278	960	0	12	380	414	122	174	139
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	0.00	1.00	1.00	1.00	1.00	0.56	0.44
Final Sat.:	1500	3000	1500	1500	3000	0	1500	1500	1500	1500	834	666
Capacity Analysis Module:												
Vol/Sat:	0.17	0.19	0.11	0.19	0.32	0.00	0.01	0.25	0.28	0.08	0.21	0.21
Crit Volume:	248				480				414	122		
Crit Moves:	****				****				****	****		

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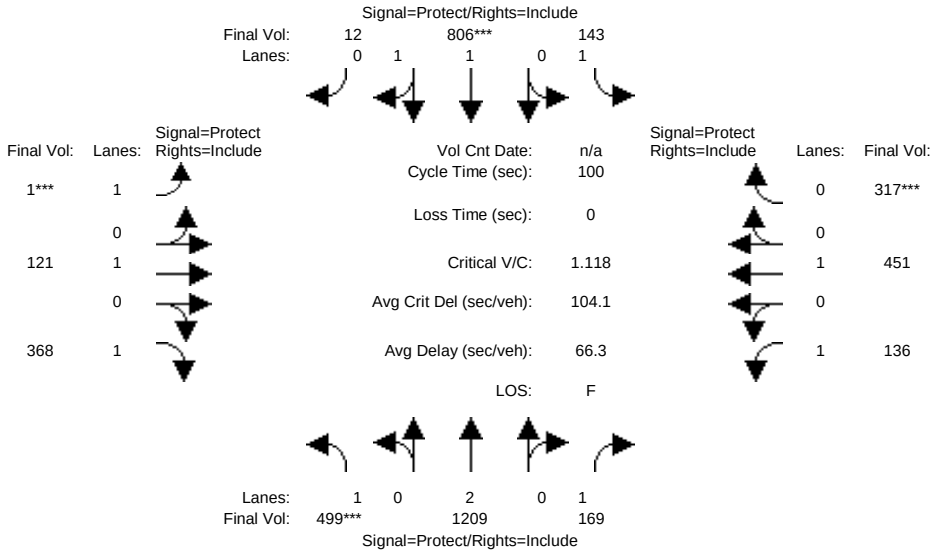
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #309: Fiddyment Rd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	499	1209	169	143	806	12	1	121	368	136	451	317
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	499	1209	169	143	806	12	1	121	368	136	451	317
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	499	1209	169	143	806	12	1	121	368	136	451	317
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	499	1209	169	143	806	12	1	121	368	136	451	317
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	499	1209	169	143	806	12	1	121	368	136	451	317
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.97	0.03	1.00	1.00	1.00	1.00	0.59	0.41
Final Sat.:	1500	3000	1500	1500	2956	44	1500	1500	1500	1500	881	619
Capacity Analysis Module:												
Vol/Sat:	0.33	0.40	0.11	0.10	0.27	0.27	0.00	0.08	0.25	0.09	0.51	0.51
Crit Volume:	499				409			1				768
Crit Moves:	****				****			****				****

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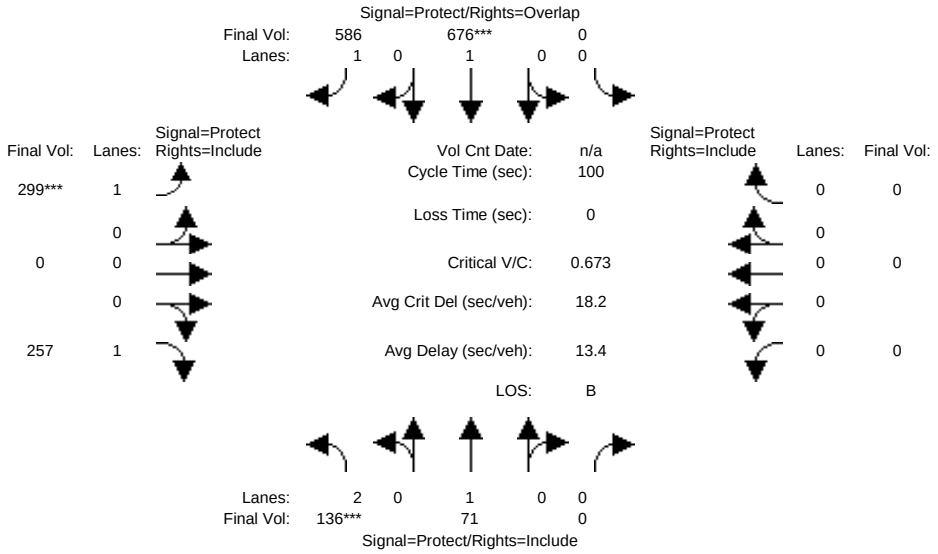
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	136	71	0	0	676	586	299	0	257	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	136	71	0	0	676	586	299	0	257	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	136	71	0	0	676	586	299	0	257	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	136	71	0	0	676	586	299	0	257	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	136	71	0	0	676	586	299	0	257	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.05	0.00	0.00	0.44	0.38	0.19	0.00	0.17	0.00	0.00	0.00
Crit Volume:	68				676		299				0	
Crit Moves:	****				****		****					

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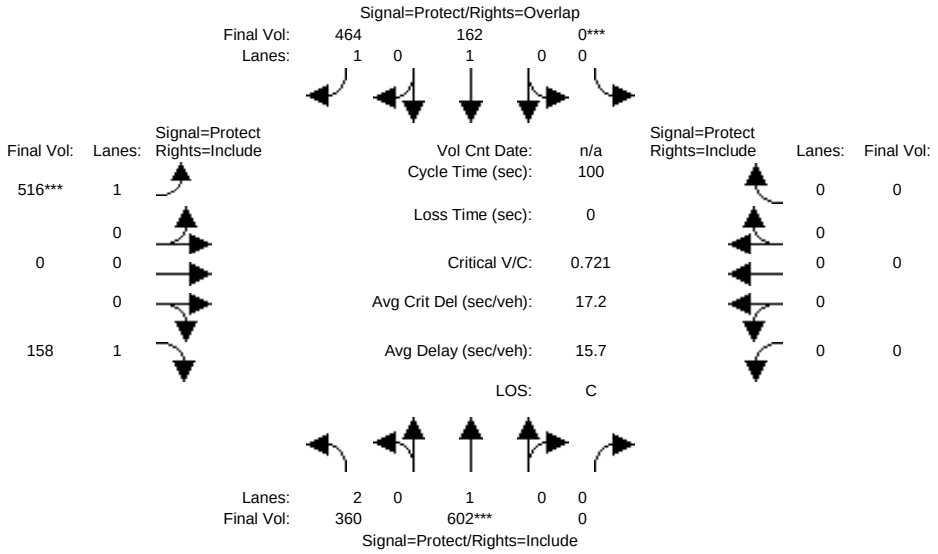
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	360	602	0	0	162	464	516	0	158	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	360	602	0	0	162	464	516	0	158	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	360	602	0	0	162	464	516	0	158	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	360	602	0	0	162	464	516	0	158	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	360	602	0	0	162	464	516	0	158	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.39	0.00	0.00	0.10	0.30	0.33	0.00	0.10	0.00	0.00	0.00
Crit Volume:		602			0			516			0	
Crit Moves:		****			****			****				

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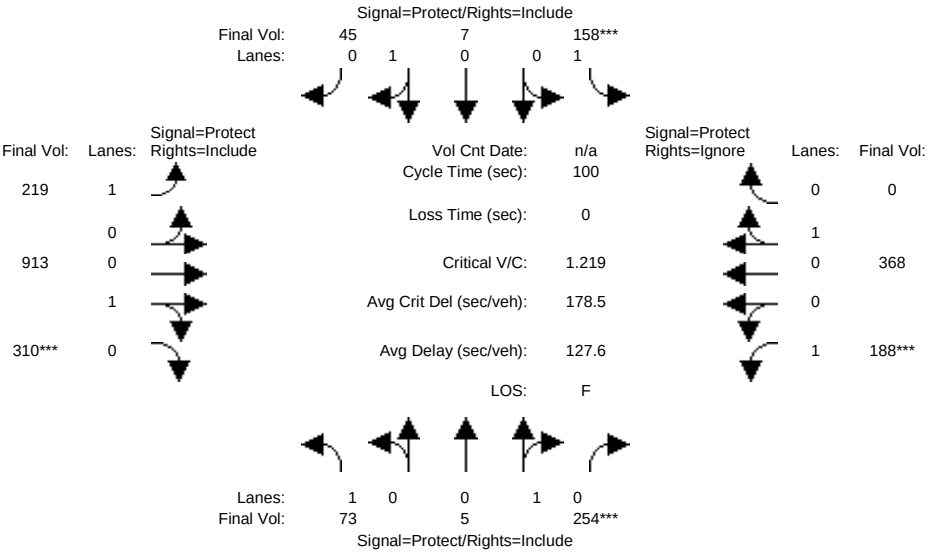
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	73	5	254	158	7	45	219	913	310	188	368	174
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	5	254	158	7	45	219	913	310	188	368	174
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	73	5	254	158	7	45	219	913	310	188	368	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	73	5	254	158	7	45	219	913	310	188	368	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	73	5	254	158	7	45	219	913	310	188	368	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	1.00	0.13	0.87	1.00	0.75	0.25	1.00	1.00	0.00
Final Sat.:	1500	29	1471	1500	202	1298	1500	1120	380	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.17	0.17	0.11	0.03	0.03	0.15	0.82	0.82	0.13	0.25	0.00
Crit Volume:			259	158					1223	188		
Crit Moves:			****	****					****	****		

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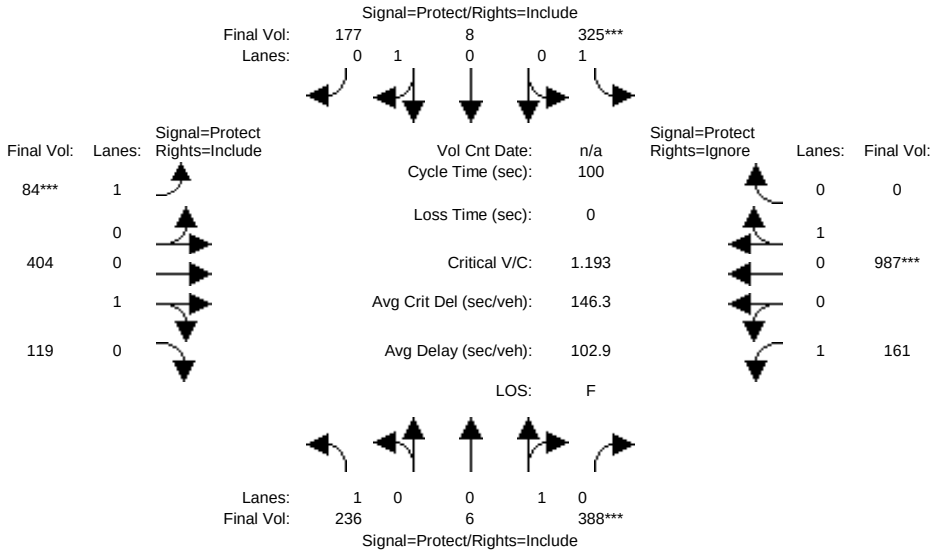
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	236	6	388	325	8	177	84	404	119	161	987	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	236	6	388	325	8	177	84	404	119	161	987	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	236	6	388	325	8	177	84	404	119	161	987	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	236	6	388	325	8	177	84	404	119	161	987	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	236	6	388	325	8	177	84	404	119	161	987	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	1.00	0.04	0.96	1.00	0.77	0.23	1.00	1.00	0.00
Final Sat.:	1500	23	1477	1500	65	1435	1500	1159	341	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.16	0.26	0.26	0.22	0.12	0.12	0.06	0.35	0.35	0.11	0.66	0.00
Crit Volume:			394	325			84				987	
Crit Moves:			****	****			****				****	

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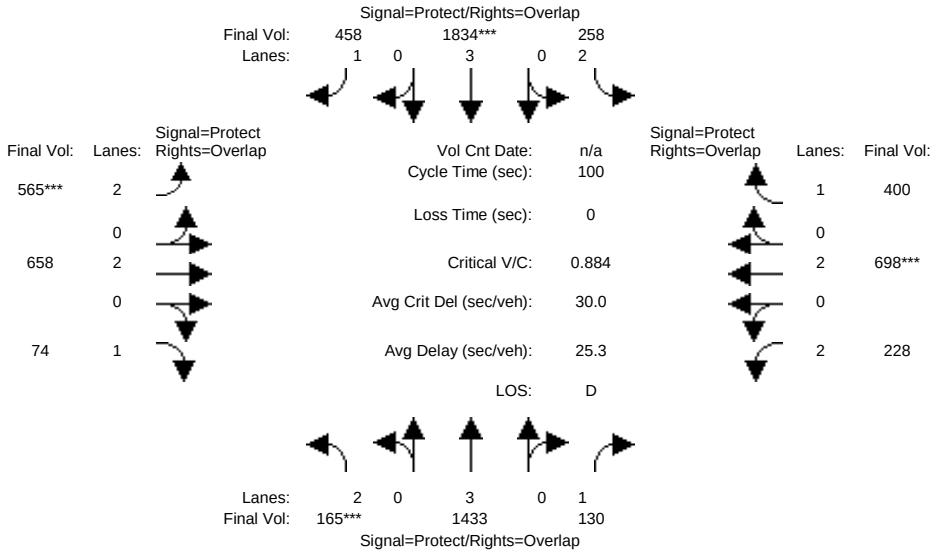
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	165	1433	130	258	1834	458	565	658	74	228	698	400
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1433	130	258	1834	458	565	658	74	228	698	400
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	165	1433	130	258	1834	458	565	658	74	228	698	400
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1433	130	258	1834	458	565	658	74	228	698	400
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	165	1433	130	258	1834	458	565	658	74	228	698	400
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.32	0.09	0.09	0.41	0.31	0.19	0.22	0.05	0.08	0.23	0.27
Crit Volume:	83				611		283				349	
Crit Moves:	****				****		****				****	

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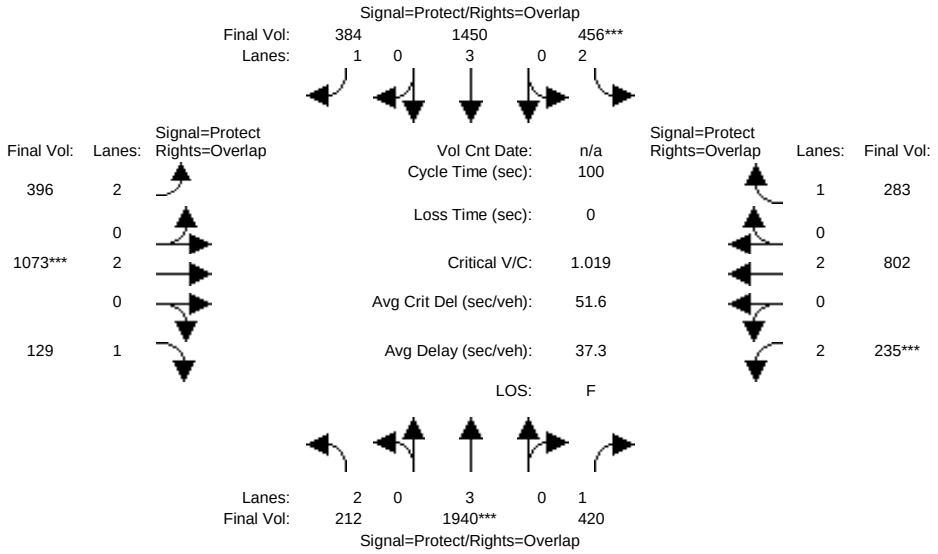
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	212	1940	420	456	1450	384	396	1073	129	235	802	283
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	212	1940	420	456	1450	384	396	1073	129	235	802	283
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	212	1940	420	456	1450	384	396	1073	129	235	802	283
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	212	1940	420	456	1450	384	396	1073	129	235	802	283
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	212	1940	420	456	1450	384	396	1073	129	235	802	283
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.07	0.43	0.28	0.15	0.32	0.26	0.13	0.36	0.09	0.08	0.27	0.19
Crit Volume:		647			228			537			118	
Crit Moves:		****			****			****			****	

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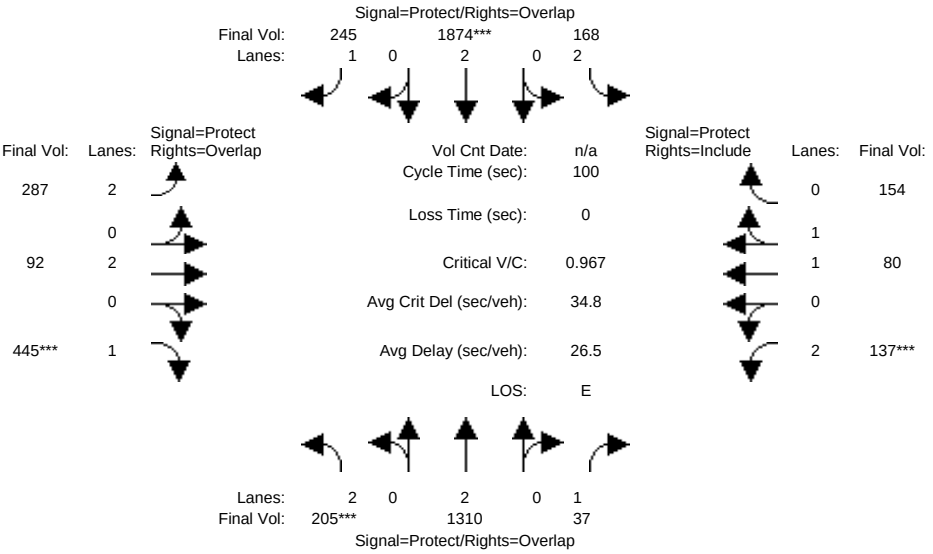
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	205	1310	37	168	1874	245	287	92	445	137	80	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	1310	37	168	1874	245	287	92	445	137	80	154
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	205	1310	37	168	1874	245	287	92	445	137	80	154
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	205	1310	37	168	1874	245	287	92	445	137	80	154
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	205	1310	37	168	1874	245	287	92	445	137	80	154
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	1500	1500
Capacity Analysis Module:												
Vol/Sat:	0.07	0.44	0.02	0.06	0.62	0.16	0.10	0.03	0.30	0.05	0.05	0.10
Crit Volume:	0				937				445	69		
Crit Moves:	****				****				****	****		

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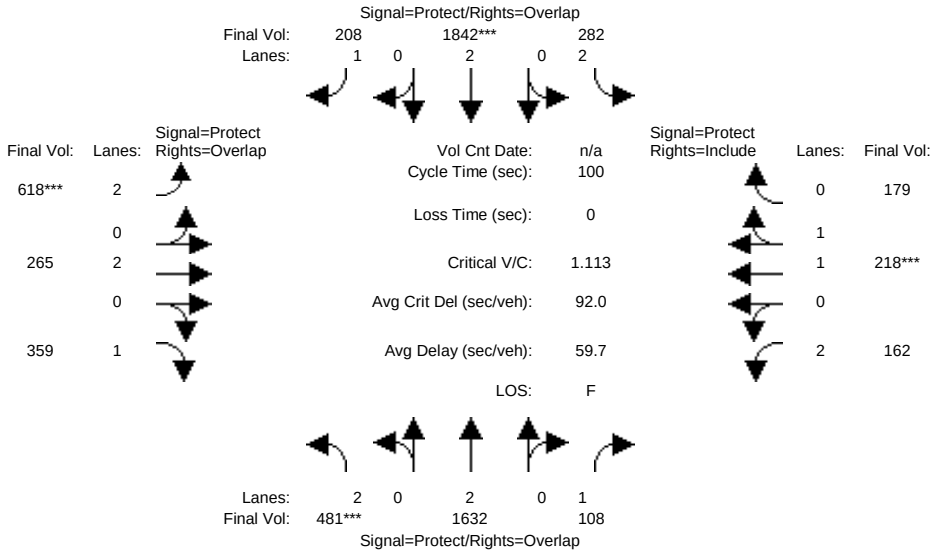
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	481	1632	108	282	1842	208	618	265	359	162	218	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	481	1632	108	282	1842	208	618	265	359	162	218	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	481	1632	108	282	1842	208	618	265	359	162	218	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	481	1632	108	282	1842	208	618	265	359	162	218	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	481	1632	108	282	1842	208	618	265	359	162	218	179
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.10	0.90
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	1647	1353
Capacity Analysis Module:												
Vol/Sat:	0.16	0.54	0.07	0.09	0.61	0.14	0.21	0.09	0.24	0.05	0.13	0.13
Crit Volume:	240				921		309				199	
Crit Moves:	****				****		****				****	

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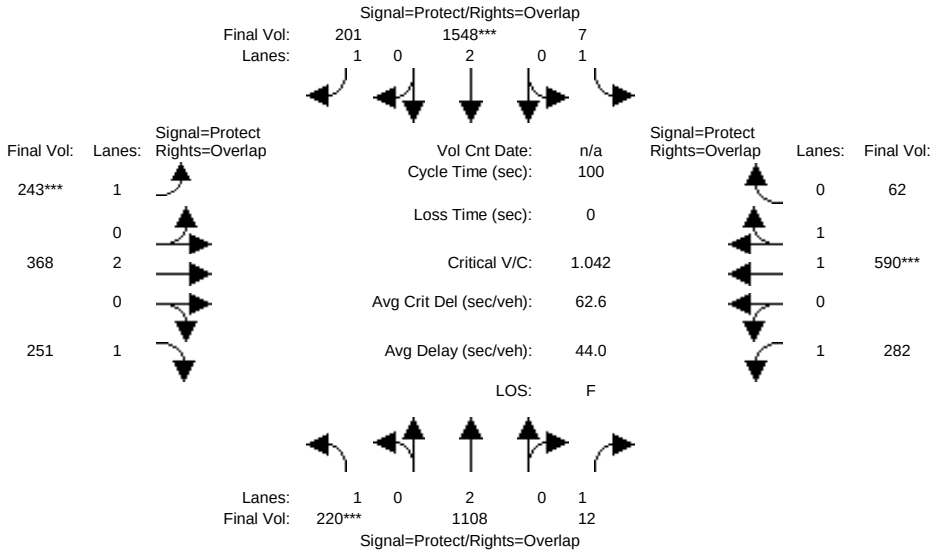
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	220	1108	12	7	1548	201	243	368	251	282	590	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	220	1108	12	7	1548	201	243	368	251	282	590	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	220	1108	12	7	1548	201	243	368	251	282	590	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	220	1108	12	7	1548	201	243	368	251	282	590	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	220	1108	12	7	1548	201	243	368	251	282	590	62
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.81	0.19
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	2715	285
Capacity Analysis Module:												
Vol/Sat:	0.15	0.37	0.01	0.00	0.52	0.13	0.16	0.12	0.17	0.19	0.22	0.22
Crit Volume:	220				774		243				326	
Crit Moves:	****				****		****				****	

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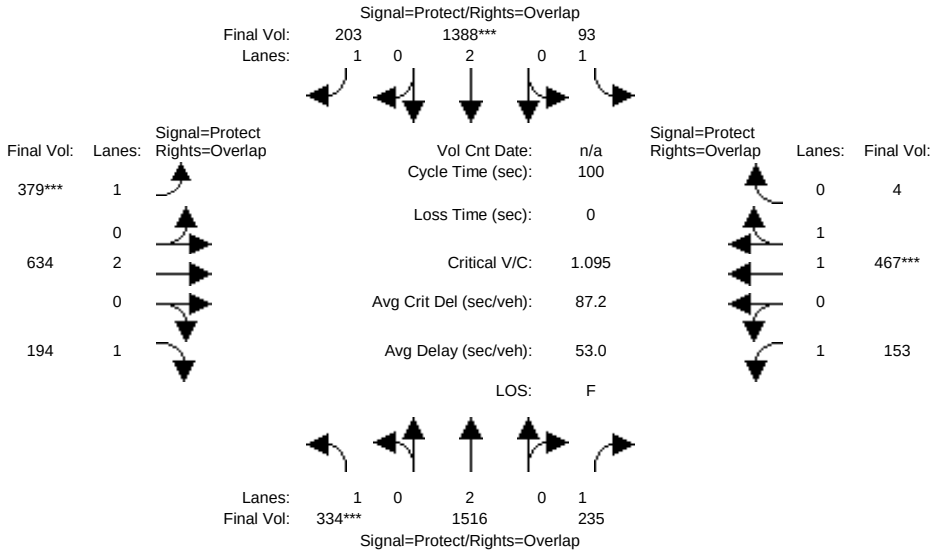
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	334	1516	235	93	1388	203	379	634	194	153	467	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	334	1516	235	93	1388	203	379	634	194	153	467	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	334	1516	235	93	1388	203	379	634	194	153	467	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	334	1516	235	93	1388	203	379	634	194	153	467	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	334	1516	235	93	1388	203	379	634	194	153	467	4
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	2975	25
Capacity Analysis Module:												
Vol/Sat:	0.22	0.51	0.16	0.06	0.46	0.14	0.25	0.21	0.13	0.10	0.16	0.16
Crit Volume:	334				694		379				236	
Crit Moves:	****				****		****				****	

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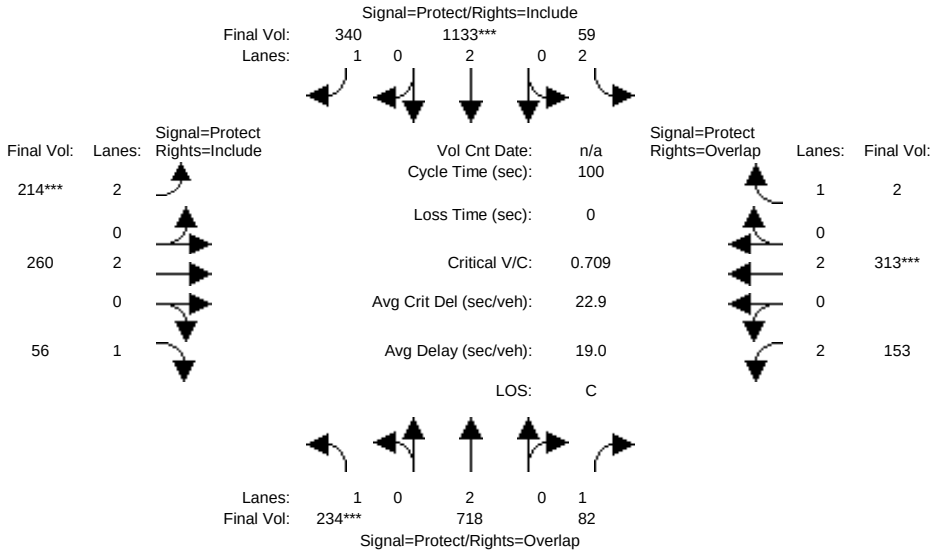
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	234	718	82	59	1133	340	214	260	56	153	313	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	234	718	82	59	1133	340	214	260	56	153	313	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	234	718	82	59	1133	340	214	260	56	153	313	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	234	718	82	59	1133	340	214	260	56	153	313	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	234	718	82	59	1133	340	214	260	56	153	313	2
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.16	0.24	0.05	0.02	0.38	0.23	0.07	0.09	0.04	0.05	0.10	0.00
Crit Volume:	234				567		107				157	
Crit Moves:	****				****		****				****	

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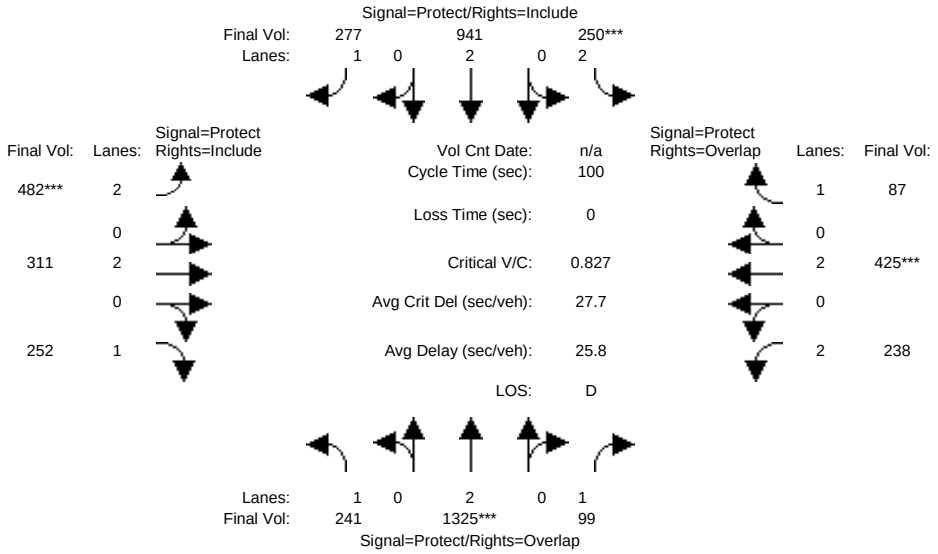
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	241	1325	99	250	941	277	482	311	252	238	425	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	241	1325	99	250	941	277	482	311	252	238	425	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	241	1325	99	250	941	277	482	311	252	238	425	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	241	1325	99	250	941	277	482	311	252	238	425	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	241	1325	99	250	941	277	482	311	252	238	425	87
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.16	0.44	0.07	0.08	0.31	0.18	0.16	0.10	0.17	0.08	0.14	0.06
Crit Volume:		663			125			241			213	
Crit Moves:		****			****			****			****	

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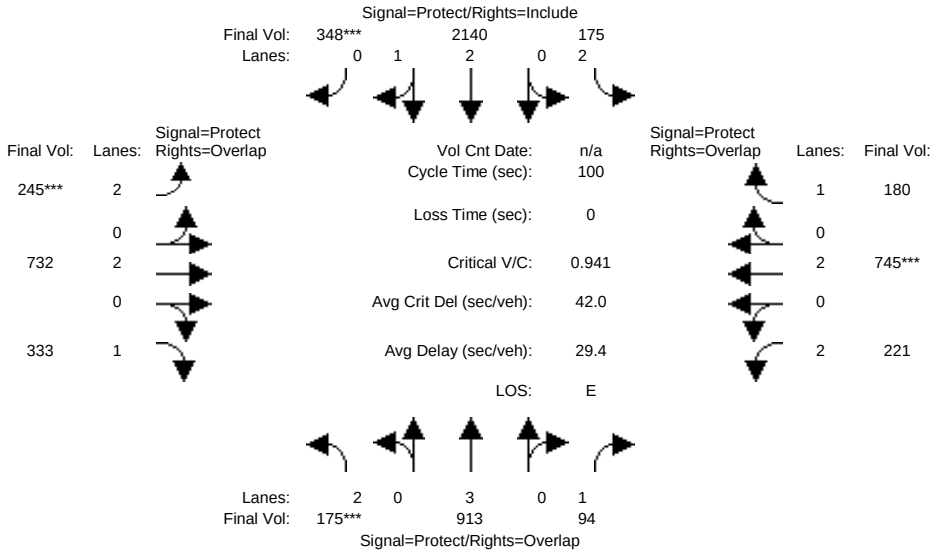
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	175	913	94	175	2140	348	245	732	333	221	745	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	175	913	94	175	2140	348	245	732	333	221	745	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	175	913	94	175	2140	348	245	732	333	221	745	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	175	913	94	175	2140	348	245	732	333	221	745	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	175	913	94	175	2140	348	245	732	333	221	745	180
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.58	0.42	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3871	629	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.06	0.06	0.55	0.55	0.08	0.24	0.22	0.07	0.25	0.12
Crit Volume:	88					829	123				373	
Crit Moves:	****					****	****				****	

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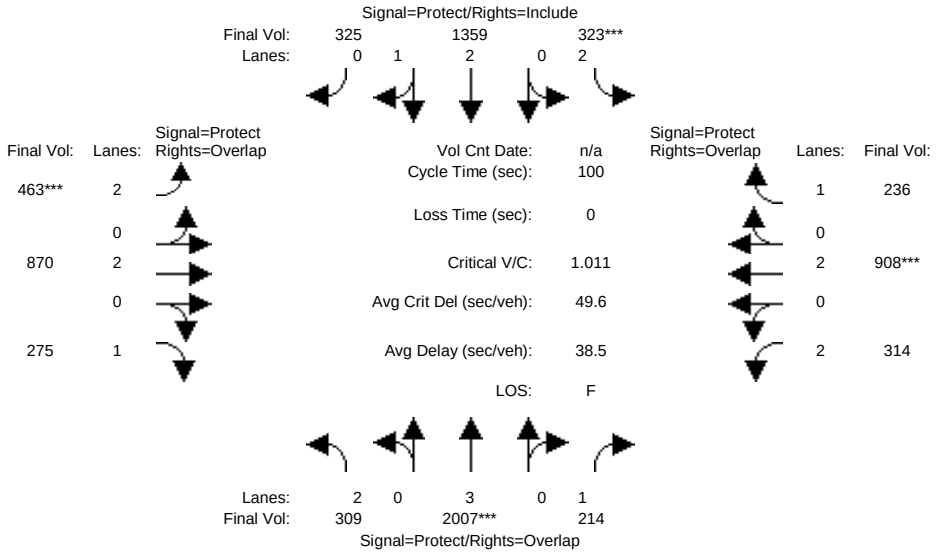
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	309	2007	214	323	1359	325	463	870	275	314	908	236
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	309	2007	214	323	1359	325	463	870	275	314	908	236
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	309	2007	214	323	1359	325	463	870	275	314	908	236
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	309	2007	214	323	1359	325	463	870	275	314	908	236
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	309	2007	214	323	1359	325	463	870	275	314	908	236
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.42	0.58	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3632	868	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.10	0.45	0.14	0.11	0.37	0.37	0.15	0.29	0.18	0.10	0.30	0.16
Crit Volume:		669			162			231			454	
Crit Moves:		****			****			****			****	

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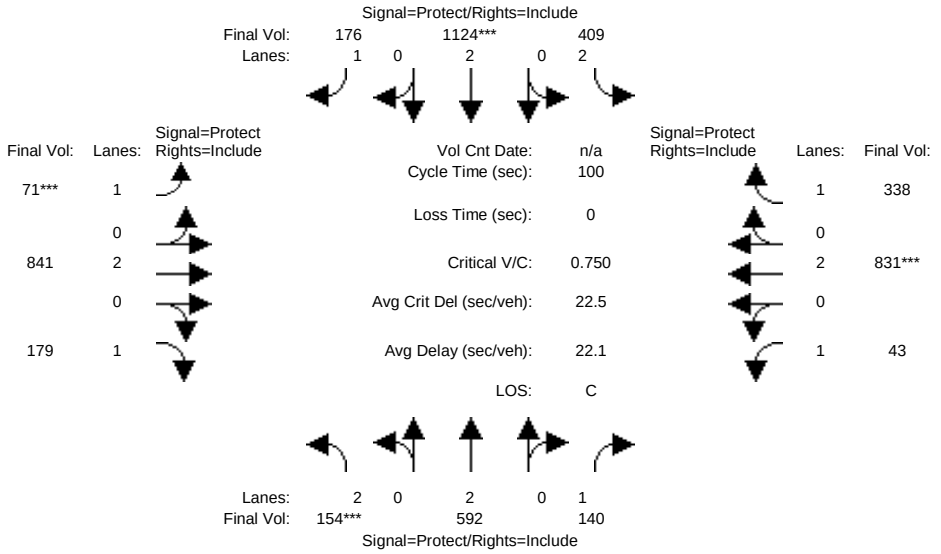
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project AM Peak Hour

Intersection #320: Walerga and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	154	592	140	409	1124	176	71	841	179	43	831	338
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	154	592	140	409	1124	176	71	841	179	43	831	338
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	154	592	140	409	1124	176	71	841	179	43	831	338
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	154	592	140	409	1124	176	71	841	179	43	831	338
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	154	592	140	409	1124	176	71	841	179	43	831	338
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.05	0.20	0.09	0.14	0.37	0.12	0.05	0.28	0.12	0.03	0.28	0.23
Crit Volume:	77				562		71				416	
Crit Moves:	****				****		****				****	

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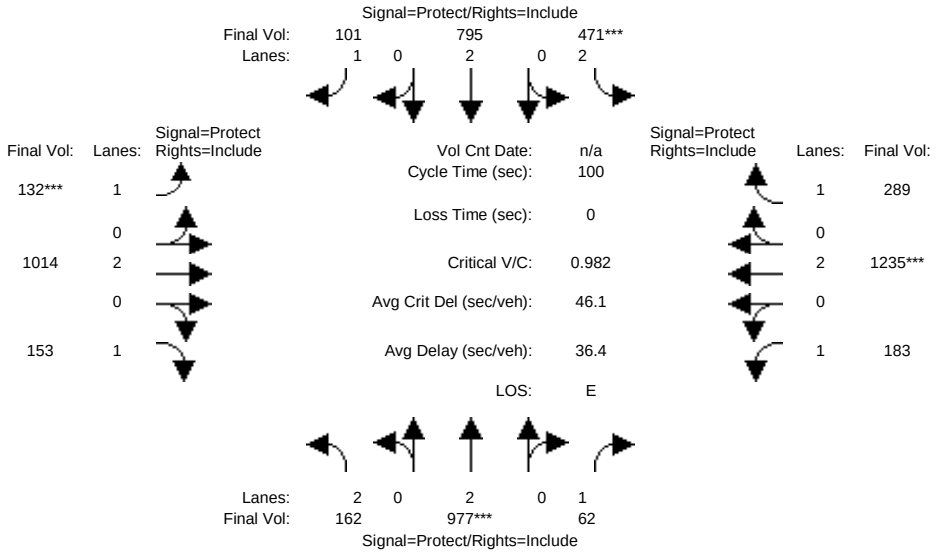
City of Roseville
Cumulative No Project
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative No Project PM Peak Hour

Intersection #320: Walerga and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	162	977	62	471	795	101	132	1014	153	183	1235	289
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	162	977	62	471	795	101	132	1014	153	183	1235	289
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	162	977	62	471	795	101	132	1014	153	183	1235	289
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	977	62	471	795	101	132	1014	153	183	1235	289
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	162	977	62	471	795	101	132	1014	153	183	1235	289
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.05	0.33	0.04	0.16	0.27	0.07	0.09	0.34	0.10	0.12	0.41	0.19
Crit Volume:		489			236			132			618	
Crit Moves:		****			****			****			****	

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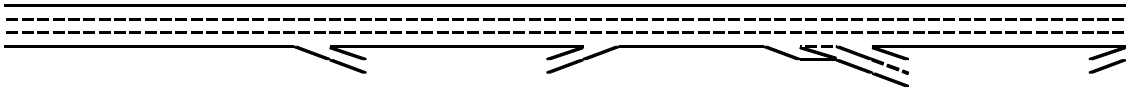
FREEWAY FACILITIES

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 Cumulative No Project Conditions
Timee Period: 2035 AM Peak Hour

Location	1	2	3	4	5	6	



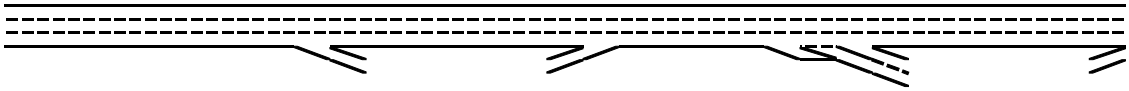
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Define Freeway Segment							
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	
Length (ft)	1,780	1,500	2,960	1,500	1,500	1,250	
Accel Length				270			
Decel Length		120			1,500		
Mainline Volume	6,370	6,370	5,620	5,620	6,140	5,120	
On Ramp Volume				520			
Off Ramp Volume		750			1,020		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (GP)							
GP Volume (vph)	6,370	6,370	5,620	6,140	6,140	5,120	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	3	3	3	3	3	3	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	6,856	6,856	6,049	6,609	6,609	5,511	
GP Flow (pcphpl)	2,285	2,285	2,016	2,203	2,203	1,837	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.97	0.97	0.86	0.94	0.94	0.78	
Speed (mph)	53.9	53.9	59.6	55.9	55.9	62.3	
Density (pcphpl)	42.4	42.4	33.8	39.4	39.4	29.5	
LOS	E	E	D	E	E	D	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		6,856		6,056	6,609		
GP_{IN} Cap (pcph)		7,050		7,050	7,050		
GP_{IN} v/c ratio		0.97		0.86	0.94		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		6,083		6,609	5,519		
GP_{OUT} Cap (pcph)		7,050		7,050	7,050		
GP_{OUT} v/c ratio		0.86		0.94	0.78		

Location	1	2	3	4	5	6	



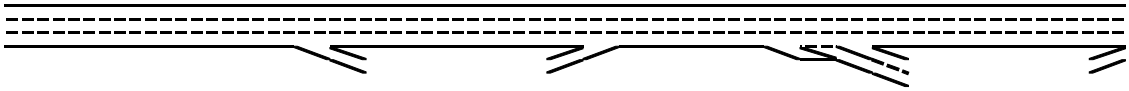
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)				520			
PHF				0.95			
Total Lanes				1			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				2.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.990			
f_P				1.00			
On Flow (pcph)				553			
On Flow (pcphpl)				553			
Calculate On Ramp Roadway Operations							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.26			

Location	1	2	3	4	5	6	



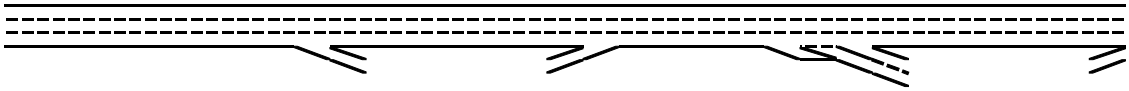
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Calculate Off Ramp Flow Rate							
Off Volume (vph)		750			1,020		
PHF		0.98			0.95		
Total Lanes		1			2		
Terrain		Level			Level		
Grade %		0.0%			0.0%		
Grade Length (mi)		0.00			0.00		
Truck & Bus %		2.0%			3.0%		
RV %		0.0%			0.0%		
E_T		1.5			1.5		
E_R		1.2			1.2		
f_{HV}		0.990			0.985		
f_P		1.00			1.00		
Off Flow (pcph)		773			1,090		
Off Flow (pcphpl)		773			545		
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right			Right		
Off Ramp Speed		45			45		
Off Ramp Cap (pcph)		2,100			4,200		
Off Ramp v/c ratio		0.37			0.26		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps							
Up Type		No		Off			
Up Distance				2,960			
Up Flow (pcph)				773			
Down Type		On		No			
Down Distance		2,960					
Down Flow (pcph)		553					
Calculate Merge Influence Area Operations							
Effective v_P (pcph)				6,056			
Up Ramp L_{EQ}				1,486			
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)				0.585			
P_{FM} (Eqn 13-4)				0.678			
P_{FM} (Eqn 13-5)							
P_{FM}				0.585			
v_{12} (pcph)				3,543			
v_3 (pcph)				2,513			
v_{34} (pcph)							
v_{12a} (pcph)				3,543			
v_{R12a} (pcph)				4,096			
Merge Speed Index				0.53			
Merge Area Speed				52.8			
Outer Lanes Volume				2,513			
Outer Lanes Speed				57.2			
Segment Speed				54.4			
Merge v/c ratio				0.89			
Merge Density				35.5			
Merge LOS				E			

Location	1	2	3	4	5	6	



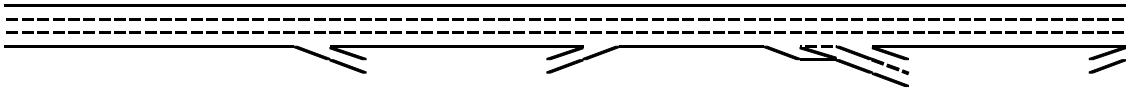
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)		6,856			6,609		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}		857					
P_{FD} (Eqn 13-9)		0.553			0.545		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		0.553			0.450		
v_{12} (pcph)		4,137			3,573		
v_3 (pcph)		2,719			3,035		
v_{34} (pcph)							
v_{12a} (pcph)		4,156			3,909		
Diverge Speed Index		0.37			0.40		
Diverge Area Speed		56.5			55.9		
Outer Lanes Volume		2,700			2,700		
Outer Lanes Speed		64.7			64.7		
Segment Speed		59.5			59.2		
Diverge v/c ratio		0.94			0.89		
Diverge Density		38.9			24.4		
Diverge LOS		E			C		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to Mainline Flow Rate for Weave Segments							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	1	2	3	4	5	6	



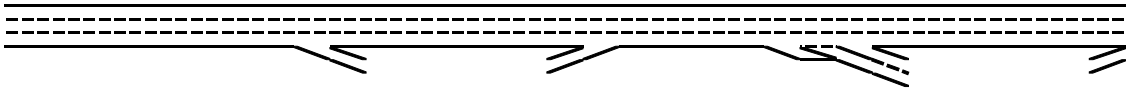
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Calculate Mainline to Off Ramp Flow Rate for Weave Segments							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Location	1	2	3	4	5	6	



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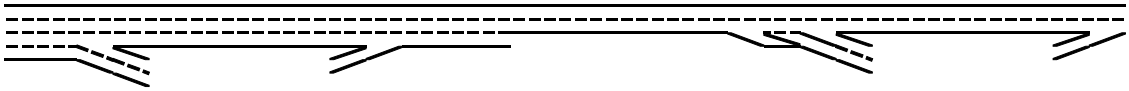
<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Calculate Weave Segment Operations							
Weave Type							
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.97	0.94	0.86	0.89	0.89	0.78	
Segment Density	42.4	38.9	33.8	35.5	24.4	29.5	
Segment LOS	E	E	D	E	C	D	
Over Capacity							

Location	7	8	9	10	11	12	



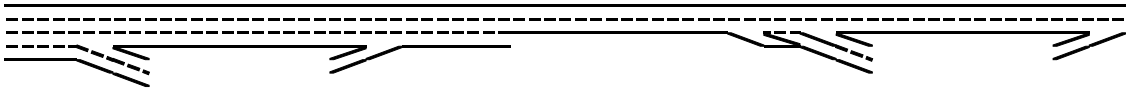
Key

<> Express Lane (HOV)

No Trucks

Name	asant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Define Freeway Segment							
Type	Weave	Basic	Merge	Basic	Diverge	Basic	
Length (ft)	3,370	1,920	1,500	3,300	1,500	1,800	
Accel Length			375				
Decel Length					1,500		
Mainline Volume	5,120	3,770	3,770	4,250	4,250	2,690	
On Ramp Volume	420		480				
Off Ramp Volume	1,770				1,560		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	5,540	3,770	4,250	4,250	4,250	2,690	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	4	3	3	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	5,963	4,058	4,574	4,574	4,574	2,895	
GP Flow (pcphpl)	1,491	1,353	1,525	2,287	2,287	1,448	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.63	0.58	0.65	0.97	0.97	0.62	
Speed (mph)	64.9	65.0	64.8	53.8	53.8	65.0	
Density (pcphpl)	23.0	20.8	23.5	42.5	42.5	22.3	
LOS	C	C	C	E	E	C	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	5,516		4,064		4,574		
GP_{IN} Cap (pcph)	7,050		7,050		4,700		
GP_{IN} v/c ratio	0.78		0.58		0.97		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	4,072		4,574		2,916		
GP_{OUT} Cap (pcph)	7,050		7,050		4,700		
GP_{OUT} v/c ratio	0.58		0.65		0.62		

Location	7	8	9	10	11	12	



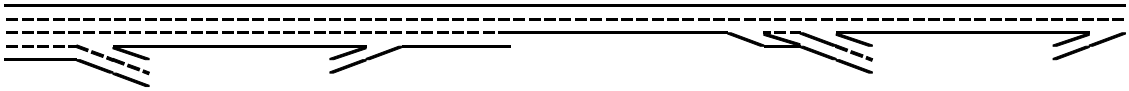
Key

<> Express Lane (HOV)

No Trucks

Name	easant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	420		480				
PHF	0.95		0.95				
Total Lanes	1		1				
Terrain	Level		Level				
Grade %	0.0%		0.0%				
Grade Length (mi)	0.00		0.00				
Truck & Bus %	2.0%		2.0%				
RV %	0.0%		0.0%				
E_T	1.5		1.5				
E_R	1.2		1.2				
f_{HV}	0.990		0.990				
f_P	1.00		1.00				
On Flow (pcph)	447		510				
On Flow (pcphpl)	447		510				
Calculate On Ramp Roadway Operations							
On Ramp Type	Right		Right				
On Ramp Speed (mph)	25		25				
On Ramp Cap (pcph)	1,900		1,900				
On Ramp v/c ratio	0.24		0.27				

Location	7	8	9	10	11	12	



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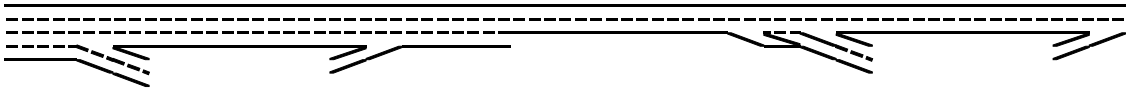
<> Express Lane (HOV)

No Trucks

Name	asant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Off Ramp Flow Rate							
Off Volume (vph)	1,770				1,560		
PHF	0.95				0.95		
Total Lanes	2				2		
Terrain	Level				Level		
Grade %	0.0%				0.0%		
Grade Length (mi)	0.00				0.00		
Truck & Bus %	3.0%				2.0%		
RV %	0.0%				0.0%		
E_T	1.5				1.5		
E_R	1.2				1.2		
f_{HV}	0.985				0.990		
f_P	1.00				1.00		
Off Flow (pcph)	1,891				1,659		
Off Flow (pcphpl)	946				829		
Calculate Off Ramp Roadway Operations							
Off Ramp Type	Right				Right		
Off Ramp Speed	45				45		
Off Ramp Cap (pcph)	4,200				4,200		
Off Ramp v/c ratio	0.45				0.39		
Determine Adjacent Ramp for Three-Lane Main							
Up Type			No				
Up Distance							
Up Flow (pcph)							
Down Type			No				
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)			4,064				
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)			0.588				
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}			0.588				
v_{12} (pcph)			2,390				
v_3 (pcph)			1,674				
v_{34} (pcph)							
v_{12a} (pcph)			2,390				
v_{R12a} (pcph)			2,900				
Merge Speed Index			0.37				
Merge Area Speed			56.4				
Outer Lanes Volume			1,674				
Outer Lanes Speed			60.8				
Segment Speed			57.9				
Merge v/c ratio			0.63				
Merge Density			25.5				
Merge LOS			C				

Location	7	8	9	10	11	12	



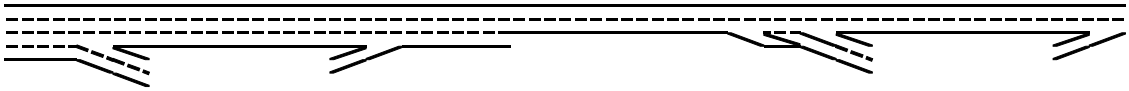
Key

<> Express Lane (HOV)

No Trucks

Name	easant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)					4,574		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)					0.569		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}					1.000		
v_{12} (pcph)					4,574		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)					4,574		
Diverge Speed Index					0.45		
Diverge Area Speed					54.7		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed					54.7		
Diverge v/c ratio					1.04		
Diverge Density					30.1		
Diverge LOS					F		
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)	50						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to Off Flow (pcph)	53						
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)	370						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to ML Flow (pcph)	395						

Location	7	8	9	10	11	12	



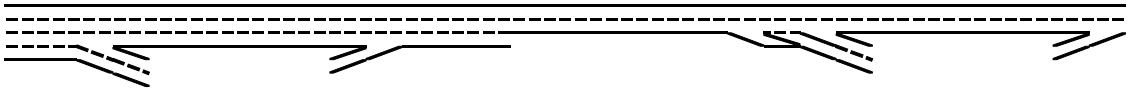
Key

<> Express Lane (HOV)

No Trucks

Name	asant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)	1,720						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
ML to Off Flow (pcph)	1,838						
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)	3,400						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
GP to GP Flow (pcph)	3,633						

Location	7	8	9	10	11	12	



Key

<> Express Lane (HOV)

No Trucks

Name	easant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Weave Segment Operations							
Weave Type	One-sided						
Weave Length	2,370						
Segment Lanes	4						
Weave Lanes	2						
Weave Flow (pcph)	2,233						
Non-Weave Flow	3,686						
Segment Flow	5,919						
Max Weave Length	6,427						
Length Check	OK						
Ideal Weave Capacity	2,040						
f_{HV}	0.985						
f_P	0.999						
Capacity Condition 1	8,030						
Capacity Condition 2	6,262						
Weave v/c ratio	0.93						
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.93	0.58	0.63	0.97	1.04	0.62	
Segment Density		20.8	25.5	42.5	-	22.3	
Segment LOS		C	C	E	F	C	
Over Capacity					Diverge		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Define Freeway Segment							
Type	Merge	Weave	Basic	Merge	Merge	Basic	D
Length (ft)	1,000	2,770	1,420	1,150	1,500	1,020	
Accel Length	620			340	1,260		
Decel Length							
Mainline Volume	2,690	2,860	2,510	2,510	3,140	3,450	
On Ramp Volume	170	410		630	310		
Off Ramp Volume		760					
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	2,860	3,270	2,510	3,140	3,450	3,450	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	2	3	2	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	3,078	3,520	2,702	3,380	3,713	3,713	
GP Flow (pcphpl)	1,539	1,173	1,351	1,690	1,857	1,857	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.65	0.50	0.57	0.72	0.79	0.79	
Speed (mph)	64.7	65.0	65.0	63.8	62.0	62.0	
Density (pcphpl)	23.8	18.0	20.8	26.5	29.9	29.9	
LOS	C	C	C	D	D	D	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	2,898	3,084		2,710	3,384		
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700		
GP_{IN} v/c ratio	0.62	0.66		0.58	0.72		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	3,078	2,712		3,380	3,713		
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700		
GP_{OUT} v/c ratio	0.65	0.58		0.72	0.79		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	170	410		630	310		
PHF	0.95	0.95		0.95	0.95		
Total Lanes	1	1		1	1		
Terrain	Level	Level		Level	Level		
Grade %	0.0%	0.0%		0.0%	0.0%		
Grade Length (mi)	0.00	0.00		0.00	0.00		
Truck & Bus %	2.0%	2.0%		2.0%	2.0%		
RV %	0.0%	0.0%		0.0%	0.0%		
E_T	1.5	1.5		1.5	1.5		
E_R	1.2	1.2		1.2	1.2		
f_{HV}	0.990	0.990		0.990	0.990		
f_P	1.00	1.00		1.00	1.00		
On Flow (pcph)	181	436		670	330		
On Flow (pcphpl)	181	436		670	330		
Calculate On Ramp Roadway Operations							
On Ramp Type	Right	Right		Right	Right		
On Ramp Speed (mph)	25	45		25	45		
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100		
On Ramp v/c ratio	0.10	0.21		0.35	0.16		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Off Ramp Flow Rate							
Off Volume (vph)		760					
PHF		0.95					
Total Lanes		2					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		2.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.990					
f_P		1.00					
Off Flow (pcph)		808					
Off Flow (pcphpl)		404					
Calculate Off Ramp Roadway Operations							
Off Ramp Type							
Off Ramp Speed							
Off Ramp Cap (pcph)							
Off Ramp v/c ratio							
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)	2,898			2,710	3,384		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)	0.595			0.587	0.613		
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}	1.000			1.000	1.000		
v_{12} (pcph)	2,898			2,710	3,384		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)	2,898			2,710	3,384		
v_{R12a} (pcph)	3,078			3,380	3,713		
Merge Speed Index	0.37			0.42	0.37		
Merge Area Speed	56.4			55.4	56.5		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed	56.4			55.4	56.5		
Merge v/c ratio	0.67			0.73	0.81		
Merge Density	25.5			29.4	26.4		
Merge LOS	C			D	C		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)							
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)							
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}							
v_{12} (pcph)							
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							
Diverge Speed Index							
Diverge Area Speed							
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio							
Diverge Density							
Diverge LOS							
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)		103					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to Off Flow (pcph)		110					
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)		308					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to ML Flow (pcph)		329					

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)		658					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		6.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.971					
f_P		1.00					
ML to Off Flow (pcph)		713					
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)		2,203					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		6.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.971					
f_P		1.00					
GP to GP Flow (pcph)		2,388					

Location	13	14	15	16	17	18	

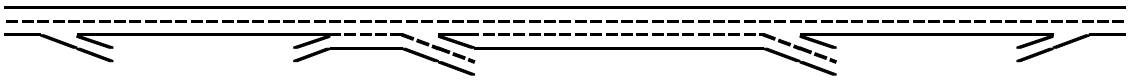
Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Weave Segment Operations							
Weave Type		One-sided					
Weave Length		1,770					
Segment Lanes		3					
Weave Lanes		2					
Weave Flow (pcph)		1,041					
Non-Weave Flow		2,497					
Segment Flow		3,539					
Max Weave Length		5,523					
Length Check		OK					
Ideal Weave Capacity		2,063					
f_{HV}		0.973					
f_P		0.999					
Capacity Condition 1		6,011					
Capacity Condition 2		7,922					
Weave v/c ratio		0.57					
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.67	0.57	0.57	0.73	0.81	0.79	
Segment Density	25.5		20.8	29.4	26.4	29.9	
Segment LOS	C		C	D	C	D	
Over Capacity							

Location	19	20	21	22	23	24	25



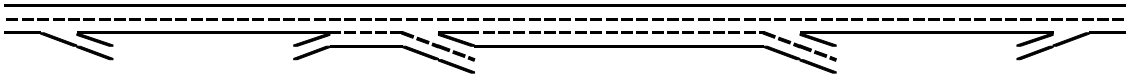
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Define Freeway Segment							
Type	Diverge	Basic	Weave	Basic	Basic	Basic	Merge
Length (ft)	1,500	2,590	2,680	900	1,500	2,870	1,500
Accel Length							600
Decel Length	175						
Mainline Volume	3,450	2,390	2,390	2,050	2,050	960	960
On Ramp Volume			580				380
Off Ramp Volume	1,060		920		1,090		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	3,450	2,390	2,970	2,050	2,050	960	1,340
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	3	3	3	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	0.978
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,713	2,572	3,197	2,206	2,206	1,033	1,442
GP Flow (pcphpl)	1,857	1,286	1,066	735	735	517	721
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes							
v/c ratio	0.79	0.55	0.45	0.31	0.31	0.22	0.31
Speed (mph)	62.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	29.9	19.8	16.4	11.3	11.3	7.9	11.1
LOS	D	C	B	B	B	A	B
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	3,713		2,565				1,034
GP_{IN} Cap (pcph)	4,700		4,700				4,700
GP_{IN} v/c ratio	0.79		0.55				0.22
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	2,586		2,214		1,036		1,442
GP_{OUT} Cap (pcph)	4,700		4,700		4,700		4,700
GP_{OUT} v/c ratio	0.55		0.47		0.22		0.31

Location	19	20	21	22	23	24	25



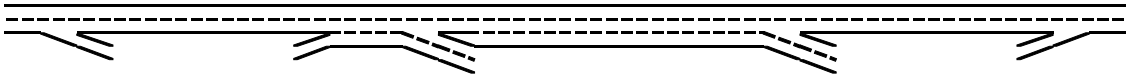
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)			580				380
PHF			0.95				0.95
Total Lanes			1				1
Terrain			Level				Level
Grade %			0.0%				0.0%
Grade Length (mi)			0.00				0.00
Truck & Bus %			7.0%				4.0%
RV %			0.0%				0.0%
E_T			1.5				1.5
E_R			1.2				1.2
f_{HV}			0.966				0.980
f_P			1.00				1.00
On Flow (pcph)			632				408
On Flow (pcphpl)			632				408
Calculate On Ramp Roadway Operations							
On Ramp Type			Right				Right
On Ramp Speed (mph)			45				45
On Ramp Cap (pcph)			2,100				2,100
On Ramp v/c ratio			0.30				0.19

Location	19	20	21	22	23	24	25



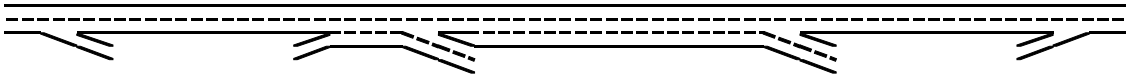
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Off Ramp Flow Rate							
Off Volume (vph)	1,060		920		1,090		
PHF	0.95		0.95		0.95		
Total Lanes	1		2		2		
Terrain	Level		Level		Level		
Grade %	0.0%		0.0%		0.0%		
Grade Length (mi)	0.00		0.00		0.00		
Truck & Bus %	2.0%		3.0%		4.0%		
RV %	0.0%		0.0%		0.0%		
E_T	1.5		1.5		1.5		
E_R	1.2		1.2		1.2		
f_{HV}	0.990		0.985		0.980		
f_P	1.00		1.00		1.00		
Off Flow (pcph)	1,127		983		1,170		
Off Flow (pcphpl)	1,127		491		585		
Calculate Off Ramp Roadway Operations							
Off Ramp Type	Right		Right		Right		
Off Ramp Speed	45		45		45		
Off Ramp Cap (pcph)	2,100		4,200		4,200		
Off Ramp v/c ratio	0.54		0.23		0.28		
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)							1,034
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)							0.594
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}							1.000
v_{12} (pcph)							1,034
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							1,034
v_{R12a} (pcph)							1,442
Merge Speed Index							0.28
Merge Area Speed							58.5
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							58.5
Merge v/c ratio							0.31
Merge Density							12.8
Merge LOS							B

Location	19	20	21	22	23	24	25



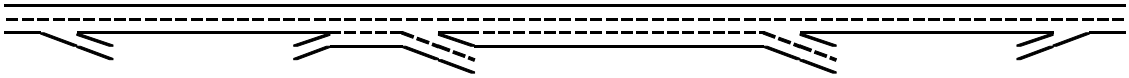
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)	3,713						
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)	0.615						
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}	1.000						
v_{12} (pcph)	3,713						
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)	3,713						
Diverge Speed Index	0.40						
Diverge Area Speed	55.8						
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed	55.8						
Diverge v/c ratio	0.84						
Diverge Density	34.6						
Diverge LOS	D						
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)			58				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			7.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.966				
f_P			1.00				
On to Off Flow (pcph)			75				
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)			522				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
On to ML Flow (pcph)			662				

Location	19	20	21	22	23	24	25



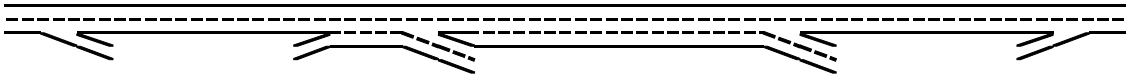
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)			862				
PHF			0.83				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
ML to Off Flow (pcph)			1,054				
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)			1,528				
PHF			0.825				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
GP to GP Flow (pcph)			1,880				

Location	19	20	21	22	23	24	25



Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Weave Segment Operations							
Weave Type			One-sided				
Weave Length			1,680				
Segment Lanes			3				
Weave Lanes			3				
Weave Flow (pcph)			1,716				
Non-Weave Flow			1,955				
Segment Flow			3,671				
Max Weave Length			5,883				
Length Check			OK				
Ideal Weave Capacity			2,028				
f_{HV}			0.985				
f_P			0.997				
Capacity Condition 1			5,977				
Capacity Condition 2			7,353				
Weave v/c ratio			0.60				
Interchange Density			0.666666667				
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate			0				
Weave LC Rate			564				
Non-Weave LC Rate 1			735				
Non-Weave LC Rate 2			2,125				
Non-Weave LC Rate 3			-1,575				
Segment LC Rate			1,299				
Weave Intensity Factor			0.185				
Weave Speed			57.2				
Non-Weave Speed			59.1				
Segment Speed			58.2				
Weave Density			21.0				
Weave LOS			C				
Summarize Segment Operations							
Segment v/c ratio	0.84	0.55	0.60	0.31	0.31	0.22	0.31
Segment Density	34.6	19.8	21.0	11.3	11.3	7.9	12.8
Segment LOS	D	C	C	B	B	A	B
Over Capacity							

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segment		
Type		Basic
Length (ft)		8,600
Accel Length		
Decel Length		
Mainline Volume		1,340
On Ramp Volume		
Off Ramp Volume		
Express Lane Volume		
EL On Ramp Volume		
EL Off Ramp Volume		
Calculate Flow Rate in General Purpose Lanes		
GP Volume (vph)		1,340
PHF		0.95
GP Lanes		2
Terrain		Level
Grade %		0.0%
Grade Length (mi)		0.00
Truck & Bus %		4.5%
RV %		0.0%
E_T		1.5
E_R		1.2
f_{HV}		0.978
f_P		1.00
GP Flow (pcph)		1,442
GP Flow (pcphpl)		721
Calculate Speed in General Purpose Lanes		
Lane Width (ft)		
Shoulder Width		
TRD		
f_{LW}		
f_{LC}		
Calculated FFS		
Measured FFS		
FFS Curve		65
Calculate Operations in General Purpose Lanes		
v/c ratio		0.31
Speed (mph)		65.0
Density (pcphpl)		11.1
LOS		B
Calculate Operations for Entering GP Lanes		
GP_{IN} Vol (pcph)		
GP_{IN} Cap (pcph)		
GP_{IN} v/c ratio		
Calculate Operations for Exiting GP Lanes		
GP_{OUT} Vol (pcph)		
GP_{OUT} Cap (pcph)		
GP_{OUT} v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in Express Lanes (EL)		
Calculate Speed in Express Lanes		
Calculate Operations in Express Lanes		
Calculate On Ramp Flow Rate		
On Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On Flow (pcph)		
On Flow (pcphpl)		
Calculate On Ramp Roadway Operations		
On Ramp Type		
On Ramp Speed (mph)		
On Ramp Cap (pcph)		
On Ramp v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flow Rate		
Off Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
Off Flow (pcph)		
Off Flow (pcphpl)		
Calculate Off Ramp Roadway Operations		
Off Ramp Type		
Off Ramp Speed		
Off Ramp Cap (pcph)		
Off Ramp v/c ratio		
Determine Adjacent Ramp for Three-Lane Main		
Up Type		
Up Distance		
Up Flow (pcph)		
Down Type		
Down Distance		
Down Flow (pcph)		
Calculate Merge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FM} (Eqn 13-3)		
P_{FM} (Eqn 13-4)		
P_{FM} (Eqn 13-5)		
P_{FM}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
v_{R12a} (pcph)		
Merge Speed Index		
Merge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Merge v/c ratio		
Merge Density		
Merge LOS		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FD} (Eqn 13-9)		
P_{FD} (Eqn 13-10)		
P_{FD} (Eqn 13-11)		
P_{FD}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
Diverge Speed Index		
Diverge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Diverge v/c ratio		
Diverge Density		
Diverge LOS		
**Calculate On Ramp to Off Ramp Flow Rate for **		
On to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to Off Flow (pcph)		
Calculate On Ramp to Mainline Flow Rate for W		
On to ML Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to ML Flow (pcph)		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to Off Ramp Flow Rate for W		
ML to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
ML to Off Flow (pcph)		
Calculate General Purpose Lanes to General Pu		
GP to GP Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
GP to GP Flow (pcph)		

Location		26

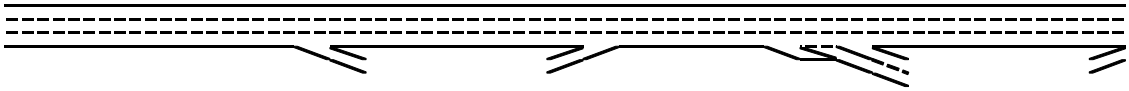
Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segment Operations		
Weave Type		
Weave Length		
Segment Lanes		
Weave Lanes		
Weave Flow (pcph)		
Non-Weave Flow		
Segment Flow		
Max Weave Length		
Length Check		
Ideal Weave Capacity		
f_{HV}		
f_P		
Capacity Condition 1		
Capacity Condition 2		
Weave v/c ratio		
Interchange Density		
Lane Changes On to ML		
Lane Changes ML to Off		
Lane Changes On to Off		
Min Lane Change Rate		
Weave LC Rate		
Non-Weave LC Rate 1		
Non-Weave LC Rate 2		
Non-Weave LC Rate 3		
Segment LC Rate		
Weave Intensity Factor		
Weave Speed		
Non-Weave Speed		
Segment Speed		
Weave Density		
Weave LOS		
Summarize Segment Operations		
Segment v/c ratio		0.31
Segment Density		11.1
Segment LOS		B
Over Capacity		

Location	1	2	3	4	5	6	



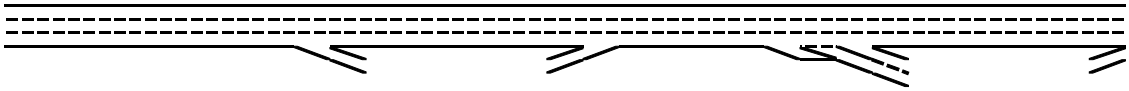
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Define Freeway Segment							
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	
Length (ft)	1,780	1,500	2,960	1,500	1,500	1,250	
Accel Length				270			
Decel Length		120			1,500		
Mainline Volume	6,210	6,210	5,000	5,000	6,000	4,720	
On Ramp Volume				1,000			
Off Ramp Volume		1,210			1,280		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (GP)							
GP Volume (vph)	6,210	6,210	5,000	6,000	6,000	4,720	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	3	3	3	3	3	3	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	6,615	6,615	5,326	6,392	6,392	5,028	
GP Flow (pcphpl)	2,205	2,205	1,775	2,131	2,131	1,676	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.94	0.94	0.76	0.91	0.91	0.71	
Speed (mph)	55.8	55.8	63.0	57.4	57.4	63.9	
Density (pcphpl)	39.5	39.5	28.2	37.1	37.1	26.2	
LOS	E	E	D	E	E	D	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		6,615		5,328	6,392		
GP_{IN} Cap (pcph)		7,050		7,050	7,050		
GP_{IN} v/c ratio		0.94		0.76	0.91		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		5,368		6,392	5,024		
GP_{OUT} Cap (pcph)		7,050		7,050	7,050		
GP_{OUT} v/c ratio		0.76		0.91	0.71		

Location	1	2	3	4	5	6	



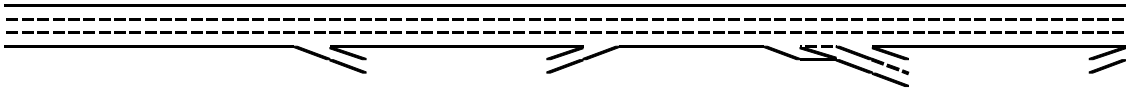
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)				1,000			
PHF				0.95			
Total Lanes				1			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				2.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.990			
f_P				1.00			
On Flow (pcph)				1,063			
On Flow (pcphpl)				1,063			
Calculate On Ramp Roadway Operations							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.51			

Location	1	2	3	4	5	6	



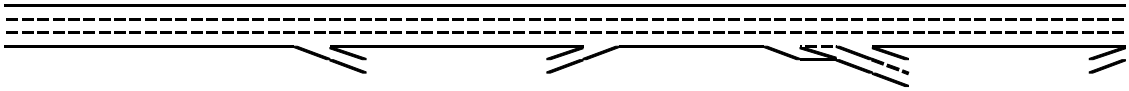
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Off Ramp Flow Rate							
Off Volume (vph)		1,210			1,280		
PHF		0.98			0.95		
Total Lanes		1			2		
Terrain		Level			Level		
Grade %		0.0%			0.0%		
Grade Length (mi)		0.00			0.00		
Truck & Bus %		2.0%			3.0%		
RV %		0.0%			0.0%		
E_T		1.5			1.5		
E_R		1.2			1.2		
f_{HV}		0.990			0.985		
f_P		1.00			1.00		
Off Flow (pcph)		1,247			1,368		
Off Flow (pcphpl)		1,247			684		
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right			Right		
Off Ramp Speed		45			45		
Off Ramp Cap (pcph)		2,100			4,200		
Off Ramp v/c ratio		0.59			0.33		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps							
Up Type		No		Off			
Up Distance				2,960			
Up Flow (pcph)				1,247			
Down Type		On		No			
Down Distance		2,960					
Down Flow (pcph)		1,063					
Calculate Merge Influence Area Operations							
Effective v_P (pcph)				5,328			
Up Ramp L_{EQ}				1,439			
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)				0.585			
P_{FM} (Eqn 13-4)				0.681			
P_{FM} (Eqn 13-5)							
P_{FM}				0.585			
v_{12} (pcph)				3,117			
v_3 (pcph)				2,211			
v_{34} (pcph)							
v_{12a} (pcph)				3,117			
v_{R12a} (pcph)				4,181			
Merge Speed Index				0.55			
Merge Area Speed				52.3			
Outer Lanes Volume				2,211			
Outer Lanes Speed				58.8			
Segment Speed				54.4			
Merge v/c ratio				0.91			
Merge Density				35.9			
Merge LOS				E			

Location	1	2	3	4	5	6	



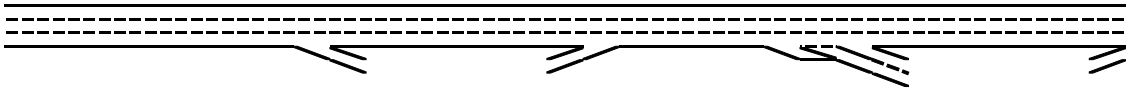
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)		6,615			6,392		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}		2,223					
P_{FD} (Eqn 13-9)		0.537			0.537		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		0.537			0.450		
v_{12} (pcph)		4,131			3,628		
v_3 (pcph)		2,484			2,763		
v_{34} (pcph)							
v_{12a} (pcph)		4,131			3,692		
Diverge Speed Index		0.41			0.42		
Diverge Area Speed		55.6			55.3		
Outer Lanes Volume		2,484			2,700		
Outer Lanes Speed		65.5			64.7		
Segment Speed		58.9			58.9		
Diverge v/c ratio		0.94			0.84		
Diverge Density		38.7			22.5		
Diverge LOS		E			C		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to Mainline Flow Rate for Weave Segments							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	1	2	3	4	5	6	



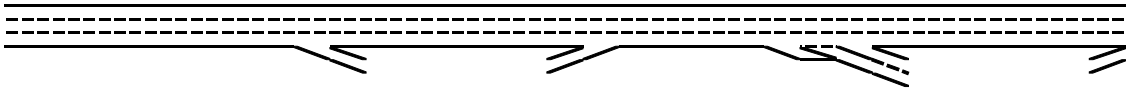
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Mainline to Off Ramp Flow Rate for Weave Segments							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Location	1	2	3	4	5	6	



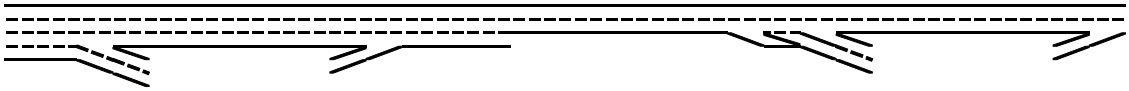
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Weave Segment Operations							
Weave Type							
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.94	0.94	0.76	0.91	0.84	0.71	
Segment Density	39.5	38.7	28.2	35.9	22.5	26.2	
Segment LOS	E	E	D	E	C	D	
Over Capacity							

Location	7	8	9	10	11	12	



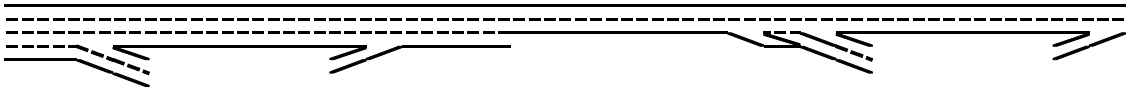
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Define Freeway Segment							
Type	Weave	Basic	Merge	Basic	Diverge	Basic	
Length (ft)	3,370	1,920	1,500	3,300	1,500	1,800	
Accel Length			375				
Decel Length					1,500		
Mainline Volume	4,720	3,870	3,870	4,210	4,210	3,180	
On Ramp Volume	900		340				
Off Ramp Volume	1,750				1,030		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	5,620	3,870	4,210	4,210	4,210	3,180	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	4	3	3	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	5,987	4,123	4,485	4,485	4,485	3,388	
GP Flow (pcphpl)	1,497	1,374	1,495	2,242	2,242	1,694	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.64	0.58	0.64	0.95	0.95	0.72	
Speed (mph)	64.9	65.0	64.9	54.9	54.9	63.8	
Density (pcphpl)	23.1	21.1	23.0	40.8	40.8	26.6	
LOS	C	C	C	E	E	D	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	5,025		4,123		4,485		
GP_{IN} Cap (pcph)	7,050		7,050		4,700		
GP_{IN} v/c ratio	0.71		0.58		0.95		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	4,117		4,485		3,390		
GP_{OUT} Cap (pcph)	7,050		7,050		4,700		
GP_{OUT} v/c ratio	0.58		0.64		0.72		

Location	7	8	9	10	11	12	



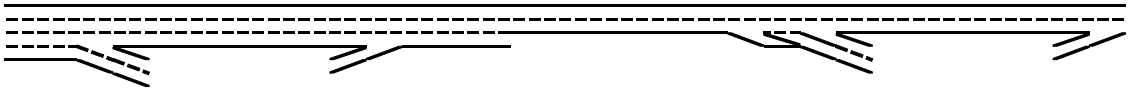
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	900		340				
PHF	0.95		0.95				
Total Lanes	1		1				
Terrain	Level		Level				
Grade %	0.0%		0.0%				
Grade Length (mi)	0.00		0.00				
Truck & Bus %	3.0%		2.0%				
RV %	0.0%		0.0%				
E_T	1.5		1.5				
E_R	1.2		1.2				
f_{HV}	0.985		0.990				
f_P	1.00		1.00				
On Flow (pcph)	962		361				
On Flow (pcphpl)	962		361				
Calculate On Ramp Roadway Operations							
On Ramp Type	Right		Right				
On Ramp Speed (mph)	25		25				
On Ramp Cap (pcph)	1,900		1,900				
On Ramp v/c ratio	0.51		0.19				

Location	7	8	9	10	11	12	



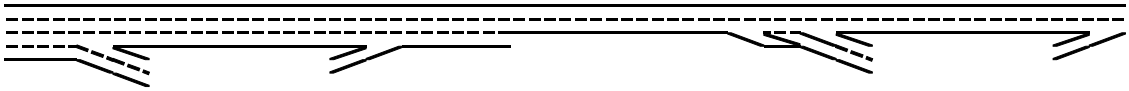
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Off Ramp Flow Rate							
Off Volume (vph)	1,750				1,030		
PHF	0.95				0.95		
Total Lanes	2				2		
Terrain	Level				Level		
Grade %	0.0%				0.0%		
Grade Length (mi)	0.00				0.00		
Truck & Bus %	3.0%				2.0%		
RV %	0.0%				0.0%		
E_T	1.5				1.5		
E_R	1.2				1.2		
f_{HV}	0.985				0.990		
f_P	1.00				1.00		
Off Flow (pcph)	1,870				1,095		
Off Flow (pcphpl)	935				548		
Calculate Off Ramp Roadway Operations							
Off Ramp Type	Right				Right		
Off Ramp Speed	45				45		
Off Ramp Cap (pcph)	4,200				4,200		
Off Ramp v/c ratio	0.45				0.26		
Determine Adjacent Ramp for Three-Lane Main							
Up Type			No				
Up Distance							
Up Flow (pcph)							
Down Type			No				
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)			4,123				
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)			0.588				
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}			0.588				
v_{12} (pcph)			2,424				
v_3 (pcph)			1,699				
v_{34} (pcph)							
v_{12a} (pcph)			2,424				
v_{R12a} (pcph)			2,786				
Merge Speed Index			0.37				
Merge Area Speed			56.6				
Outer Lanes Volume			1,699				
Outer Lanes Speed			60.7				
Segment Speed			58.1				
Merge v/c ratio			0.61				
Merge Density			24.7				
Merge LOS			C				

Location	7	8	9	10	11	12	



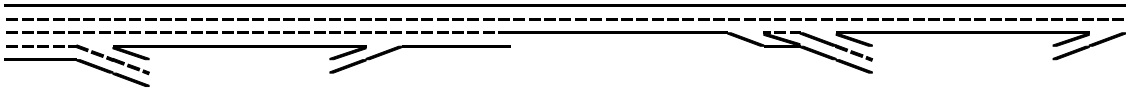
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)					4,485		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)					0.598		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}					1.000		
v_{12} (pcph)					4,485		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)					4,485		
Diverge Speed Index					0.40		
Diverge Area Speed					55.9		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed					55.9		
Diverge v/c ratio					1.02		
Diverge Density					29.3		
Diverge LOS					F		
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)	50						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to Off Flow (pcph)	53						
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)	850						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to ML Flow (pcph)	908						

Location	7	8	9	10	11	12	



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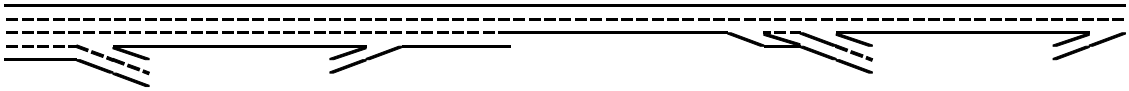
<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)	1,700						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
ML to Off Flow (pcph)	1,816						
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)	3,020						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
GP to GP Flow (pcph)	3,227						

Location	7	8	9	10	11	12	



Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Weave Segment Operations							
Weave Type	One-sided						
Weave Length	2,370						
Segment Lanes	4						
Weave Lanes	2						
Weave Flow (pcph)	2,724						
Non-Weave Flow	3,280						
Segment Flow	6,005						
Max Weave Length	7,291						
Length Check	OK						
Ideal Weave Capacity	1,974						
f_{HV}	0.985						
f_P	0.998						
Capacity Condition 1	7,760						
Capacity Condition 2	5,200						
Weave v/c ratio	1.14						
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	1.14	0.58	0.61	0.95	1.02	0.72	
Segment Density	-	21.1	24.7	40.8	-	26.6	
Segment LOS	F	C	C	E	F	D	
Over Capacity	Weave				Diverge		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Define Freeway Segment							
Type	Merge	Weave	Basic	Merge	Merge	Basic	D
Length (ft)	1,000	2,770	1,420	1,150	1,500	1,020	
Accel Length	620			340	1,260		
Decel Length							
Mainline Volume	3,180	3,820	3,910	3,910	4,470	4,690	
On Ramp Volume	640	440		560	220		
Off Ramp Volume		350					
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	3,820	4,260	3,910	4,470	4,690	4,690	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	2	3	2	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	4,069	4,538	4,165	4,762	4,996	4,996	
GP Flow (pcphpl)	2,035	1,513	2,083	2,381	2,498	2,498	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.87	0.64	0.89	1.01	1.06	1.06	
Speed (mph)	59.3	64.8	58.4	-	-	-	
Density (pcphpl)	34.3	23.3	35.7	-	-	-	
LOS	D	C	E	F	F	F	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	3,389	4,070		4,166	4,762		
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700		
GP_{IN} v/c ratio	0.72	0.87		0.89	1.01		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	4,069	4,166		4,762	4,996		
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700		
GP_{OUT} v/c ratio	0.87	0.89		1.01	1.06		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	640	440		560	220		
PHF	0.95	0.95		0.95	0.95		
Total Lanes	1	1		1	1		
Terrain	Level	Level		Level	Level		
Grade %	0.0%	0.0%		0.0%	0.0%		
Grade Length (mi)	0.00	0.00		0.00	0.00		
Truck & Bus %	2.0%	2.0%		2.0%	2.0%		
RV %	0.0%	0.0%		0.0%	0.0%		
E_T	1.5	1.5		1.5	1.5		
E_R	1.2	1.2		1.2	1.2		
f_{HV}	0.990	0.990		0.990	0.990		
f_P	1.00	1.00		1.00	1.00		
On Flow (pcph)	680	468		595	234		
On Flow (pcphpl)	680	468		595	234		
Calculate On Ramp Roadway Operations							
On Ramp Type	Right	Right		Right	Right		
On Ramp Speed (mph)	25	45		25	45		
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100		
On Ramp v/c ratio	0.36	0.22		0.31	0.11		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Off Ramp Flow Rate							
Off Volume (vph)		350					
PHF		0.95					
Total Lanes		2					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		2.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.990					
f_P		1.00					
Off Flow (pcph)		372					
Off Flow (pcphpl)		186					
Calculate Off Ramp Roadway Operations							
Off Ramp Type							
Off Ramp Speed							
Off Ramp Cap (pcph)							
Off Ramp v/c ratio							
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)	3,389			4,166	4,762		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)	0.595			0.587	0.613		
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}	1.000			1.000	1.000		
v_{12} (pcph)	3,389			4,166	4,762		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)	3,389			4,166	4,762		
v_{R12a} (pcph)	4,069			4,762	4,996		
Merge Speed Index	0.52			-	-		
Merge Area Speed	53.1			-	-		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed	53.1						
Merge v/c ratio	0.88			1.04	1.09		
Merge Density	33.0			-	-		
Merge LOS	D			F	F		

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)							
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)							
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}							
v_{12} (pcph)							
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							
Diverge Speed Index							
Diverge Area Speed							
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio							
Diverge Density							
Diverge LOS							
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)		110					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to Off Flow (pcph)		118					
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)		330					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to ML Flow (pcph)		353					

Location	13	14	15	16	17	18	

Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)		240					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
ML to Off Flow (pcph)		256					
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)		3,580					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
GP to GP Flow (pcph)		3,825					

Location	13	14	15	16	17	18	

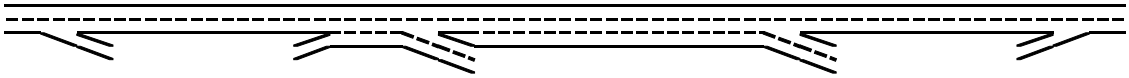
Key

<> Express Lane (HOV)

No Trucks

Name	Loop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Br
Calculate Weave Segment Operations							
Weave Type		One-sided					
Weave Length		1,770					
Segment Lanes		3					
Weave Lanes		2					
Weave Flow (pcph)		609					
Non-Weave Flow		3,942					
Segment Flow		4,551					
Max Weave Length		3,871					
Length Check		OK					
Ideal Weave Capacity		2,189					
f_{HV}		0.985					
f_P		0.999					
Capacity Condition 1		6,463					
Capacity Condition 2		17,652					
Weave v/c ratio		0.69					
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.88	0.69	0.89	1.04	1.09	1.06	
Segment Density	33.0		35.7	-	-	-	
Segment LOS	D		E	F	F	F	
Over Capacity				Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes In GP Lanes Out GP Lanes Merge	Segment GP Lanes	Segment GP La

Location	19	20	21	22	23	24	25



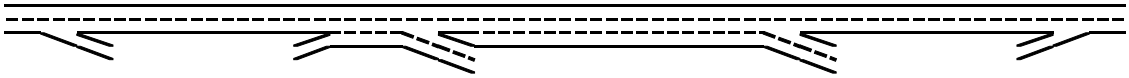
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Define Freeway Segment							
Type	iverge	Basic	Weave	Basic	Basic	Basic	Merge
Length (ft)	1,500	2,590	2,680	900	1,500	2,870	1,500
Accel Length							600
Decel Length	175						
Mainline Volume	4,690	4,190	4,190	4,300	4,300	2,200	2,200
On Ramp Volume			980				520
Off Ramp Volume	500		870		2,100		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	4,690	4,190	5,170	4,300	4,300	2,200	2,720
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	3	3	3	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	0.988
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,996	4,463	5,507	4,581	4,581	2,344	2,898
GP Flow (pcphpl)	2,498	2,232	1,836	1,527	1,527	1,172	1,449
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes							
v/c ratio	1.06	0.95	0.78	0.65	0.65	0.50	0.62
Speed (mph)	-	55.2	62.3	64.8	64.8	65.0	65.0
Density (pcphpl)	-	40.4	29.5	23.6	23.6	18.0	22.3
LOS	F	E	D	C	C	C	C
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	4,996		4,460				2,345
GP_{IN} Cap (pcph)	4,700		4,700				4,700
GP_{IN} v/c ratio	1.06		0.95				0.50
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	4,465		4,582		2,348		2,898
GP_{OUT} Cap (pcph)	4,700		4,700		4,700		4,700
GP_{OUT} v/c ratio	0.95		0.97		0.50		0.62

Location	19	20	21	22	23	24	25



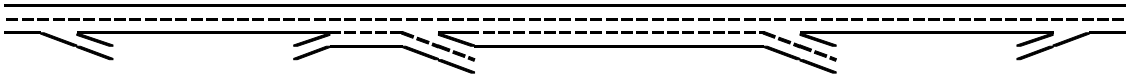
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)			980				520
PHF			0.95				0.95
Total Lanes			1				1
Terrain			Level				Level
Grade %			0.0%				0.0%
Grade Length (mi)			0.00				0.00
Truck & Bus %			3.0%				2.0%
RV %			0.0%				0.0%
E_T			1.5				1.5
E_R			1.2				1.2
f_{HV}			0.985				0.990
f_P			1.00				1.00
On Flow (pcph)			1,047				553
On Flow (pcphpl)			1,047				553
Calculate On Ramp Roadway Operations							
On Ramp Type			Right				Right
On Ramp Speed (mph)			45				45
On Ramp Cap (pcph)			2,100				2,100
On Ramp v/c ratio			0.50				0.26

Location	19	20	21	22	23	24	25



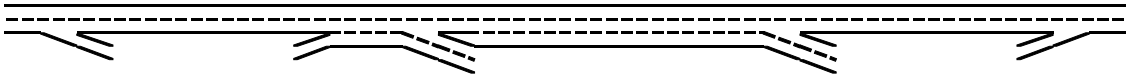
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Off Ramp Flow Rate							
Off Volume (vph)	500		870		2,100		
PHF	0.95		0.95		0.95		
Total Lanes	1		2		2		
Terrain	Level		Level		Level		
Grade %	0.0%		0.0%		0.0%		
Grade Length (mi)	0.00		0.00		0.00		
Truck & Bus %	2.0%		2.0%		2.0%		
RV %	0.0%		0.0%		0.0%		
E_T	1.5		1.5		1.5		
E_R	1.2		1.2		1.2		
f_{HV}	0.990		0.990		0.990		
f_P	1.00		1.00		1.00		
Off Flow (pcph)	532		925		2,233		
Off Flow (pcphpl)	532		462		1,116		
Calculate Off Ramp Roadway Operations							
Off Ramp Type	Right		Right		Right		
Off Ramp Speed	45		45		45		
Off Ramp Cap (pcph)	2,100		4,200		4,200		
Off Ramp v/c ratio	0.25		0.22		0.53		
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)							2,345
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)							0.594
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}							1.000
v_{12} (pcph)							2,345
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							2,345
v_{R12a} (pcph)							2,898
Merge Speed Index							0.34
Merge Area Speed							57.2
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							57.2
Merge v/c ratio							0.63
Merge Density							24.1
Merge LOS							C

Location	19	20	21	22	23	24	25



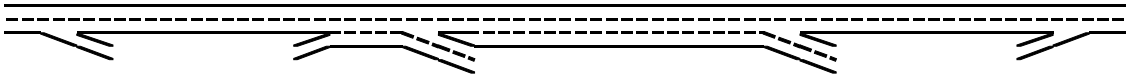
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)	4,996						
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)	0.611						
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}	1.000						
v_{12} (pcph)	4,996						
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)	4,996						
Diverge Speed Index	-						
Diverge Area Speed	-						
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio	1.14						
Diverge Density	-						
Diverge LOS	F						
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)			98				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			7.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.966				
f_P			1.00				
On to Off Flow (pcph)			127				
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)			882				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
On to ML Flow (pcph)			1,119				

Location	19	20	21	22	23	24	25



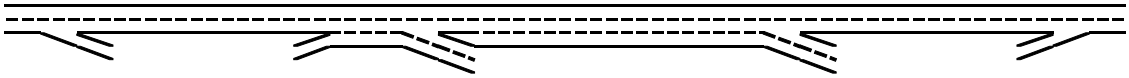
Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)			772				
PHF			0.83				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
ML to Off Flow (pcph)			944				
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)			3,418				
PHF			0.825				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
GP to GP Flow (pcph)			4,205				

Location	19	20	21	22	23	24	25



Key

<> Express Lane (HOV)

No Trucks

Name	dges Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd
Calculate Weave Segment Operations							
Weave Type			One-sided				
Weave Length			1,680				
Segment Lanes			3				
Weave Lanes			3				
Weave Flow (pcph)			2,063				
Non-Weave Flow			4,332				
Segment Flow			6,395				
Max Weave Length			4,262				
Length Check			OK				
Ideal Weave Capacity			2,152				
f_{HV}			0.985				
f_P			0.997				
Capacity Condition 1			6,343				
Capacity Condition 2			10,657				
Weave v/c ratio			0.99				
Interchange Density			0.666666667				
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate			0				
Weave LC Rate			564				
Non-Weave LC Rate 1			1,225				
Non-Weave LC Rate 2			2,655				
Non-Weave LC Rate 3			-567				
Segment LC Rate			1,789				
Weave Intensity Factor			0.237				
Weave Speed			55.4				
Non-Weave Speed			54.8				
Segment Speed			55.0				
Weave Density			38.8				
Weave LOS			E				
Summarize Segment Operations							
Segment v/c ratio	1.14	0.95	0.99	0.65	0.65	0.50	0.63
Segment Density	-	40.4	38.8	23.6	23.6	18.0	24.1
Segment LOS	F	E	E	C	C	C	C
Over Capacity	nes In GP Lanes Diverge						

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segment		
Type		Basic
Length (ft)		8,600
Accel Length		
Decel Length		
Mainline Volume		2,720
On Ramp Volume		
Off Ramp Volume		
Express Lane Volume		
EL On Ramp Volume		
EL Off Ramp Volume		
Calculate Flow Rate in General Purpose Lanes		
GP Volume (vph)		2,720
PHF		0.95
GP Lanes		2
Terrain		Level
Grade %		0.0%
Grade Length (mi)		0.00
Truck & Bus %		2.4%
RV %		0.0%
E_T		1.5
E_R		1.2
f_{HV}		0.988
f_P		1.00
GP Flow (pcph)		2,898
GP Flow (pcphpl)		1,449
Calculate Speed in General Purpose Lanes		
Lane Width (ft)		
Shoulder Width		
TRD		
f_{LW}		
f_{LC}		
Calculated FFS		
Measured FFS		
FFS Curve		65
Calculate Operations in General Purpose Lanes		
v/c ratio		0.62
Speed (mph)		65.0
Density (pcphpl)		22.3
LOS		C
Calculate Operations for Entering GP Lanes		
GP_{IN} Vol (pcph)		
GP_{IN} Cap (pcph)		
GP_{IN} v/c ratio		
Calculate Operations for Exiting GP Lanes		
GP_{OUT} Vol (pcph)		
GP_{OUT} Cap (pcph)		
GP_{OUT} v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in Express Lanes (EL)		
Calculate Speed in Express Lanes		
Calculate Operations in Express Lanes		
Calculate On Ramp Flow Rate		
On Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On Flow (pcph)		
On Flow (pcphpl)		
Calculate On Ramp Roadway Operations		
On Ramp Type		
On Ramp Speed (mph)		
On Ramp Cap (pcph)		
On Ramp v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flow Rate		
Off Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
Off Flow (pcph)		
Off Flow (pcphpl)		
Calculate Off Ramp Roadway Operations		
Off Ramp Type		
Off Ramp Speed		
Off Ramp Cap (pcph)		
Off Ramp v/c ratio		
Determine Adjacent Ramp for Three-Lane Main		
Up Type		
Up Distance		
Up Flow (pcph)		
Down Type		
Down Distance		
Down Flow (pcph)		
Calculate Merge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FM} (Eqn 13-3)		
P_{FM} (Eqn 13-4)		
P_{FM} (Eqn 13-5)		
P_{FM}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
v_{R12a} (pcph)		
Merge Speed Index		
Merge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Merge v/c ratio		
Merge Density		
Merge LOS		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FD} (Eqn 13-9)		
P_{FD} (Eqn 13-10)		
P_{FD} (Eqn 13-11)		
P_{FD}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
Diverge Speed Index		
Diverge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Diverge v/c ratio		
Diverge Density		
Diverge LOS		
**Calculate On Ramp to Off Ramp Flow Rate for **		
On to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to Off Flow (pcph)		
Calculate On Ramp to Mainline Flow Rate for W		
On to ML Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to ML Flow (pcph)		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to Off Ramp Flow Rate for W		
ML to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
ML to Off Flow (pcph)		
Calculate General Purpose Lanes to General Pu		
GP to GP Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
GP to GP Flow (pcph)		

Location		26

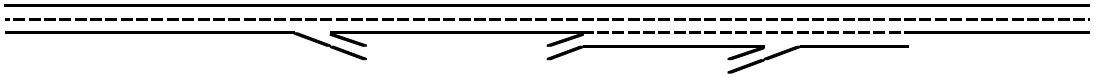
Key

<> Express Lane (HOV)

No Trucks

Name	l On-Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segment Operations		
Weave Type		
Weave Length		
Segment Lanes		
Weave Lanes		
Weave Flow (pcph)		
Non-Weave Flow		
Segment Flow		
Max Weave Length		
Length Check		
Ideal Weave Capacity		
f_{HV}		
f_P		
Capacity Condition 1		
Capacity Condition 2		
Weave v/c ratio		
Interchange Density		
Lane Changes On to ML		
Lane Changes ML to Off		
Lane Changes On to Off		
Min Lane Change Rate		
Weave LC Rate		
Non-Weave LC Rate 1		
Non-Weave LC Rate 2		
Non-Weave LC Rate 3		
Segment LC Rate		
Weave Intensity Factor		
Weave Speed		
Non-Weave Speed		
Segment Speed		
Weave Density		
Weave LOS		
Summarize Segment Operations		
Segment v/c ratio		0.62
Segment Density		22.3
Segment LOS		C
Over Capacity		

Location	1	2	3	4	5	6



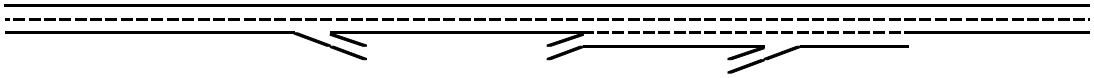
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Define Freeway Segment						
Type	Basic	Diverge	Basic	Basic	Merge	Basic
Length (ft)	8,330	1,500	1,800	1,000	1,500	870
Accel Length					720	
Decel Length		150				
Mainline Volume	2,430	2,430	1,980	1,980	3,400	4,390
On Ramp Volume				1,420	990	
Off Ramp Volume		450				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	2,430	2,430	1,980	3,400	4,390	4,390
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	3	3	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,583	2,583	2,105	3,615	4,667	4,667
GP Flow (pcphpl)	1,292	1,292	1,053	1,205	1,556	2,334
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.55	0.55	0.45	0.51	0.66	0.99
Speed (mph)	65.0	65.0	65.0	65.0	64.7	52.6
Density (pcphpl)	19.9	19.9	16.2	18.5	24.1	44.3
LOS	C	C	B	C	C	E
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)		2,583		2,105	3,615	
GP_{IN} Cap (pcph)		4,700		4,700	7,050	
GP_{IN} v/c ratio		0.55		0.45	0.51	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)		2,103			4,667	
GP_{OUT} Cap (pcph)		4,700			7,050	
GP_{OUT} v/c ratio		0.45			0.66	

Location	1	2	3	4	5	6



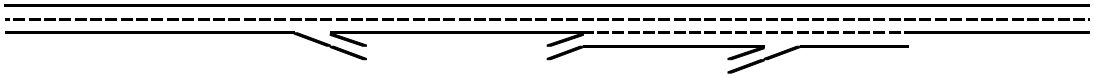
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)				1,420	990	
PHF				0.95	0.95	
Total Lanes				1	1	
Terrain				Level	Level	
Grade %				0.0%	0.0%	
Grade Length (mi)				0.00	0.00	
Truck & Bus %				2.0%	2.0%	
RV %				0.0%	0.0%	
E_T				1.5	1.5	
E_R				1.2	1.2	
f_{HV}				0.990	0.990	
f_P				1.00	1.00	
On Flow (pcph)				1,510	1,053	
On Flow (pcphpl)				1,510	1,053	
Calculate On Ramp Roadway Operations						
On Ramp Type				Right	Right	
On Ramp Speed (mph)				25	45	
On Ramp Cap (pcph)				1,900	2,100	
On Ramp v/c ratio				0.79	0.50	

Location	1	2	3	4	5	6



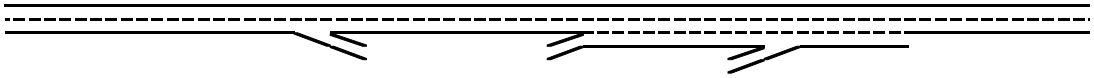
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Off Ramp Flow Rate						
Off Volume (vph)		450				
PHF		0.95				
Total Lanes		1				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
Off Flow (pcph)		481				
Off Flow (pcphpl)		481				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		2,100				
Off Ramp v/c ratio		0.23				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type					On	
Up Distance					1,000	
Up Flow (pcph)					1,510	
Down Type					No	
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)					3,615	
Up Ramp L_{EQ}					1,270	
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)					0.598	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}					0.598	
v_{12} (pcph)					2,160	
v_3 (pcph)					1,454	
v_{34} (pcph)						
v_{12a} (pcph)					2,160	
v_{R12a} (pcph)					3,213	
Merge Speed Index					0.35	
Merge Area Speed					56.9	
Outer Lanes Volume					1,454	
Outer Lanes Speed					61.6	
Segment Speed					58.3	
Merge v/c ratio					0.70	
Merge Density					25.5	
Merge LOS					C	

Location	1	2	3	4	5	6



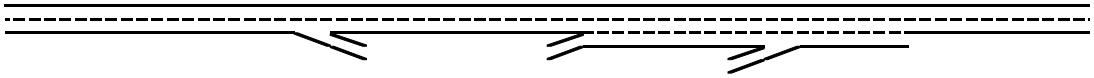
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)		2,583				
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)		0.673				
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}		1.000				
v_{12} (pcph)		2,583				
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)		2,583				
Diverge Speed Index		0.34				
Diverge Area Speed		57.2				
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed		57.2				
Diverge v/c ratio		0.59				
Diverge Density		25.1				
Diverge LOS		C				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	1	2	3	4	5	6



Key

<> Express Lane (HOV)

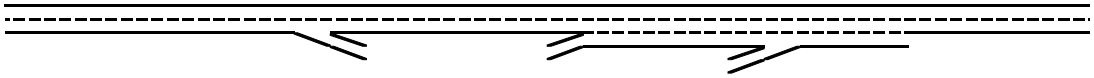
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 Cumulative No Project
Time Period: 2035 AM Peak Hour

Location	1	2	3	4	5	6



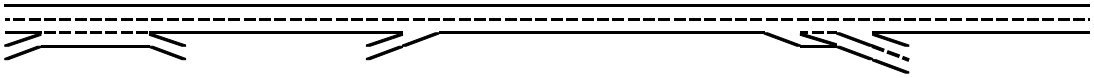
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.55	0.59	0.45	0.51	0.70	0.99
Segment Density	19.9	25.1	16.2	18.5	25.5	44.3
Segment LOS	C	C	B	C	C	E
Over Capacity						

Location	7	8	9	10	11	12



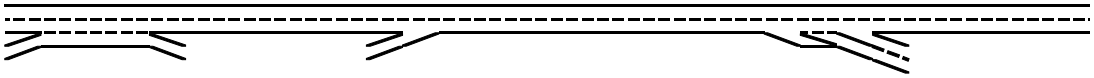
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Basic	Diverge	Basic
Length (ft)	3,050	1,120	1,500	2,210	1,500	1,830
Accel Length			450			
Decel Length					1,500	
Mainline Volume	4,390	4,090	4,090	4,420	4,420	3,740
On Ramp Volume	930		330			
Off Ramp Volume	1,230				680	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	5,320	4,090	4,420	4,420	4,420	3,740
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,656	4,348	4,699	4,699	4,699	3,976
GP Flow (pcphpl)	1,885	2,174	2,350	2,350	2,350	1,988
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.80	0.93	1.00	1.00	1.00	0.85
Speed (mph)	61.7	56.5	52.2	52.2	52.2	60.1
Density (pcphpl)	30.6	38.5	45.0	45.0	45.0	33.1
LOS	D	E	E	E	E	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,667		4,348		4,699	
GP_{IN} Cap (pcph)	4,700		4,700		4,700	
GP_{IN} v/c ratio	0.99		0.93		1.00	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	4,335		4,699		3,976	
GP_{OUT} Cap (pcph)	4,700		4,700		4,700	
GP_{OUT} v/c ratio	0.92		1.00		0.85	

Location	7	8	9	10	11	12



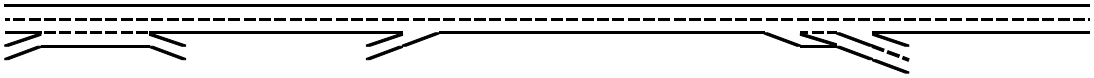
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5			
E_R	1.2	1.2	1.2			
f_{HV}	0.990	0.990	0.990			
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	930		330			
PHF	0.95		0.95			
Total Lanes	1		1			
Terrain	Level		Level			
Grade %	0.0%		0.0%			
Grade Length (mi)	0.00		0.00			
Truck & Bus %	2.0%		2.0%			
RV %	0.0%		0.0%			
E_T	1.5		1.5			
E_R	1.2		1.2			
f_{HV}	0.990		0.990			
f_P	1.00		1.00			
On Flow (pcph)	989		351			
On Flow (pcphpl)	989		351			
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right			
On Ramp Speed (mph)	45		25			
On Ramp Cap (pcph)	2,100		1,900			
On Ramp v/c ratio	0.47		0.18			

Location	7	8	9	10	11	12



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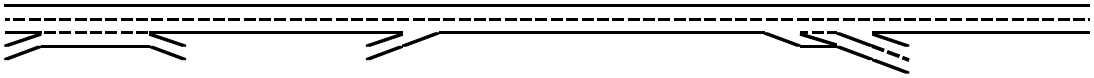
<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	1,230				680	
PHF	0.95				0.95	
Total Lanes	1				2	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	4.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.980				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	1,321				723	
Off Flow (pcphpl)	1,321				361	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				4,200	
Off Ramp v/c ratio	0.63				0.17	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			4,348			
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.590			
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000			
v_{12} (pcph)			4,348			
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			4,348			
v_{R12a} (pcph)			4,699			
Merge Speed Index			0.73			
Merge Area Speed			48.3			
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed			48.3			
Merge v/c ratio			1.02			
Merge Density			39.1			
Merge LOS			F			

Location	7	8	9	10	11	12



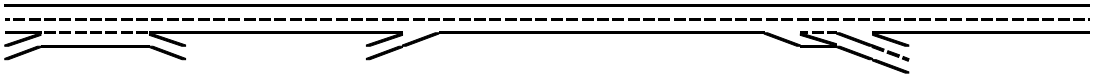
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					4,699	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.609	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					4,699	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					4,699	
Diverge Speed Index					0.36	
Diverge Area Speed					56.6	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed					56.6	
Diverge v/c ratio					1.07	
Diverge Density					31.2	
Diverge LOS					F	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	93					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	99					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	837					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	894					

Location	7	8	9	10	11	12



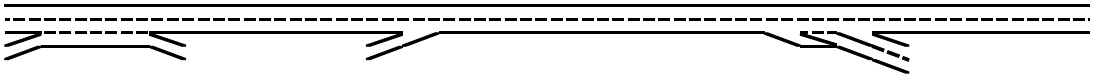
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	1,137					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
ML to Off Flow (pcph)	1,351					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	3,253					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
GP to GP Flow (pcph)	3,865					

Location	7	8	9	10	11	12



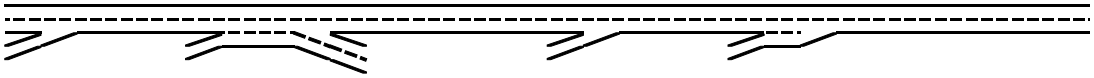
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,050					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	2,245					
Non-Weave Flow	3,965					
Segment Flow	6,210					
Max Weave Length	6,254					
Length Check	OK					
Ideal Weave Capacity	2,028					
f_{HV}	0.989					
f_P	0.998					
Capacity Condition 1	6,007					
Capacity Condition 2	6,553					
Weave v/c ratio	1.02					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	1.02	0.93	1.02	1.00	1.07	0.85
Segment Density	-	38.5	-	45.0	-	33.1
Segment LOS	F	E	F	E	F	D
Over Capacity	Weave		Merge		Diverge	

Location	13	14	15	16	17	18



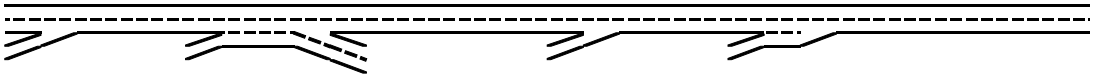
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Define Freeway Segment						
Type	Merge	Weave	Basic	Merge	Merge	Basic
Length (ft)	690	3,344	1,280	1,310	1,500	770
Accel Length	400			500	1,450	
Decel Length						
Mainline Volume	3,740	4,230	3,510	3,510	4,030	4,510
On Ramp Volume	490	20		520	480	
Off Ramp Volume		740				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,230	4,250	3,510	4,030	4,510	4,510
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	3	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,497	4,518	3,732	4,285	4,795	4,795
GP Flow (pcphpl)	2,249	1,506	1,866	2,142	2,397	2,397
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.96	0.64	0.79	0.91	1.02	1.02
Speed (mph)	54.8	64.8	61.9	57.2	-	-
Density (pcphpl)	41.0	23.2	30.1	37.5	-	-
LOS	E	C	D	E	F	F
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	3,976	4,497		3,732	4,285	
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{IN} v/c ratio	0.85	0.96		0.79	0.91	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	4,497	3,732		4,285	4,795	
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{OUT} v/c ratio	0.96	0.79		0.91	1.02	

Location	13	14	15	16	17	18



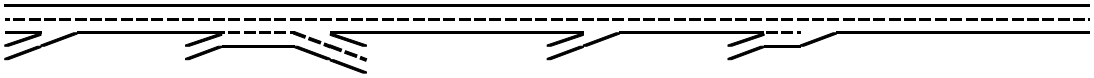
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T		1.5	1.5	1.5	1.5	
E_R		1.2	1.2	1.2	1.2	
f_{HV}		0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	490	20		520	480	
PHF	0.95	0.95		0.95	0.95	
Total Lanes	1	1		1	1	
Terrain	Level	Level		Level	Level	
Grade %	0.0%	0.0%		0.0%	0.0%	
Grade Length (mi)	0.00	0.00		0.00	0.00	
Truck & Bus %	2.0%	3.0%		2.0%	2.0%	
RV %	0.0%	0.0%		0.0%	0.0%	
E_T	1.5	1.5		1.5	1.5	
E_R	1.2	1.2		1.2	1.2	
f_{HV}	0.990	0.985		0.990	0.990	
f_P	1.00	1.00		1.00	1.00	
On Flow (pcph)	521	21		553	510	
On Flow (pcphpl)	521	21		553	510	
Calculate On Ramp Roadway Operations						
On Ramp Type	Right	Right		Right	Right	
On Ramp Speed (mph)	25	45		25	45	
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100	
On Ramp v/c ratio	0.27	0.01		0.29	0.24	

Location	13	14	15	16	17	18



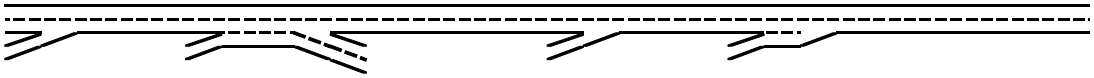
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)		740				
PHF		0.95				
Total Lanes		2				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		787				
Off Flow (pcphpl)		393				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		4,200				
Off Ramp v/c ratio		0.19				
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)	3,976			3,732	4,285	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)	0.589			0.592	0.618	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}	1.000			1.000	1.000	
v_{12} (pcph)	3,976			3,732	4,285	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)	3,976			3,732	4,285	
v_{R12a} (pcph)	4,497			4,285	4,795	
Merge Speed Index	0.65			0.58	-	
Merge Area Speed	50.0			51.7	-	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed	50.0			51.7		
Merge v/c ratio	0.98			0.93	1.04	
Merge Density	37.8			35.5	-	
Merge LOS	E			E	F	

Location	13	14	15	16	17	18



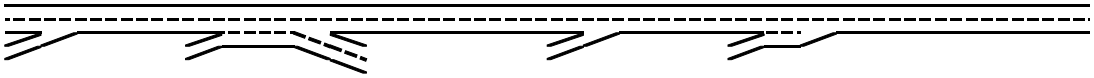
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)						
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)						
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}						
v_{12} (pcph)						
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)						
Diverge Speed Index						
Diverge Area Speed						
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio						
Diverge Density						
Diverge LOS						
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)		50				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to Off Flow (pcph)		53				
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)		-30				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to ML Flow (pcph)		-32				

Location	13	14	15	16	17	18



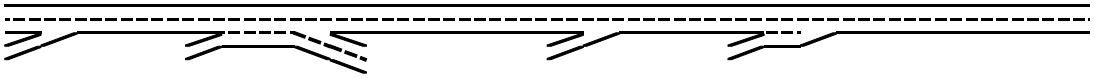
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)		690				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
ML to Off Flow (pcph)		748				
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)		3,540				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
GP to GP Flow (pcph)		3,838				

Location	13	14	15	16	17	18



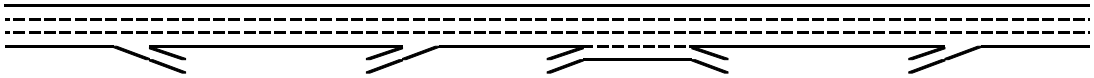
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Weave Segment Operations						
Weave Type		One-sided				
Weave Length		2,344				
Segment Lanes		3				
Weave Lanes		2				
Weave Flow (pcph)		716				
Non-Weave Flow		3,892				
Segment Flow		4,608				
Max Weave Length		4,085				
Length Check		OK				
Ideal Weave Capacity		2,217				
f_{HV}		0.971				
f_P		1.000				
Capacity Condition 1		6,458				
Capacity Condition 2		14,996				
Weave v/c ratio		0.69				
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.98	0.69	0.79	0.93	1.04	1.02
Segment Density	37.8		30.1	35.5	-	-
Segment LOS	E		D	E	F	F
Over Capacity					Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes

Location	19	20	21	22	23	24



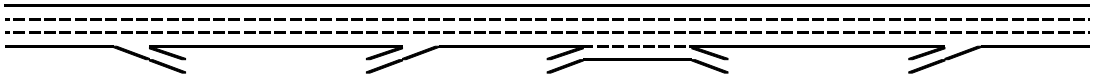
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Define Freeway Segment						
Type	Diverge	Basic	Merge	Weave	Basic	Merge
Length (ft)	1,500	1,680	1,000	3,140	1,610	1,180
Accel Length			380			550
Decel Length	200					
Mainline Volume	4,510	3,620	3,620	4,020	4,510	4,510
On Ramp Volume			400	1,570		500
Off Ramp Volume	890			1,080		
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,510	3,620	4,020	5,590	4,510	5,010
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	4	3	3
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	4.2%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.979	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,795	3,849	4,274	6,008	4,795	5,326
GP Flow (pcphpl)	1,598	1,283	1,425	1,502	1,598	1,775
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.68	0.55	0.61	0.64	0.68	0.76
Speed (mph)	64.4	65.0	65.0	64.9	64.4	63.0
Density (pcphpl)	24.8	19.7	21.9	23.2	24.8	28.2
LOS	C	C	C	C	C	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,795		3,849	4,317		4,795
GP_{IN} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{IN} v/c ratio	0.68		0.55	0.61		0.68
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,838		4,274	4,860		5,326
GP_{OUT} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{OUT} v/c ratio	0.54		0.61	0.69		0.76

Location	19	20	21	22	23	24



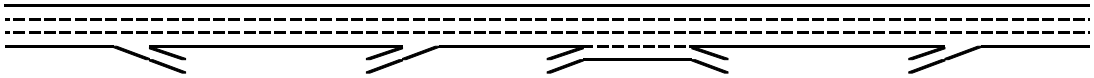
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)			400	1,570		500
PHF			0.95	0.95		0.95
Total Lanes			1	1		1
Terrain			Level	Level		Level
Grade %			0.0%	0.0%		0.0%
Grade Length (mi)			0.00	0.00		0.00
Truck & Bus %			2.0%	4.6%		2.0%
RV %			0.0%	0.0%		0.0%
E_T			1.5	1.5		1.5
E_R			1.2	1.2		1.2
f_{HV}			0.990	0.978		0.990
f_P			1.00	1.00		1.00
On Flow (pcph)			425	1,691		532
On Flow (pcphpl)			425	1,691		532
Calculate On Ramp Roadway Operations						
On Ramp Type			Right	Right		Right
On Ramp Speed (mph)			25	45		25
On Ramp Cap (pcph)			1,900	2,100		1,900
On Ramp v/c ratio			0.22	0.81		0.28

Location	19	20	21	22	23	24



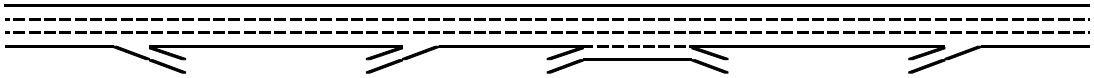
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	890			1,080		
PHF	0.95			0.95		
Total Lanes	1			1		
Terrain	Level			Level		
Grade %	0.0%			0.0%		
Grade Length (mi)	0.00			0.00		
Truck & Bus %	4.2%			2.0%		
RV %	0.0%			0.0%		
E_T	1.5			1.5		
E_R	1.2			1.2		
f_{HV}	0.979			0.990		
f_P	1.00			1.00		
Off Flow (pcph)	957			1,148		
Off Flow (pcphpl)	957			1,148		
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right			Right		
Off Ramp Speed	45			45		
Off Ramp Cap (pcph)	2,100			2,100		
Off Ramp v/c ratio	0.46			0.55		
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type	No		Off			No
Up Distance			1,680			
Up Flow (pcph)			957			
Down Type	On		No			On
Down Distance	1,500					1,180
Down Flow (pcph)	425					851
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,849			4,795
Up Ramp L_{EQ}			-12			
Down Ramp L_{EQ}						5,049
P_{FM} (Eqn 13-3)			0.588			0.593
P_{FM} (Eqn 13-4)			0.695			
P_{FM} (Eqn 13-5)						
P_{FM}			0.588			0.593
v_{12} (pcph)			2,264			2,843
v_3 (pcph)			1,585			1,952
v_{34} (pcph)						
v_{12a} (pcph)			2,264			2,843
v_{R12a} (pcph)			2,689			3,374
Merge Speed Index			0.36			0.41
Merge Area Speed			56.7			55.6
Outer Lanes Volume			1,585			1,952
Outer Lanes Speed			61.1			59.8
Segment Speed			58.3			57.1
Merge v/c ratio			0.58			0.73
Merge Density			23.9			28.1
Merge LOS			C			D

Location	19	20	21	22	23	24



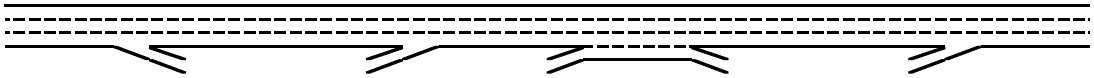
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)	4,795					
Up Ramp L_{EQ}						
Down Ramp L_{EQ}	661					
P_{FD} (Eqn 13-9)	0.596					
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}	0.596					
v_{12} (pcph)	3,245					
v_3 (pcph)	1,550					
v_{34} (pcph)						
v_{12a} (pcph)	3,245					
Diverge Speed Index	0.38					
Diverge Area Speed	56.2					
Outer Lanes Volume	1,550					
Outer Lanes Speed	69.2					
Segment Speed	59.8					
Diverge v/c ratio	0.74					
Diverge Density	30.4					
Diverge LOS	D					
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)				157		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to Off Flow (pcph)				168		
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)				1,413		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to ML Flow (pcph)				1,510		

Location	19	20	21	22	23	24



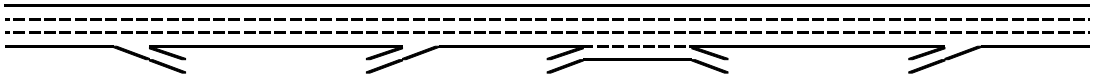
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)				923		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
ML to Off Flow (pcph)				1,001		
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)				3,097		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
GP to GP Flow (pcph)				3,358		

Location	19	20	21	22	23	24



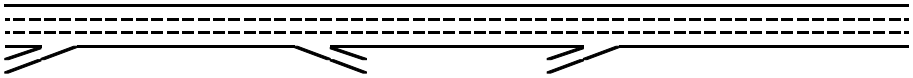
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Weave Segment Operations						
Weave Type				One-sided		
Weave Length				2,140		
Segment Lanes				4		
Weave Lanes				2		
Weave Flow (pcph)				2,510		
Non-Weave Flow				3,526		
Segment Flow				6,036		
Max Weave Length				6,860		
Length Check				OK		
Ideal Weave Capacity				1,989		
f_{HV}				0.975		
f_P				0.996		
Capacity Condition 1				7,727		
Capacity Condition 2				5,605		
Weave v/c ratio				1.05		
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.74	0.55	0.58	1.05	0.68	0.73
Segment Density	30.4	19.7	23.9	-	24.8	28.1
Segment LOS	D	C	C	F	C	D
Over Capacity				Weave		

Location	25	26	27	28	29



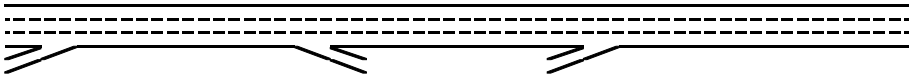
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segment					
Type	Merge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	1,500	2,830	1,500	750
Accel Length	580			590	
Decel Length		140			
Mainline Volume	5,010	5,810	4,760	4,760	5,500
On Ramp Volume	800			740	
Off Ramp Volume		1,050			
Express Lane Volume					
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP					
GP Volume (vph)	5,810	5,810	4,760	5,500	5,500
PHF	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	6,177	6,177	5,061	5,847	5,847
GP Flow (pcphpl)	2,059	2,059	1,687	1,949	1,949
Calculate Speed in General Purpose Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calculated FFS					
Measured FFS					
FFS Curve	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.88	0.88	0.72	0.83	0.83
Speed (mph)	58.8	58.8	63.8	60.7	60.7
Density (pcphpl)	35.0	35.0	26.4	32.1	32.1
LOS	D	D	D	D	D
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)	5,326	6,177		5,061	
GP_{IN} Cap (pcph)	7,050	7,050		7,050	
GP_{IN} v/c ratio	0.76	0.88		0.72	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	6,177	5,061		5,847	
GP_{OUT} Cap (pcph)	7,050	7,050		7,050	
GP_{OUT} v/c ratio	0.88	0.72		0.83	

Location	25	26	27	28	29



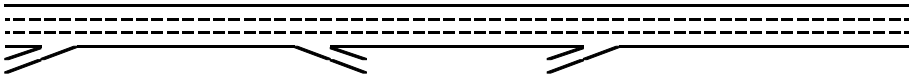
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)					
PHF					
Express Lanes	0	0	0	0	0
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P					
EL Flow (pcph)					
EL Flow (pcphpl)					
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS					
FFS					
	io				
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio					
Calculate On Ramp Flow Rate					
On Volume (vph)	800			740	
PHF	0.95			0.95	
Total Lanes	1			1	
Terrain	Level			Level	
Grade %	0.0%			0.0%	
Grade Length (mi)	0.00			0.00	
Truck & Bus %	2.0%			2.0%	
RV %	0.0%			0.0%	
E_T	1.5			1.5	
E_R	1.2			1.2	
f_{HV}	0.990			0.990	
f_P	1.00			1.00	
On Flow (pcph)	851			787	
On Flow (pcphpl)	851			787	
Calculate On Ramp Roadway Operations					
On Ramp Type	Right			Right	
On Ramp Speed (mph)	45			45	
On Ramp Cap (pcph)	2,100			2,100	
On Ramp v/c ratio	0.41			0.37	

Location	25	26	27	28	29



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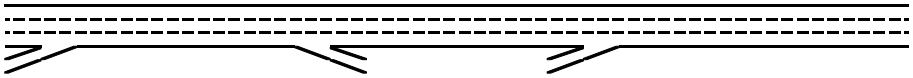
<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flow Rate					
Off Volume (vph)		1,050			
PHF		0.95			
Total Lanes		1			
Terrain		Level			
Grade %		0.0%			
Grade Length (mi)		0.00			
Truck & Bus %		2.0%			
RV %		0.0%			
E_T		1.5			
E_R		1.2			
f_{HV}		0.990			
f_P		1.00			
Off Flow (pcph)		1,116			
Off Flow (pcphpl)		1,116			
Calculate Off Ramp Roadway Operations					
Off Ramp Type		Right			
Off Ramp Speed		45			
Off Ramp Cap (pcph)		2,100			
Off Ramp v/c ratio		0.53			
Determine Adjacent Ramp for Three-Lane Mainline					
Up Type	On	On		Off	
Up Distance	1,180	3,000		2,830	
Up Flow (pcph)	532	851		1,116	
Down Type	Off	On		No	
Down Distance	3,000	2,830			
Down Flow (pcph)	1,116	787			
Calculate Merge Influence Area Operations					
Effective v_P (pcph)	5,326			5,061	
Up Ramp L_{EQ}	1,531			1,465	
Down Ramp L_{EQ}	6,503				
P_{FM} (Eqn 13-3)	0.594			0.594	
P_{FM} (Eqn 13-4)				0.680	
P_{FM} (Eqn 13-5)	0.646				
P_{FM}	0.646			0.594	
v_{12} (pcph)	3,443			3,006	
v_3 (pcph)	1,883			2,055	
v_{34} (pcph)					
v_{12a} (pcph)	3,443			3,006	
v_{R12a} (pcph)	4,294			3,793	
Merge Speed Index	0.55			0.44	
Merge Area Speed	52.2			54.9	
Outer Lanes Volume	1,883			2,055	
Outer Lanes Speed	60.0			59.4	
Segment Speed	54.4			56.4	
Merge v/c ratio	0.93			0.82	
Merge Density	34.9			31.0	
Merge LOS	D			D	

Location	25	26	27	28	29



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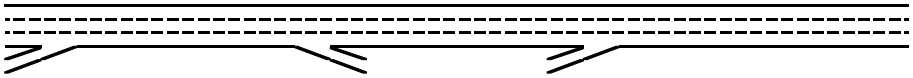
<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)		6,177			
Up Ramp L_{EQ}		6,633			
Down Ramp L_{EQ}		1,456			
P_{FD} (Eqn 13-9)		0.554			
P_{FD} (Eqn 13-10)		0.554			
P_{FD} (Eqn 13-11)					
P_{FD}		0.554			
v_{12} (pcph)		3,921			
v_3 (pcph)		2,256			
v_{34} (pcph)					
v_{12a} (pcph)		3,921			
Diverge Speed Index		0.40			
Diverge Area Speed		55.8			
Outer Lanes Volume		2,256			
Outer Lanes Speed		66.4			
Segment Speed		59.3			
Diverge v/c ratio		0.89			
Diverge Density		36.7			
Diverge LOS		E			
Calculate On Ramp to Off Ramp Flow Rate for Wea					
On to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to Off Flow (pcph)					
Calculate On Ramp to Mainline Flow Rate for Weav					
On to ML Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to ML Flow (pcph)					

Location	25	26	27	28	29



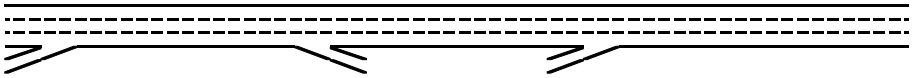
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to Off Ramp Flow Rate for Weav					
ML to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
ML to Off Flow (pcph)					
Calculate General Purpose Lanes to General Purpo					
GP to GP Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
GP to GP Flow (pcph)					

Location	25	26	27	28	29



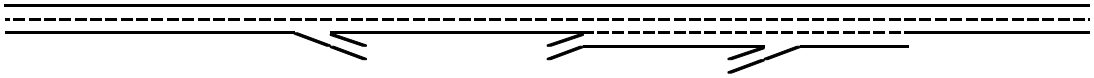
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segment Operations					
Weave Type					
Weave Length					
Segment Lanes					
Weave Lanes					
Weave Flow (pcph)					
Non-Weave Flow					
Segment Flow					
Max Weave Length					
Length Check					
Ideal Weave Capacity					
f_{HV}					
f_P					
Capacity Condition 1					
Capacity Condition 2					
Weave v/c ratio					
Interchange Density					
Lane Changes On to ML					
Lane Changes ML to Off					
Lane Changes On to Off					
Min Lane Change Rate					
Weave LC Rate					
Non-Weave LC Rate 1					
Non-Weave LC Rate 2					
Non-Weave LC Rate 3					
Segment LC Rate					
Weave Intensity Factor					
Weave Speed					
Non-Weave Speed					
Segment Speed					
Weave Density					
Weave LOS					
Summarize Segment Operations					
Segment v/c ratio	0.93	0.89	0.72	0.82	0.83
Segment Density	34.9	36.7	26.4	31.0	32.1
Segment LOS	D	E	D	D	D
Over Capacity					

Location	1	2	3	4	5	6



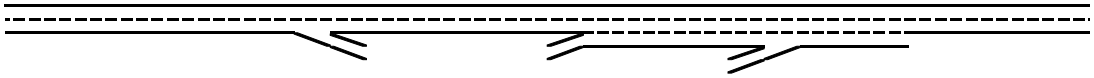
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Define Freeway Segment						
Type	Basic	Diverge	Basic	Basic	Merge	Basic
Length (ft)	8,330	1,500	1,800	1,000	1,500	870
Accel Length					720	
Decel Length		150				
Mainline Volume	1,800	1,800	1,360	1,360	2,510	2,720
On Ramp Volume				1,150	210	
Off Ramp Volume		440				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	1,800	1,800	1,360	2,510	2,720	2,720
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	3	3	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	1,914	1,914	1,446	2,669	2,892	2,892
GP Flow (pcphpl)	957	957	723	890	964	1,446
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.41	0.41	0.31	0.38	0.41	0.62
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	14.7	14.7	11.1	13.7	14.8	22.3
LOS	B	B	B	B	B	C
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)		1,914		1,446	2,669	
GP_{IN} Cap (pcph)		4,700		4,700	7,050	
GP_{IN} v/c ratio		0.41		0.31	0.38	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)		1,446			2,892	
GP_{OUT} Cap (pcph)		4,700			7,050	
GP_{OUT} v/c ratio		0.31			0.41	

Location	1	2	3	4	5	6



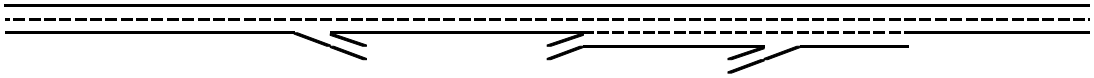
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)				1,150	210	
PHF				0.95	0.95	
Total Lanes				1	1	
Terrain				Level	Level	
Grade %				0.0%	0.0%	
Grade Length (mi)				0.00	0.00	
Truck & Bus %				2.0%	2.0%	
RV %				0.0%	0.0%	
E_T				1.5	1.5	
E_R				1.2	1.2	
f_{HV}				0.990	0.990	
f_P				1.00	1.00	
On Flow (pcph)				1,223	223	
On Flow (pcphpl)				1,223	223	
Calculate On Ramp Roadway Operations						
On Ramp Type				Right	Right	
On Ramp Speed (mph)				25	45	
On Ramp Cap (pcph)				1,900	2,100	
On Ramp v/c ratio				0.64	0.11	

Location	1	2	3	4	5	6



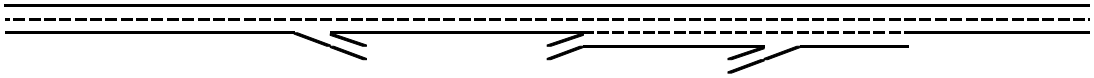
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Off Ramp Flow Rate						
Off Volume (vph)		440				
PHF		0.95				
Total Lanes		1				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		468				
Off Flow (pcphpl)		468				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		2,100				
Off Ramp v/c ratio		0.22				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type					On	
Up Distance					1,000	
Up Flow (pcph)					1,223	
Down Type					No	
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)					2,669	
Up Ramp L_{EQ}					890	
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)					0.598	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}					0.598	
v_{12} (pcph)					1,595	
v_3 (pcph)					1,074	
v_{34} (pcph)						
v_{12a} (pcph)					1,595	
v_{R12a} (pcph)					1,818	
Merge Speed Index					0.28	
Merge Area Speed					58.6	
Outer Lanes Volume					1,074	
Outer Lanes Speed					62.9	
Segment Speed					60.1	
Merge v/c ratio					0.40	
Merge Density					15.0	
Merge LOS					B	

Location	1	2	3	4	5	6



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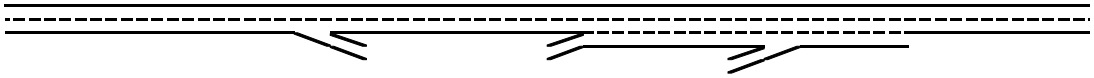
<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)		1,914				
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)		0.691				
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}		1.000				
v_{12} (pcph)		1,914				
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)		1,914				
Diverge Speed Index		0.34				
Diverge Area Speed		57.2				
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed		57.2				
Diverge v/c ratio		0.43				
Diverge Density		19.4				
Diverge LOS		B				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	1	2	3	4	5	6



Key

<> Express Lane (HOV)

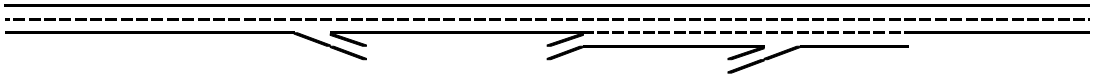
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 Cumulative No Project
Time Period: 2035 PM Peak Hour

Location	1	2	3	4	5	6



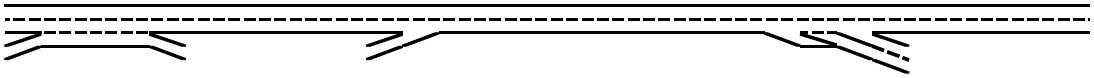
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.41	0.43	0.31	0.38	0.40	0.62
Segment Density	14.7	19.4	11.1	13.7	15.0	22.3
Segment LOS	B	B	B	B	B	C
Over Capacity						

Location	7	8	9	10	11	12



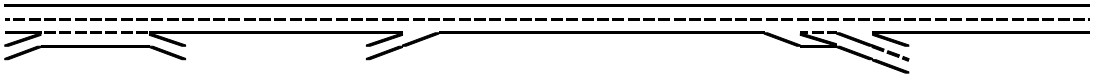
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Basic	Diverge	Basic
Length (ft)	3,050	1,120	1,500	2,210	1,500	1,830
Accel Length			450			
Decel Length					1,500	
Mainline Volume	2,720	3,260	3,260	4,110	4,110	3,150
On Ramp Volume	1,060		850			
Off Ramp Volume	520				960	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,780	3,260	4,110	4,110	4,110	3,150
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,019	3,466	4,370	4,370	4,370	3,349
GP Flow (pcphpl)	1,340	1,733	2,185	2,185	2,185	1,674
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.57	0.74	0.93	0.93	0.93	0.71
Speed (mph)	65.0	63.4	56.3	56.3	56.3	63.9
Density (pcphpl)	20.6	27.3	38.8	38.8	38.8	26.2
LOS	C	D	E	E	E	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	2,886		3,466		4,370	
GP_{IN} Cap (pcph)	4,700		4,700		4,700	
GP_{IN} v/c ratio	0.61		0.74		0.93	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,466		4,370		3,349	
GP_{OUT} Cap (pcph)	4,700		4,700		4,700	
GP_{OUT} v/c ratio	0.74		0.93		0.71	

Location	7	8	9	10	11	12



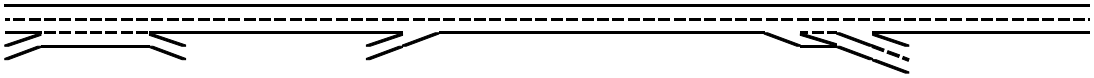
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5			
E_R	1.2	1.2	1.2			
f_{HV}	0.990	0.990	0.990			
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	1,060		850			
PHF	0.95		0.95			
Total Lanes	1		1			
Terrain	Level		Level			
Grade %	0.0%		0.0%			
Grade Length (mi)	0.00		0.00			
Truck & Bus %	3.0%		2.0%			
RV %	0.0%		0.0%			
E_T	1.5		1.5			
E_R	1.2		1.2			
f_{HV}	0.985		0.990			
f_P	1.00		1.00			
On Flow (pcph)	1,133		904			
On Flow (pcphpl)	1,133		904			
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right			
On Ramp Speed (mph)	45		25			
On Ramp Cap (pcph)	2,100		1,900			
On Ramp v/c ratio	0.54		0.48			

Location	7	8	9	10	11	12



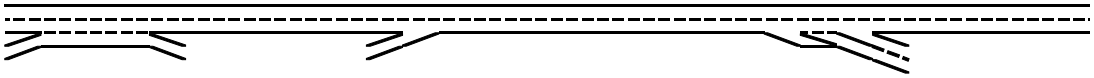
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	520				960	
PHF	0.95				0.95	
Total Lanes	1				2	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	2.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.990				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	553				1,021	
Off Flow (pcphpl)	553				510	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				4,200	
Off Ramp v/c ratio	0.26				0.24	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,466			
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.590			
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000			
v_{12} (pcph)			3,466			
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			3,466			
v_{R12a} (pcph)			4,370			
Merge Speed Index			0.61			
Merge Area Speed			51.0			
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed			51.0			
Merge v/c ratio			0.95			
Merge Density			36.3			
Merge LOS			E			

Location	7	8	9	10	11	12



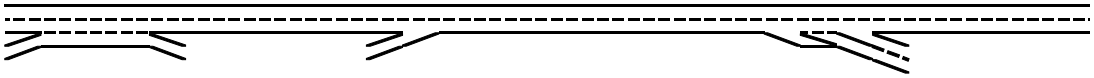
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					4,370	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.604	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					4,370	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					4,370	
Diverge Speed Index					0.39	
Diverge Area Speed					56.0	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed					56.0	
Diverge v/c ratio					0.99	
Diverge Density					28.3	
Diverge LOS					D	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	106					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	113					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	954					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	1,019					

Location	7	8	9	10	11	12



Key

<> Express Lane (HOV)

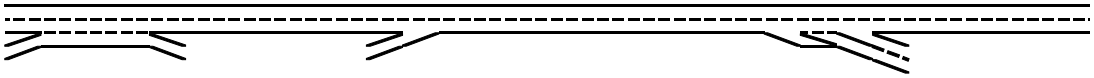
No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	414					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
ML to Off Flow (pcph)	492					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	2,306					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
GP to GP Flow (pcph)	2,740					

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 Cumulative No Project
Time Period: 2035 PM Peak Hour

Location	7	8	9	10	11	12



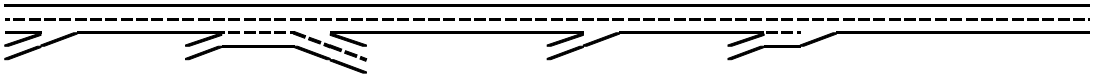
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,050					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	1,511					
Non-Weave Flow	2,853					
Segment Flow	4,365					
Max Weave Length	6,085					
Length Check	OK					
Ideal Weave Capacity	2,041					
f_{HV}	0.989					
f_P	0.997					
Capacity Condition 1	6,035					
Capacity Condition 2	6,830					
Weave v/c ratio	0.71					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.71	0.74	0.95	0.93	0.99	0.71
Segment Density		27.3	36.3	38.8	28.3	26.2
Segment LOS		D	E	E	D	D
Over Capacity						

Location	13	14	15	16	17	18



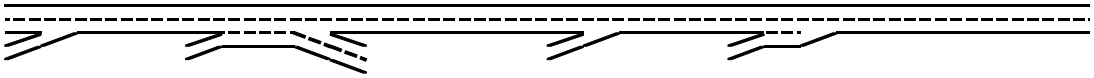
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Define Freeway Segment						
Type	Merge	Weave	Basic	Merge	Merge	Basic
Length (ft)	690	3,344	1,280	1,310	1,500	770
Accel Length	400			500	1,450	
Decel Length						
Mainline Volume	3,150	3,690	3,200	3,200	3,840	4,240
On Ramp Volume	540	280		640	400	
Off Ramp Volume		770				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,690	3,970	3,200	3,840	4,240	4,240
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	3	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,923	4,221	3,402	4,083	4,508	4,508
GP Flow (pcphpl)	1,962	1,407	1,701	2,041	2,254	2,254
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.83	0.60	0.72	0.87	0.96	0.96
Speed (mph)	60.5	65.0	63.7	59.2	54.7	54.7
Density (pcphpl)	32.4	21.6	26.7	34.5	41.2	41.2
LOS	D	C	D	D	E	E
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	3,349	3,923		3,402	4,083	
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{IN} v/c ratio	0.71	0.83		0.72	0.87	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,923	3,402		4,083	4,508	
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{OUT} v/c ratio	0.83	0.72		0.87	0.96	

Location	13	14	15	16	17	18



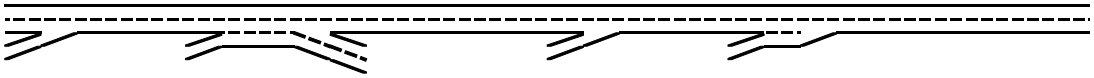
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T		1.5	1.5	1.5	1.5	
E_R		1.2	1.2	1.2	1.2	
f_{HV}		0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	540	280		640	400	
PHF	0.95	0.95		0.95	0.95	
Total Lanes	1	1		1	1	
Terrain	Level	Level		Level	Level	
Grade %	0.0%	0.0%		0.0%	0.0%	
Grade Length (mi)	0.00	0.00		0.00	0.00	
Truck & Bus %	2.0%	2.0%		2.0%	2.0%	
RV %	0.0%	0.0%		0.0%	0.0%	
E_T	1.5	1.5		1.5	1.5	
E_R	1.2	1.2		1.2	1.2	
f_{HV}	0.990	0.990		0.990	0.990	
f_P	1.00	1.00		1.00	1.00	
On Flow (pcph)	574	298		680	425	
On Flow (pcphpl)	574	298		680	425	
Calculate On Ramp Roadway Operations						
On Ramp Type	Right	Right		Right	Right	
On Ramp Speed (mph)	25	45		25	45	
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100	
On Ramp v/c ratio	0.30	0.14		0.36	0.20	

Location	13	14	15	16	17	18



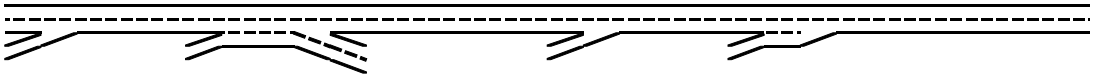
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)		770				
PHF		0.95				
Total Lanes		2				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		819				
Off Flow (pcphpl)		409				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		4,200				
Off Ramp v/c ratio		0.19				
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)	3,349			3,402	4,083	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)	0.589			0.592	0.618	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}	1.000			1.000	1.000	
v_{12} (pcph)	3,349			3,402	4,083	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)	3,349			3,402	4,083	
v_{R12a} (pcph)	3,923			4,083	4,508	
Merge Speed Index	0.50			0.53	0.54	
Merge Area Speed	53.5			52.9	52.5	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed	53.5			52.9	52.5	
Merge v/c ratio	0.85			0.89	0.98	
Merge Density	33.3			33.9	31.3	
Merge LOS	D			D	D	

Location	13	14	15	16	17	18



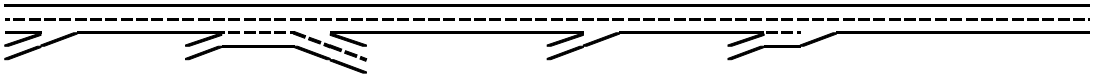
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)						
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)						
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}						
v_{12} (pcph)						
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)						
Diverge Speed Index						
Diverge Area Speed						
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio						
Diverge Density						
Diverge LOS						
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)		50				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to Off Flow (pcph)		53				
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)		230				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to ML Flow (pcph)		246				

Location	13	14	15	16	17	18



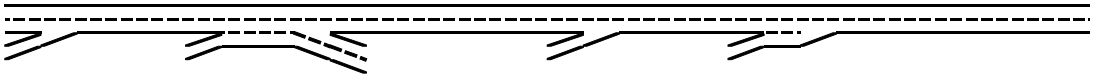
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)		720				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
ML to Off Flow (pcph)		781				
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)		2,970				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
GP to GP Flow (pcph)		3,220				

Location	13	14	15	16	17	18



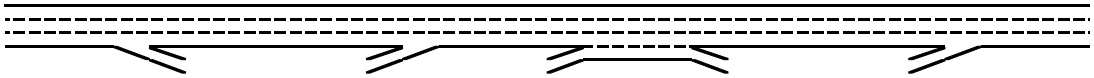
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Weave Segment Operations						
Weave Type		One-sided				
Weave Length		2,344				
Segment Lanes		3				
Weave Lanes		2				
Weave Flow (pcph)		1,026				
Non-Weave Flow		3,274				
Segment Flow		4,300				
Max Weave Length		4,936				
Length Check		OK				
Ideal Weave Capacity		2,152				
f_{HV}		0.972				
f_P		0.999				
Capacity Condition 1		6,268				
Capacity Condition 2		9,764				
Weave v/c ratio		0.67				
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.85	0.67	0.72	0.89	0.98	0.96
Segment Density	33.3		26.7	33.9	31.3	41.2
Segment LOS	D		D	D	D	E
Over Capacity						

Location	19	20	21	22	23	24



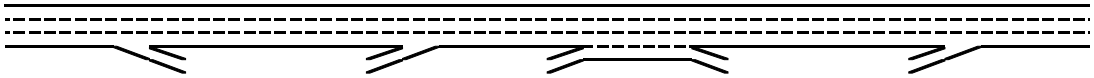
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Define Freeway Segment						
Type	Diverge	Basic	Merge	Weave	Basic	Merge
Length (ft)	1,500	1,680	1,000	3,140	1,610	1,180
Accel Length			380			550
Decel Length	200					
Mainline Volume	4,240	3,490	3,490	3,830	4,650	4,650
On Ramp Volume			340	1,710		620
Off Ramp Volume	750			890		
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,240	3,490	3,830	5,540	4,650	5,270
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	4	3	3
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	4.2%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.979	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,508	3,710	4,072	5,954	4,944	5,603
GP Flow (pcphpl)	1,503	1,237	1,357	1,489	1,648	1,868
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.64	0.53	0.58	0.63	0.70	0.79
Speed (mph)	64.9	65.0	65.0	64.9	64.1	61.9
Density (pcphpl)	23.2	19.0	20.9	22.9	25.7	30.2
LOS	C	C	C	C	C	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,508		3,710	4,136		4,940
GP_{IN} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{IN} v/c ratio	0.64		0.53	0.59		0.70
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,710		4,072	5,008		5,603
GP_{OUT} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{OUT} v/c ratio	0.53		0.58	0.71		0.79

Location	19	20	21	22	23	24



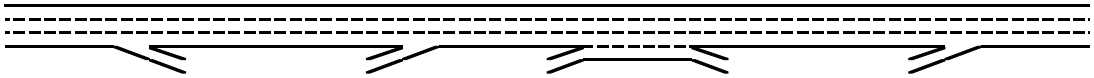
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)			340	1,710		620
PHF			0.95	0.95		0.95
Total Lanes			1	1		1
Terrain			Level	Level		Level
Grade %			0.0%	0.0%		0.0%
Grade Length (mi)			0.00	0.00		0.00
Truck & Bus %			2.0%	2.0%		3.0%
RV %			0.0%	0.0%		0.0%
E_T			1.5	1.5		1.5
E_R			1.2	1.2		1.2
f_{HV}			0.990	0.990		0.985
f_P			1.00	1.00		1.00
On Flow (pcph)			361	1,818		662
On Flow (pcphpl)			361	1,818		662
Calculate On Ramp Roadway Operations						
On Ramp Type			Right	Right		Right
On Ramp Speed (mph)			25	45		25
On Ramp Cap (pcph)			1,900	2,100		1,900
On Ramp v/c ratio			0.19	0.87		0.35

Location	19	20	21	22	23	24



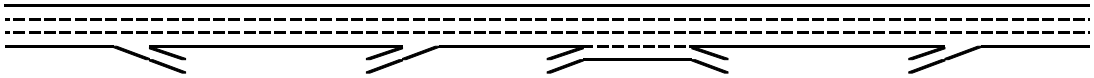
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	750			890		
PHF	0.95			0.95		
Total Lanes	1			1		
Terrain	Level			Level		
Grade %	0.0%			0.0%		
Grade Length (mi)	0.00			0.00		
Truck & Bus %	2.0%			2.0%		
RV %	0.0%			0.0%		
E_T	1.5			1.5		
E_R	1.2			1.2		
f_{HV}	0.990			0.990		
f_P	1.00			1.00		
Off Flow (pcph)	797			946		
Off Flow (pcphpl)	797			946		
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right			Right		
Off Ramp Speed	45			45		
Off Ramp Cap (pcph)	2,100			2,100		
Off Ramp v/c ratio	0.38			0.45		
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type	No		Off			No
Up Distance			1,680			
Up Flow (pcph)			797			
Down Type	On		No			On
Down Distance	1,500					1,180
Down Flow (pcph)	361					951
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,710			4,940
Up Ramp L_{EQ}			-55			
Down Ramp L_{EQ}						5,645
P_{FM} (Eqn 13-3)			0.588			0.593
P_{FM} (Eqn 13-4)			0.697			
P_{FM} (Eqn 13-5)						
P_{FM}			0.588			0.593
v_{12} (pcph)			2,182			2,929
v_3 (pcph)			1,528			2,011
v_{34} (pcph)						
v_{12a} (pcph)			2,182			2,929
v_{R12a} (pcph)			2,544			3,592
Merge Speed Index			0.35			0.44
Merge Area Speed			56.9			55.0
Outer Lanes Volume			1,528			2,011
Outer Lanes Speed			61.3			59.6
Segment Speed			58.5			56.6
Merge v/c ratio			0.55			0.78
Merge Density			22.8			29.7
Merge LOS			C			D

Location	19	20	21	22	23	24



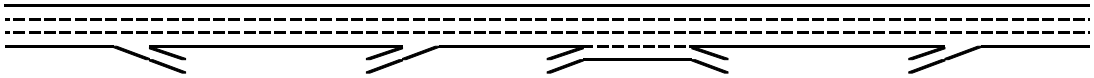
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)	4,508					
Up Ramp L_{EQ}						
Down Ramp L_{EQ}	508					
P_{FD} (Eqn 13-9)	0.611					
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}	0.611					
v_{12} (pcph)	3,063					
v_3 (pcph)	1,445					
v_{34} (pcph)						
v_{12a} (pcph)	3,063					
Diverge Speed Index	0.37					
Diverge Area Speed	56.5					
Outer Lanes Volume	1,445					
Outer Lanes Speed	69.6					
Segment Speed	60.1					
Diverge v/c ratio	0.70					
Diverge Density	28.8					
Diverge LOS	D					
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)				171		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to Off Flow (pcph)				183		
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)				1,539		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to ML Flow (pcph)				1,644		

Location	19	20	21	22	23	24



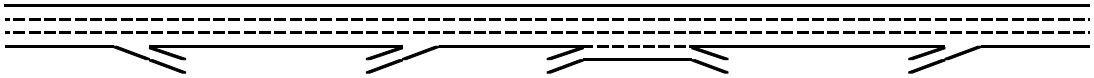
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)				719		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
ML to Off Flow (pcph)				780		
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)				3,111		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
GP to GP Flow (pcph)				3,373		

Location	19	20	21	22	23	24



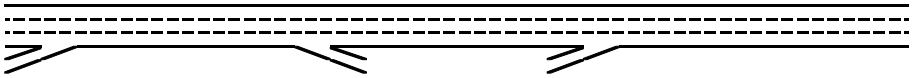
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Weave Segment Operations						
Weave Type				One-sided		
Weave Length				2,140		
Segment Lanes				4		
Weave Lanes				2		
Weave Flow (pcph)				2,424		
Non-Weave Flow				3,556		
Segment Flow				5,980		
Max Weave Length				6,741		
Length Check				OK		
Ideal Weave Capacity				1,998		
f_{HV}				0.975		
f_P				0.996		
Capacity Condition 1				7,763		
Capacity Condition 2				5,751		
Weave v/c ratio				1.01		
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.70	0.53	0.55	1.01	0.70	0.78
Segment Density	28.8	19.0	22.8	-	25.7	29.7
Segment LOS	D	C	C	F	C	D
Over Capacity				Weave		

Location	25	26	27	28	29



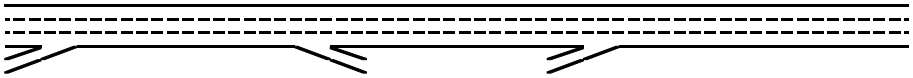
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segment					
Type	Merge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	1,500	2,830	1,500	750
Accel Length	580			590	
Decel Length		140			
Mainline Volume	5,270	6,160	5,310	5,310	6,490
On Ramp Volume	890			1,180	
Off Ramp Volume		850			
Express Lane Volume					
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP					
GP Volume (vph)	6,160	6,160	5,310	6,490	6,490
PHF	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	6,549	6,549	5,645	6,900	6,900
GP Flow (pcphpl)	2,183	2,183	1,882	2,300	2,300
Calculate Speed in General Purpose Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calculated FFS					
Measured FFS					
FFS Curve	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.93	0.93	0.80	0.98	0.98
Speed (mph)	56.3	56.3	61.7	53.5	53.5
Density (pcphpl)	38.8	38.8	30.5	43.0	43.0
LOS	E	E	D	E	E
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)	5,598	6,549		5,639	
GP_{IN} Cap (pcph)	7,050	7,050		7,050	
GP_{IN} v/c ratio	0.79	0.93		0.80	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	6,549	5,645		6,900	
GP_{OUT} Cap (pcph)	7,050	7,050		7,050	
GP_{OUT} v/c ratio	0.93	0.80		0.98	

Location	25	26	27	28	29



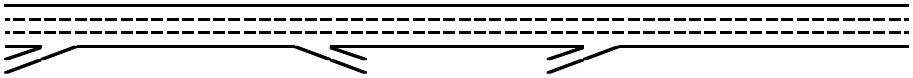
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)					
PHF					
Express Lanes	0	0	0	0	0
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P					
EL Flow (pcph)					
EL Flow (pcphpl)					
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS					
FFS					
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio					
Calculate On Ramp Flow Rate					
On Volume (vph)	890			1,180	
PHF	0.95			0.95	
Total Lanes	1			1	
Terrain	Level			Level	
Grade %	0.0%			0.0%	
Grade Length (mi)	0.00			0.00	
Truck & Bus %	3.0%			3.0%	
RV %	0.0%			0.0%	
E_T	1.5			1.5	
E_R	1.2			1.2	
f_{HV}	0.985			0.985	
f_P	1.00			1.00	
On Flow (pcph)	951			1,261	
On Flow (pcphpl)	951			1,261	
Calculate On Ramp Roadway Operations					
On Ramp Type	Right			Right	
On Ramp Speed (mph)	45			45	
On Ramp Cap (pcph)	2,100			2,100	
On Ramp v/c ratio	0.45			0.60	

Location	25	26	27	28	29



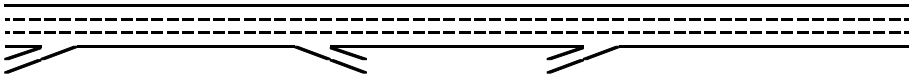
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flow Rate					
Off Volume (vph)		850			
PHF		0.95			
Total Lanes		1			
Terrain		Level			
Grade %		0.0%			
Grade Length (mi)		0.00			
Truck & Bus %		2.0%			
RV %		0.0%			
E_T		1.5			
E_R		1.2			
f_{HV}		0.990			
f_P		1.00			
Off Flow (pcph)		904			
Off Flow (pcphpl)		904			
Calculate Off Ramp Roadway Operations					
Off Ramp Type		Right			
Off Ramp Speed		45			
Off Ramp Cap (pcph)		2,100			
Off Ramp v/c ratio		0.43			
Determine Adjacent Ramp for Three-Lane Mainline					
Up Type	On	On		Off	
Up Distance	1,180	3,000		2,830	
Up Flow (pcph)	662	951		904	
Down Type	Off	On		No	
Down Distance	3,000	2,830			
Down Flow (pcph)	904	1,261			
Calculate Merge Influence Area Operations					
Effective v_P (pcph)	5,598			5,639	
Up Ramp L_{EQ}	1,610			1,690	
Down Ramp L_{EQ}	5,264				
P_{FM} (Eqn 13-3)	0.594			0.594	
P_{FM} (Eqn 13-4)				0.666	
P_{FM} (Eqn 13-5)	0.628				
P_{FM}	0.628			0.594	
v_{12} (pcph)	3,515			3,350	
v_3 (pcph)	2,083			2,289	
v_{34} (pcph)					
v_{12a} (pcph)	3,515			3,350	
v_{R12a} (pcph)	4,466			4,611	
Merge Speed Index	0.61			0.66	
Merge Area Speed	51.0			49.8	
Outer Lanes Volume	2,083			2,289	
Outer Lanes Speed	59.3			58.6	
Segment Speed	53.4			52.4	
Merge v/c ratio	0.97			1.00	
Merge Density	36.2			37.2	
Merge LOS	E			F	

Location	25	26	27	28	29



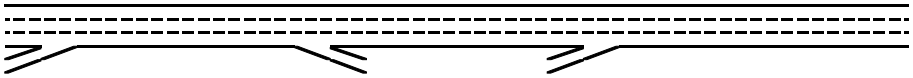
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)		6,549			
Up Ramp L_{EQ}		6,217			
Down Ramp L_{EQ}		2,077			
P_{FD} (Eqn 13-9)		0.555			
P_{FD} (Eqn 13-10)		0.555			
P_{FD} (Eqn 13-11)					
P_{FD}		0.555			
v_{12} (pcph)		4,035			
v_3 (pcph)		2,514			
v_{34} (pcph)					
v_{12a} (pcph)		4,035			
Diverge Speed Index		0.38			
Diverge Area Speed		56.3			
Outer Lanes Volume		2,514			
Outer Lanes Speed		65.4			
Segment Speed		59.5			
Diverge v/c ratio		0.92			
Diverge Density		37.7			
Diverge LOS		E			
Calculate On Ramp to Off Ramp Flow Rate for Wea					
On to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to Off Flow (pcph)					
Calculate On Ramp to Mainline Flow Rate for Weav					
On to ML Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to ML Flow (pcph)					

Location	25	26	27	28	29



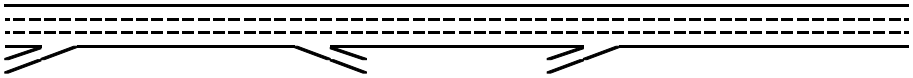
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to Off Ramp Flow Rate for Weav					
ML to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
ML to Off Flow (pcph)					
Calculate General Purpose Lanes to General Purpo					
GP to GP Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
GP to GP Flow (pcph)					

Location	25	26	27	28	29



Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segment Operations					
Weave Type					
Weave Length					
Segment Lanes					
Weave Lanes					
Weave Flow (pcph)					
Non-Weave Flow					
Segment Flow					
Max Weave Length					
Length Check					
Ideal Weave Capacity					
f_{HV}					
f_P					
Capacity Condition 1					
Capacity Condition 2					
Weave v/c ratio					
Interchange Density					
Lane Changes On to ML					
Lane Changes ML to Off					
Lane Changes On to Off					
Min Lane Change Rate					
Weave LC Rate					
Non-Weave LC Rate 1					
Non-Weave LC Rate 2					
Non-Weave LC Rate 3					
Segment LC Rate					
Weave Intensity Factor					
Weave Speed					
Non-Weave Speed					
Segment Speed					
Weave Density					
Weave LOS					
Summarize Segment Operations					
Segment v/c ratio	0.97	0.92	0.80	1.00	0.98
Segment Density	36.2	37.7	30.5	-	43.0
Segment LOS	E	E	D	F	E
Over Capacity				Merge	

Leisch Method for Weaving Analysis

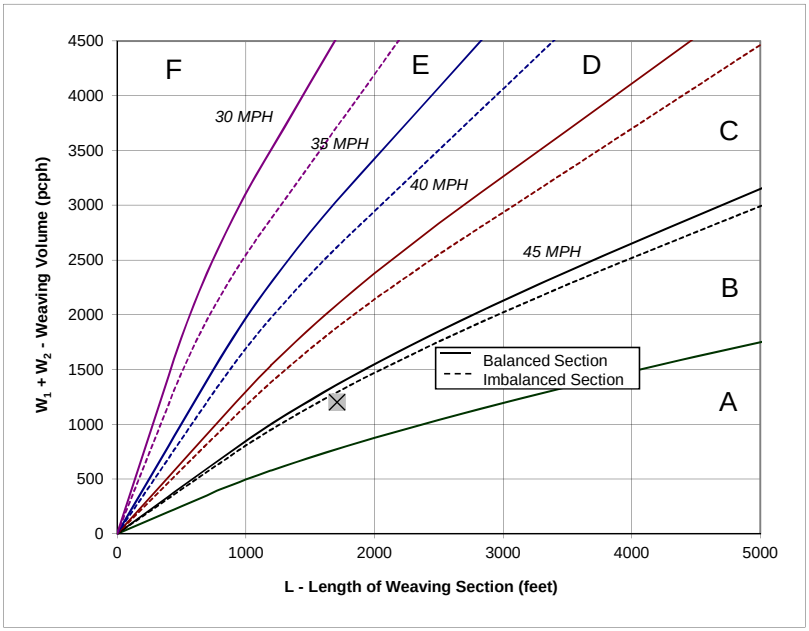
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

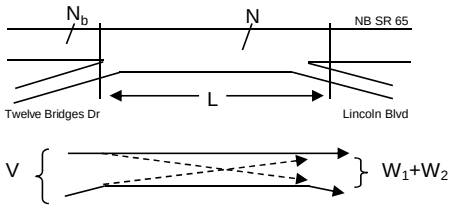
Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative No Project AM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	2,970	Volume (vph)*	418	Volume (vph)*	758
Truck Percentage	5%	Truck Percentage	7%	Truck Percentage	3%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,037	Volume (pcph)	432	Volume (pcph)	769



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 46.4
4. Weaving Intensity Factor (k) 1.77
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] 1,123
6. Level of Service (LOS) C

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

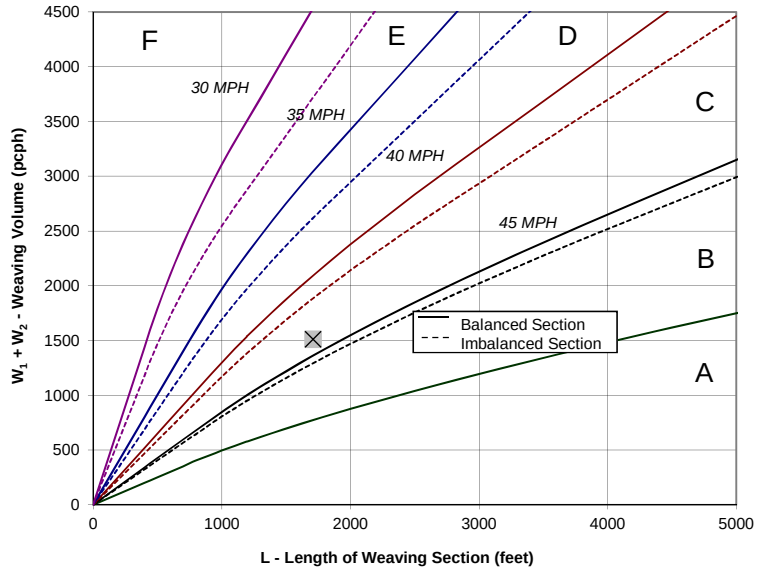
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative No Project PM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,170	Volume (vph)*	804	Volume (vph)*	694
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,232	Volume (pcph)	812	Volume (pcph)	701



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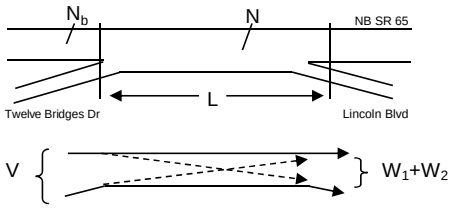


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **44.0**
4. Weaving Intensity Factor (k) **2.10**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **2,000**
6. Level of Service (LOS) **F**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

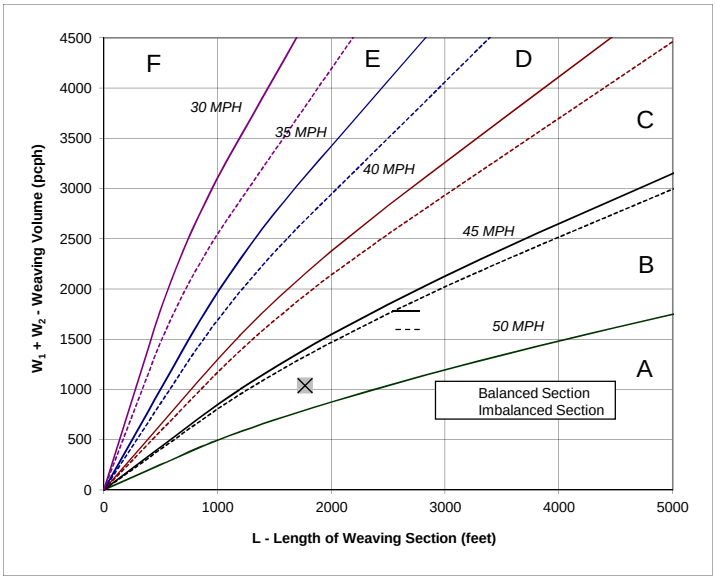
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,770

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,270	Volume (vph)*	340	Volume (vph)*	690
Truck Percentage	5%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,344	Volume (pcph)	344	Volume (pcph)	697

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative No Project AM
Freeway	NB SR 65
On-ramp	Sunset Blvd
Off-ramp	Placer Pkwy



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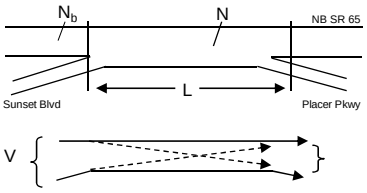


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **48.0**
4. Weaving Intensity Factor (k) **1.52**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,174**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

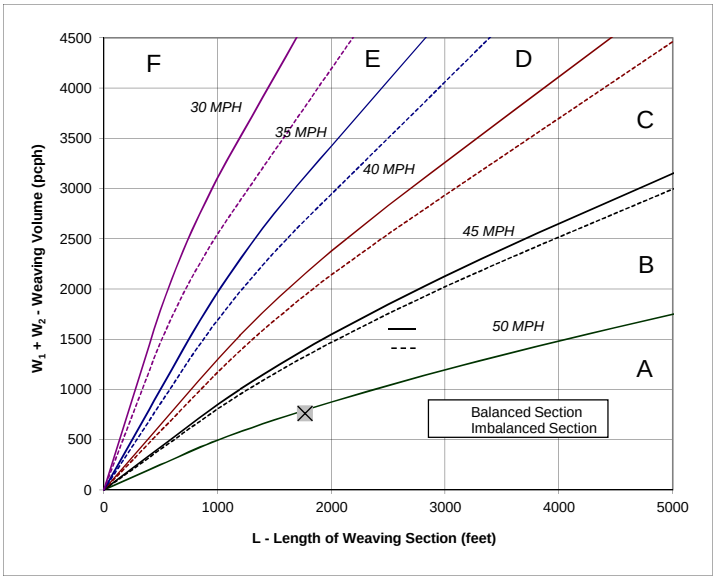
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,770

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative No Project PM
Freeway	NB SR 65
On-ramp	Sunset Blvd
Off-ramp	Placer Pkwy

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,260	Volume (vph)*	422	Volume (vph)*	332
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,311	Volume (pcph)	427	Volume (pcph)	336



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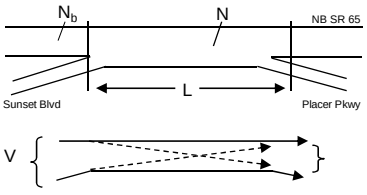


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**40 MPH** and **45 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	49.2
4. Weaving Intensity Factor (k)	1.32
5. Service Volume (SV, pcph) $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$	1,473
6. Level of Service (LOS)	D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

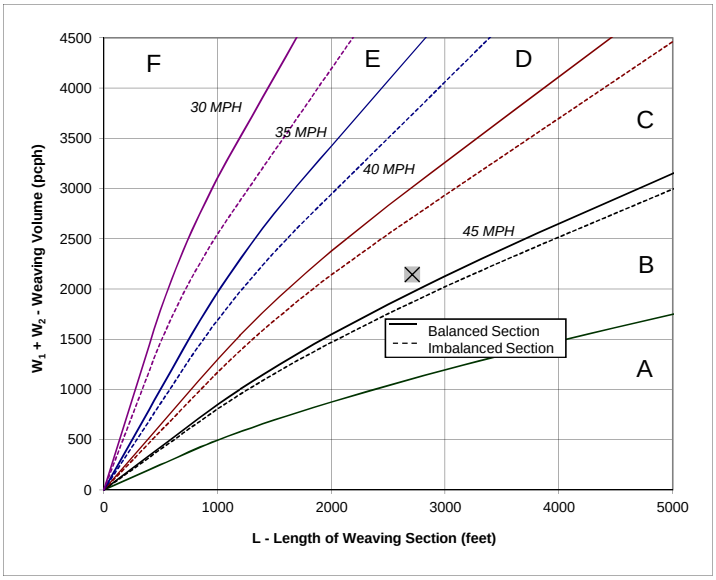
Data Input

Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,710

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative No Project AM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,540	Volume (vph)*	386	Volume (vph)*	1,736
Truck Percentage	5%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,665	Volume (pcph)	390	Volume (pcph)	1,754



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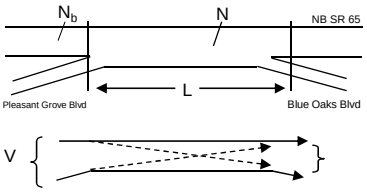


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **44.2**
4. Weaving Intensity Factor (k) **2.81**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,593**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

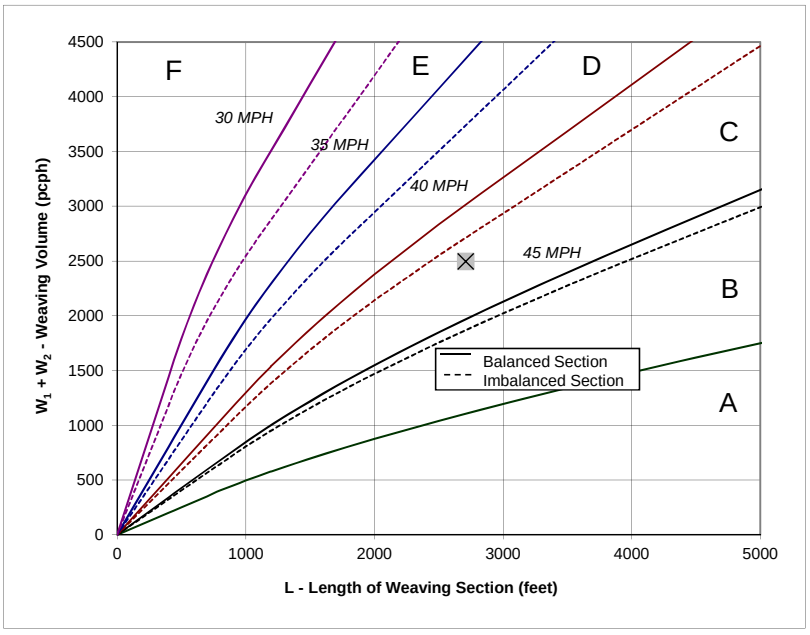
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,710

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative No Project PM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,620	Volume (vph)*	810	Volume (vph)*	1,660
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,687	Volume (pcph)	818	Volume (pcph)	1,677



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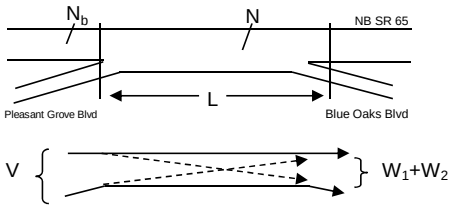


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **42.5**
4. Weaving Intensity Factor (k) **2.28**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,683**
6. Level of Service (LOS) **E**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

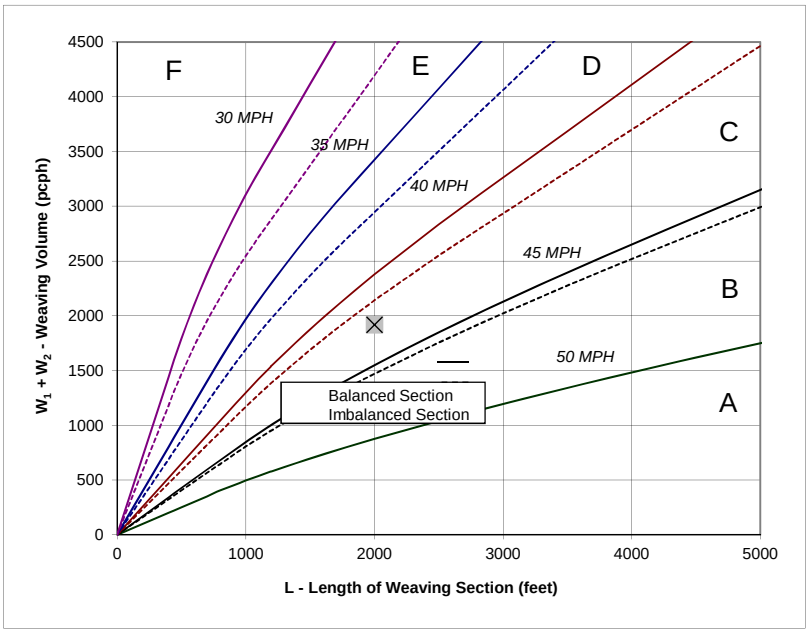
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

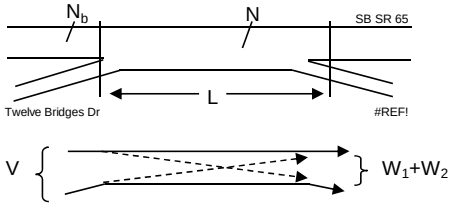
Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CNP AM
Freeway	SB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,320	Volume (vph)*	800	Volume (vph)*	1,100
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,373	Volume (pcph)	808	Volume (pcph)	1,111



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **42.8**
4. Weaving Intensity Factor (k) **2.24**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **2,126**
6. Level of Service (LOS) **F**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

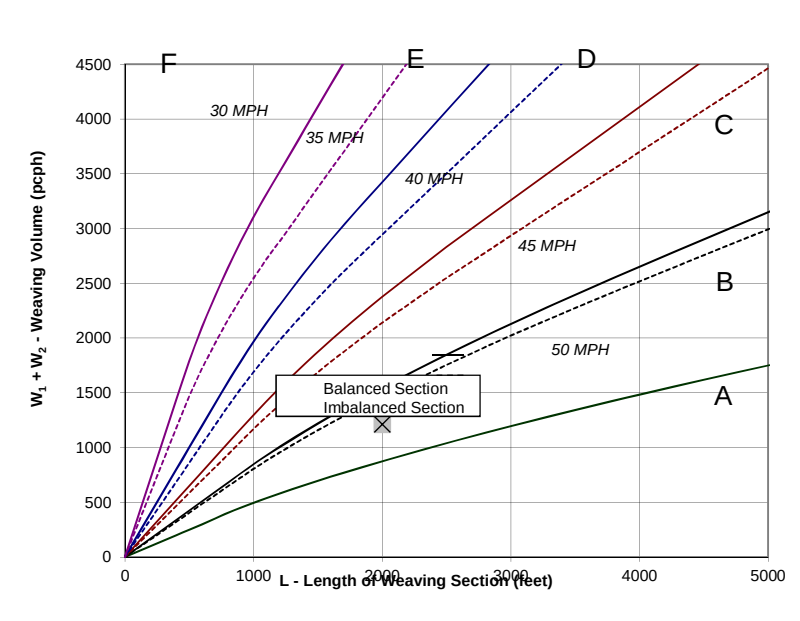
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

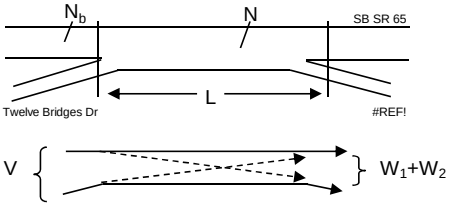
Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CNP PM
Freeway	SB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,780	Volume (vph)*	869	Volume (vph)*	329
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,818	Volume (pcph)	878	Volume (pcph)	332



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **47.5**
4. Weaving Intensity Factor (k) **1.60**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,339**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

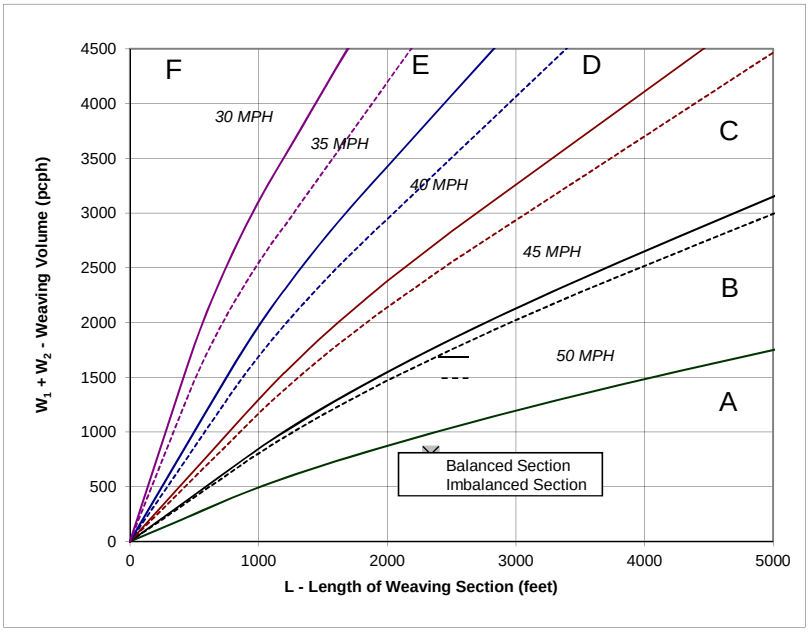
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,340

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 CNP AM
Freeway	SB SR 65
On-ramp	Placer Pkwy
Off-ramp	Sunset Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,250	Volume (vph)*	20	Volume (vph)*	760
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,293	Volume (pcph)	20	Volume (pcph)	776



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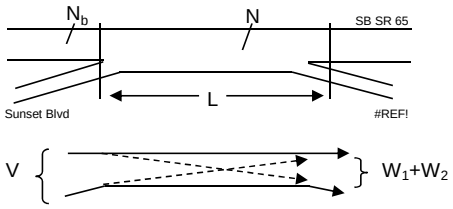


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **50.1**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,431**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

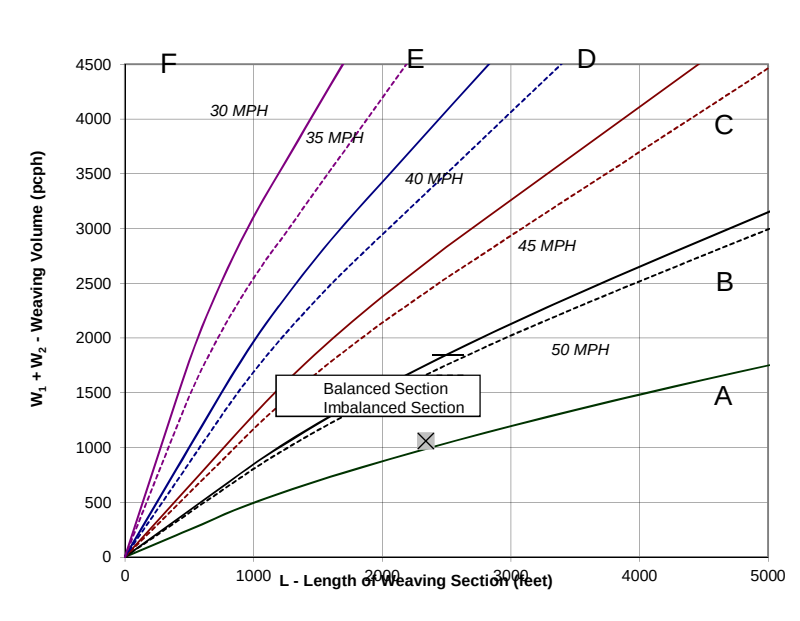
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,340

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CNP PM
Freeway	SB SR 65
On-ramp	Placer Pkwy
Off-ramp	Sunset Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,970	Volume (vph)*	280	Volume (vph)*	770
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,010	Volume (pcph)	283	Volume (pcph)	778



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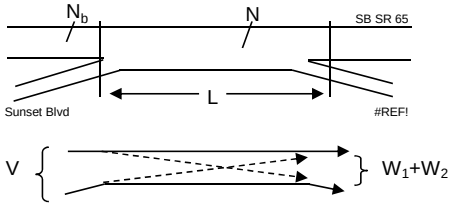


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**45 MPH** and **50 MPH**
	If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph)	49.5
4. Weaving Intensity Factor (k)	1.27
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	1,362
6. Level of Service (LOS)	D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

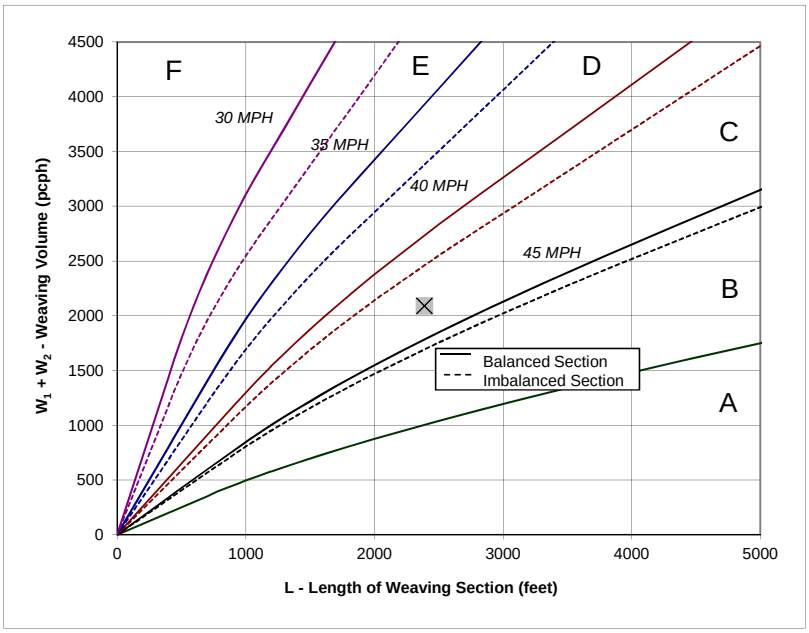
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,390

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CNP AM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,590	Volume (vph)*	1,272	Volume (vph)*	782
Truck Percentage	2%	Truck Percentage	5%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,646	Volume (pcph)	1,301	Volume (pcph)	790



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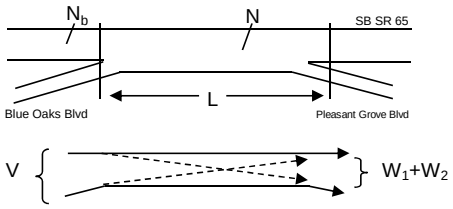


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **43.4**
4. Weaving Intensity Factor (k) **2.17**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,643**
6. Level of Service (LOS) **E**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

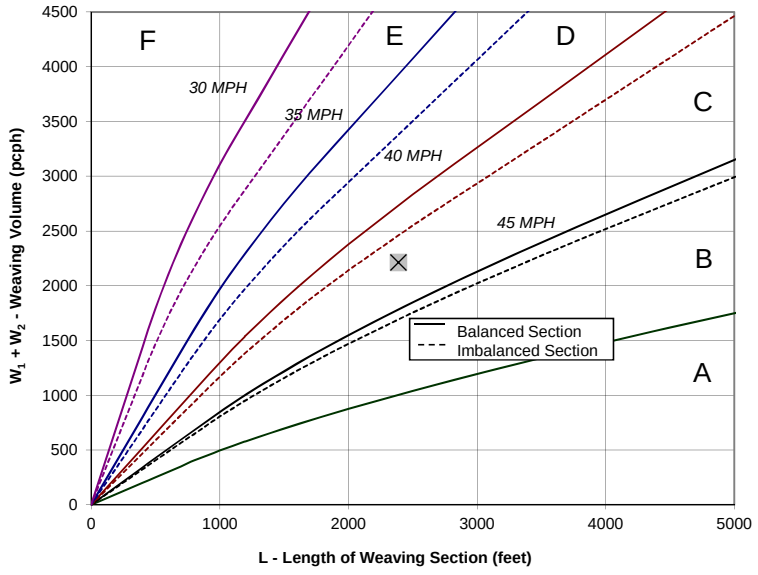
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,390

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 CNP PM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,540	Volume (vph)*	1,505	Volume (vph)*	685
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,595	Volume (pcph)	1,520	Volume (pcph)	692



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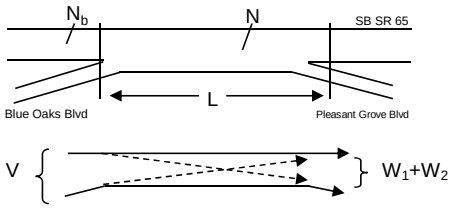


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **42.8**
4. Weaving Intensity Factor (k) **2.24**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,614**
6. Level of Service (LOS) **E**

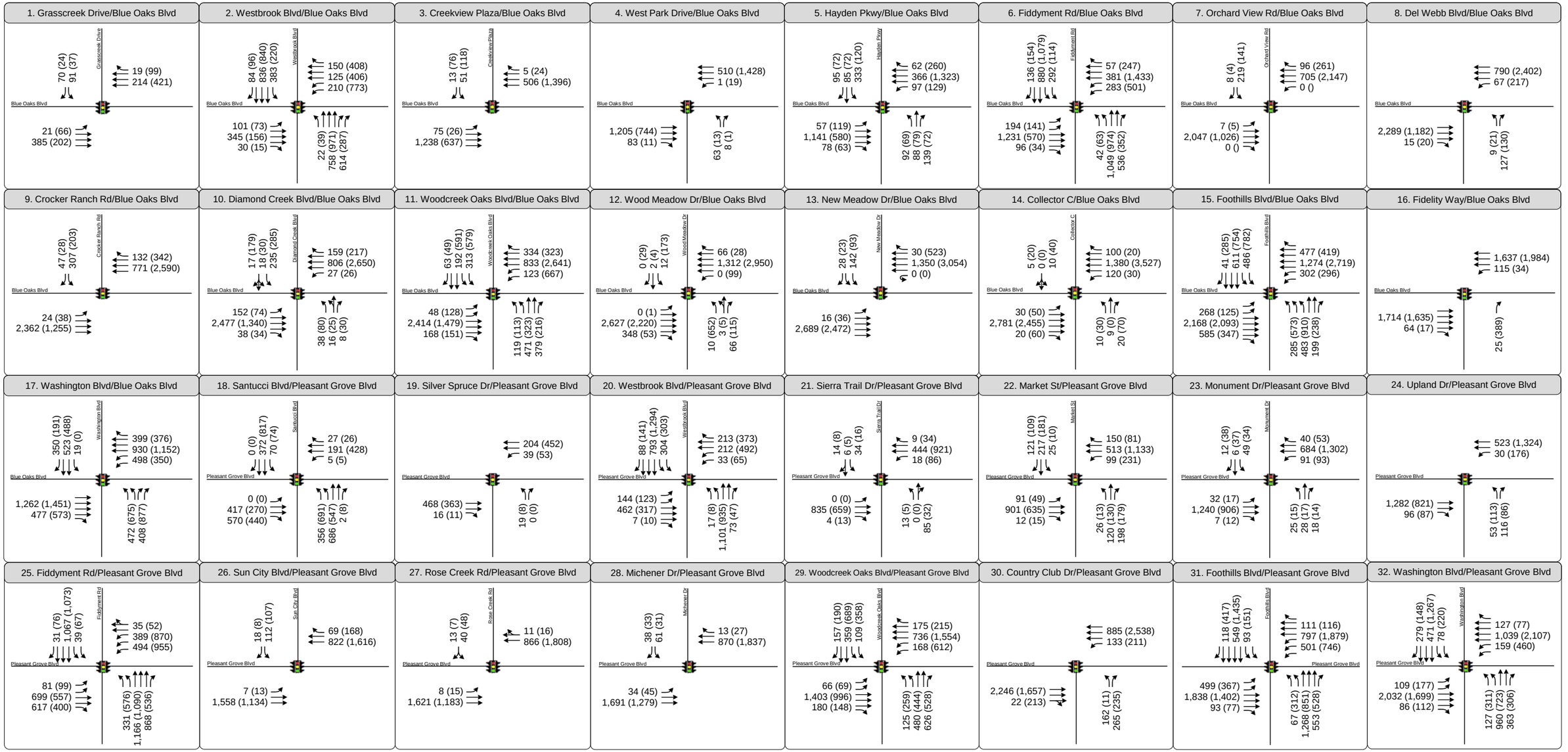
The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983.

2035 CUMULATIVE PLUS PROJECT CONDITIONS

CITY OF ROSEVILLE INTERSECTIONS



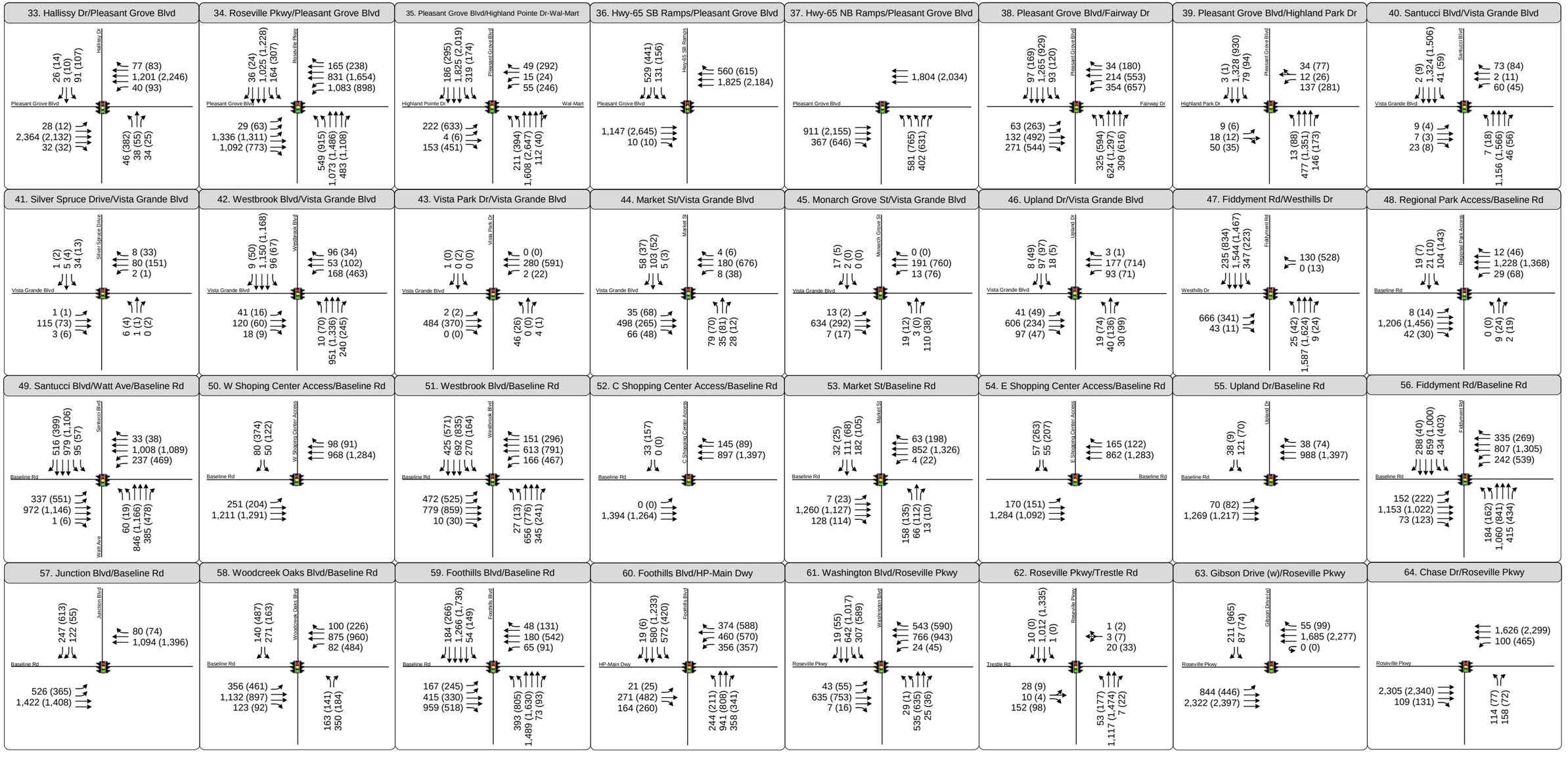
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure D-2a

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative Plus Project Conditions



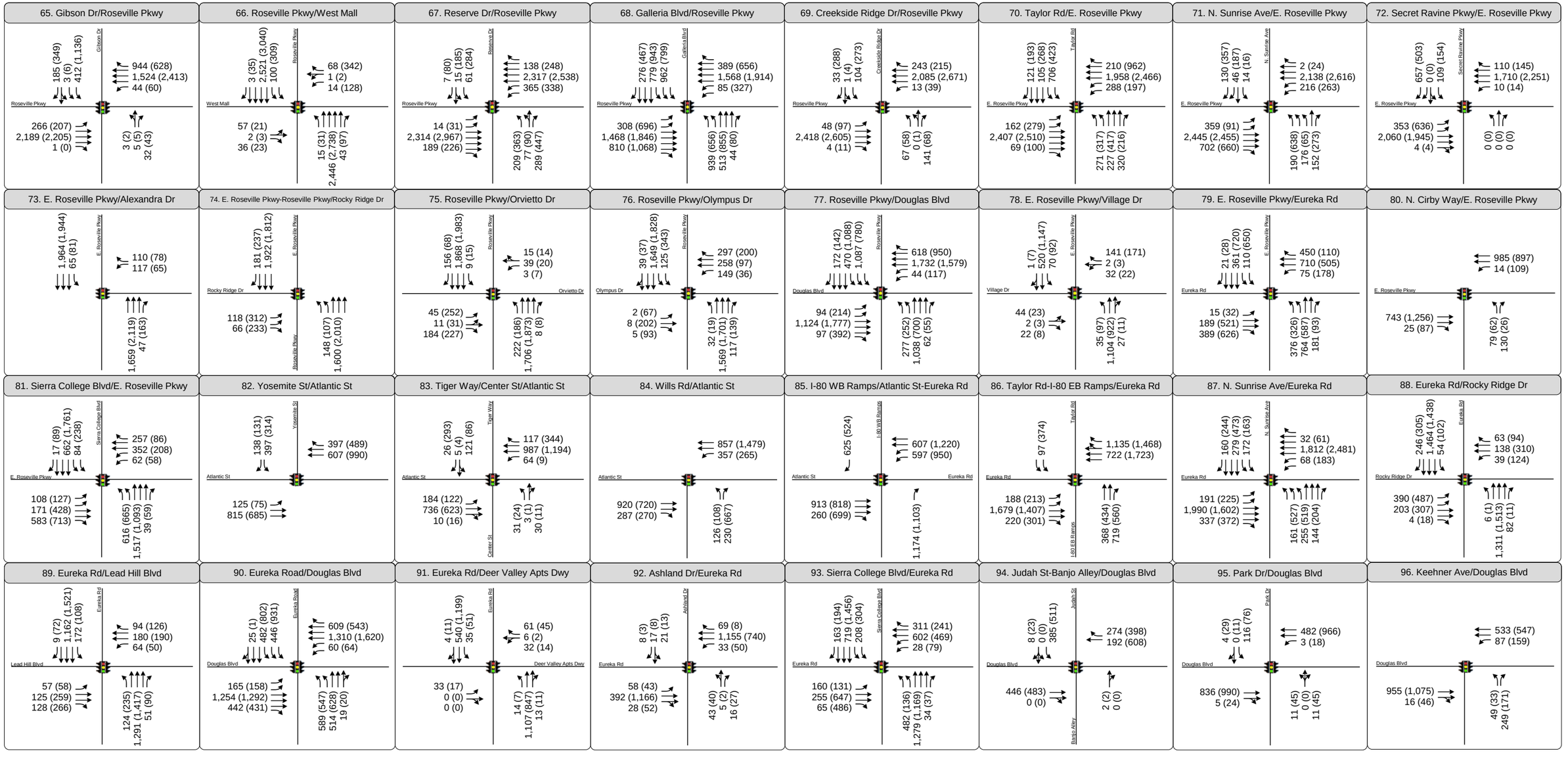
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure D-2b

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative Plus Project Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure D-2c

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative Plus Project Conditions

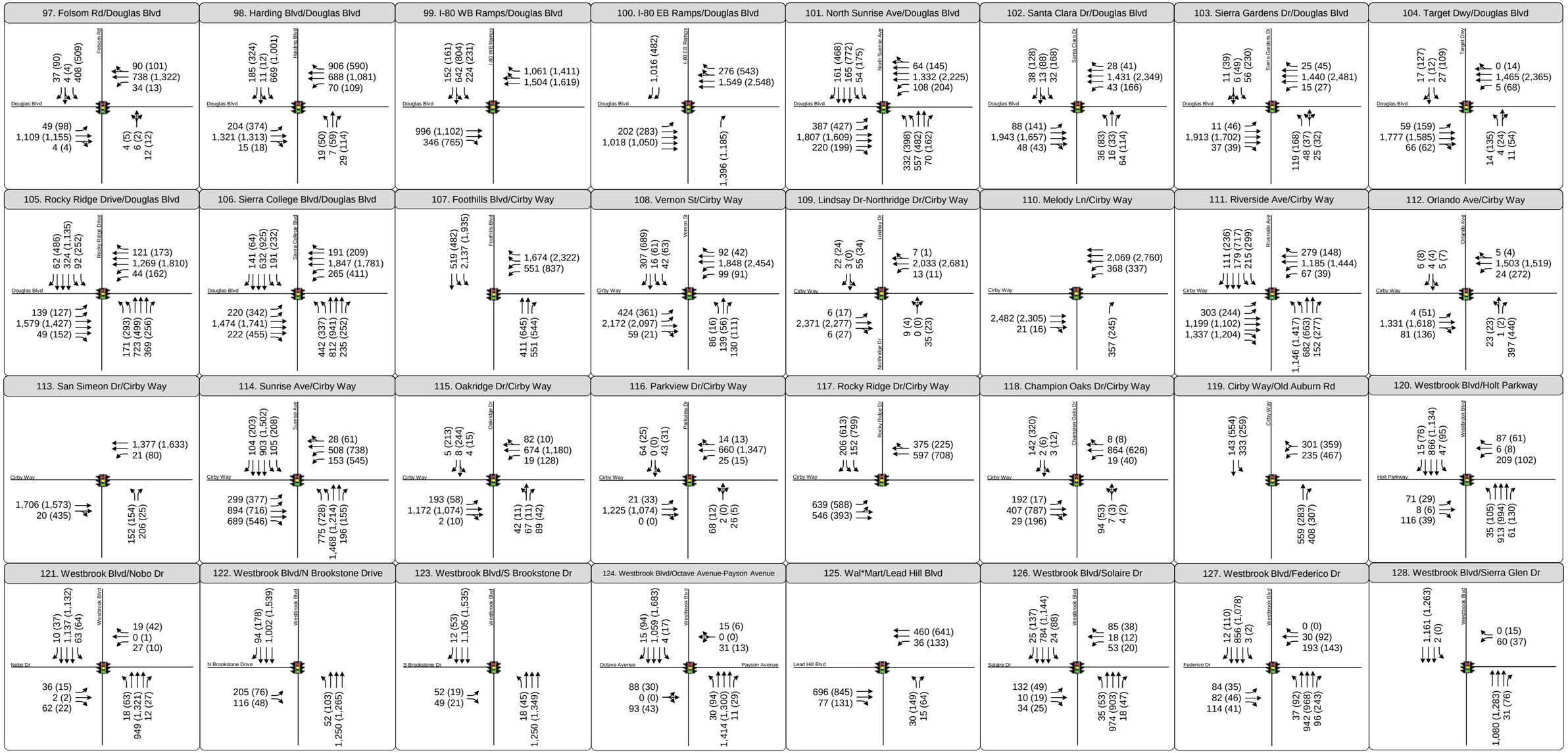


Figure D-2d

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative Plus Project Conditions

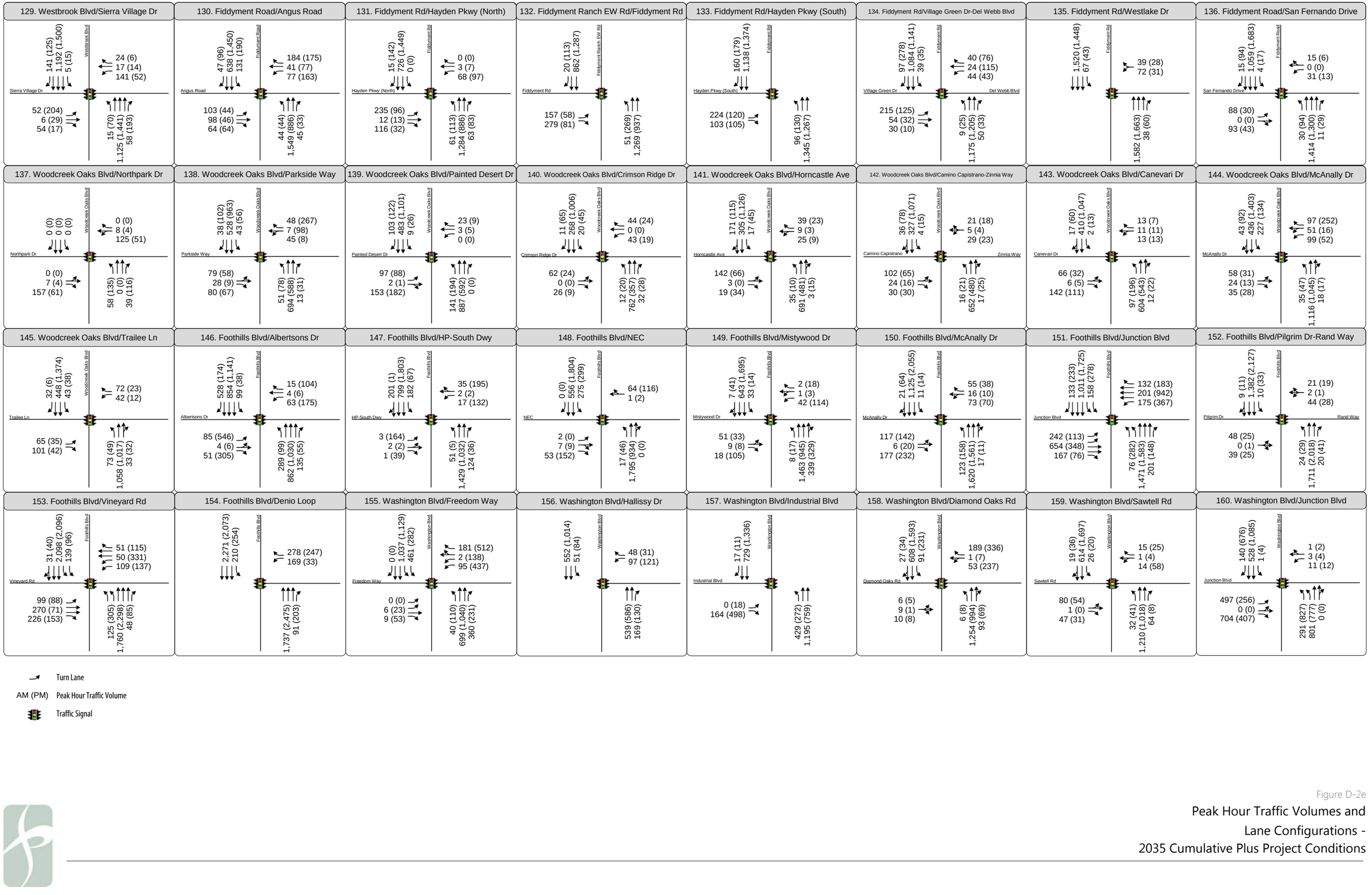
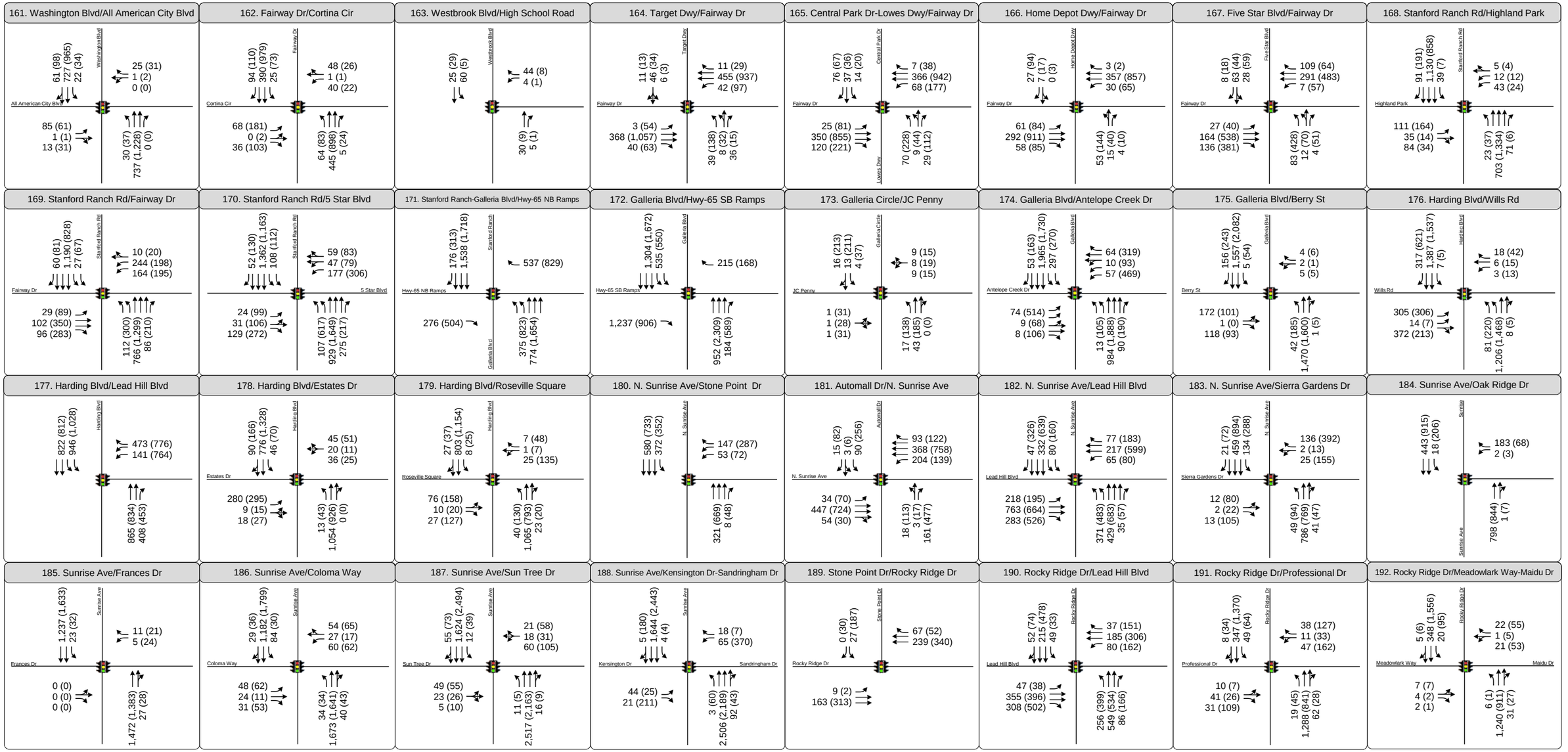


Figure D-2e

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative Plus Project Conditions



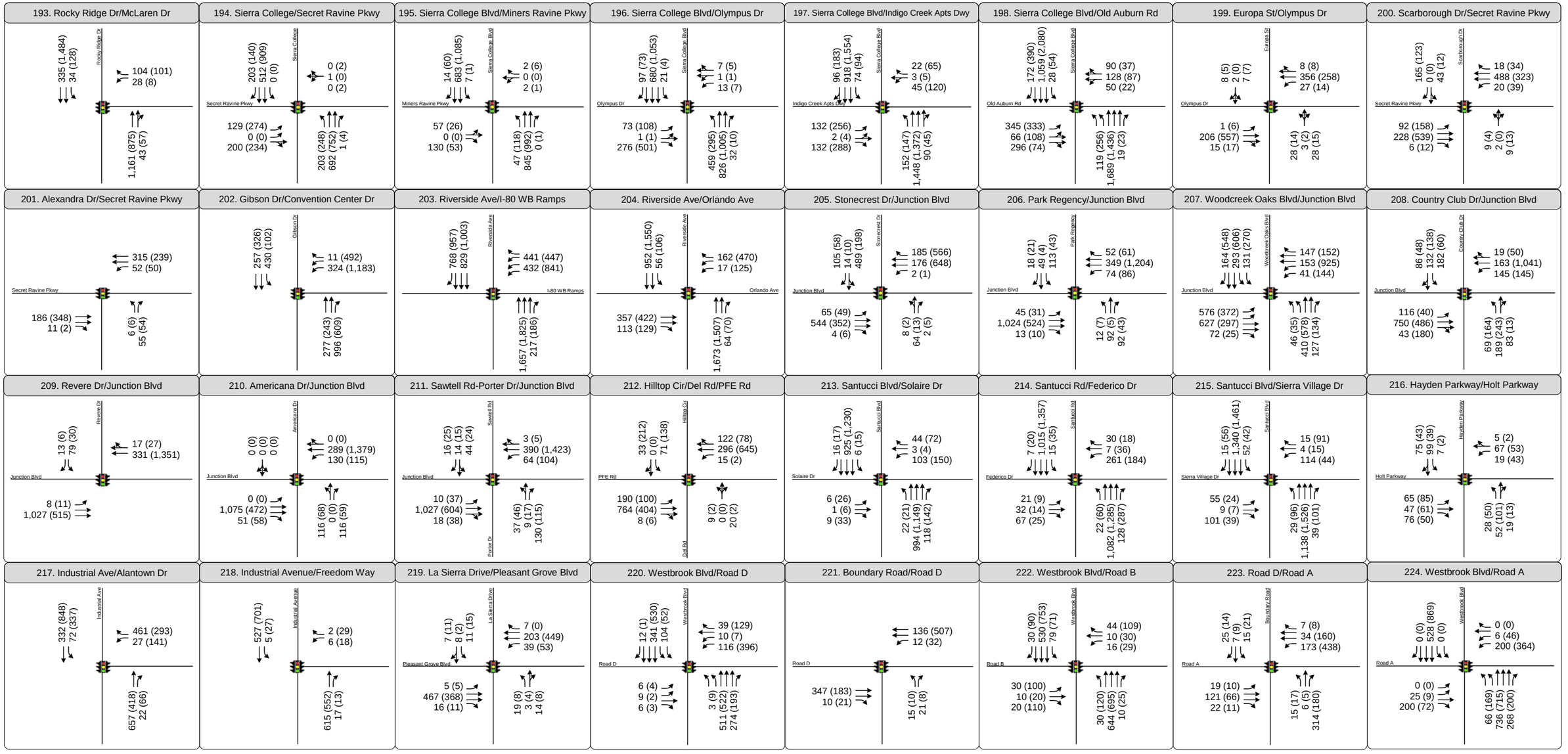
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure D-2f

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative Plus Project Conditions



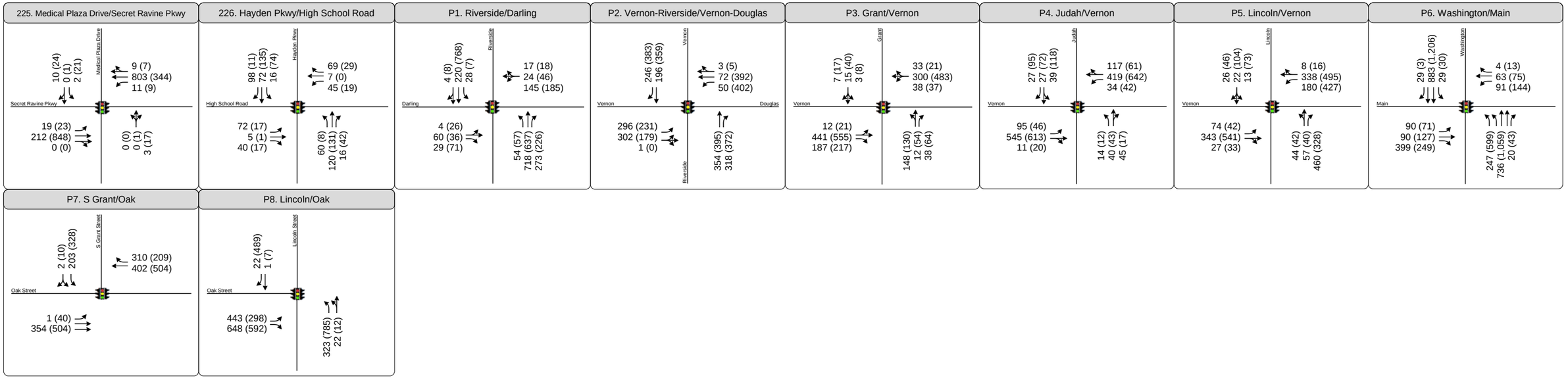
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure D-2g

Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative Plus Project Conditions



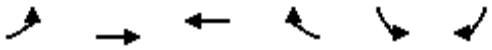
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure D-2h

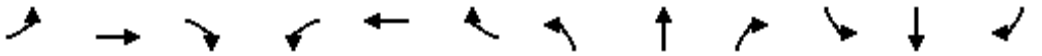
Peak Hour Traffic Volumes and Lane Configurations - 2035 Cumulative Plus Project Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	21	385	214	19	91	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1548	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	405	225	20	96	74
RTOR Reduction (vph)	0	0	0	16	0	36
Lane Group Flow (vph)	22	405	225	4	96	38
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	14.6	9.9	9.9	23.7	23.7
Effective Green, g (s)	0.7	14.6	9.9	9.9	23.7	23.7
Actuated g/C Ratio	0.02	0.32	0.21	0.21	0.51	0.51
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	27	1603	1087	331	906	800
v/s Ratio Prot	c0.01	c0.08	0.04		c0.05	
v/s Ratio Perm				0.00		0.02
v/c Ratio	0.81	0.25	0.21	0.01	0.11	0.05
Uniform Delay, d1	22.7	11.8	15.0	14.3	5.8	5.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	95.3	0.1	0.1	0.0	0.2	0.1
Delay (s)	118.0	11.9	15.1	14.4	6.1	5.8
Level of Service	F	B	B	B	A	A
Approach Delay (s)		17.3	15.0		5.9	
Approach LOS		B	B		A	

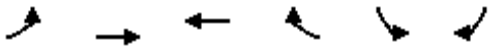
Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	345	30	210	125	150	22	758	614	383	836	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.91	0.88	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	106	363	32	221	132	158	23	798	646	403	880	88
RTOR Reduction (vph)	0	0	26	0	0	128	0	0	357	0	0	41
Lane Group Flow (vph)	106	363	6	221	132	30	23	798	289	403	880	47
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.1	13.6	13.6	8.1	14.6	14.6	1.8	27.5	27.5	18.3	44.0	44.0
Effective Green, g (s)	8.1	15.6	14.6	9.1	16.6	15.6	2.8	29.5	28.5	19.3	46.0	45.0
Actuated g/C Ratio	0.10	0.19	0.17	0.11	0.20	0.19	0.03	0.35	0.34	0.23	0.55	0.54
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	172	950	277	374	1011	296	59	1796	951	409	2801	853
v/s Ratio Prot	0.06	c0.07		c0.06	0.03		0.01	c0.16		c0.23	0.17	
v/s Ratio Perm			0.00			0.02			0.10			0.03
v/c Ratio	0.62	0.38	0.02	0.59	0.13	0.10	0.39	0.44	0.30	0.99	0.31	0.06
Uniform Delay, d1	36.2	29.7	28.5	35.4	27.5	28.1	39.5	20.7	20.2	32.0	10.2	9.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.4	0.3	0.0	2.5	0.1	0.1	4.2	0.2	0.2	40.3	0.1	0.0
Delay (s)	42.6	30.0	28.6	37.9	27.6	28.3	43.7	20.9	20.4	72.2	10.2	9.2
Level of Service	D	C	C	D	C	C	D	C	C	E	B	A
Approach Delay (s)		32.6			32.3			21.0			28.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	75	1238	506	5	51	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1547	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1547	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	1303	533	5	54	14
RTOR Reduction (vph)	0	0	0	3	0	8
Lane Group Flow (vph)	79	1303	533	2	54	6
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.4	24.1	16.7	16.7	22.2	22.2
Effective Green, g (s)	3.4	24.1	16.7	16.7	22.2	22.2
Actuated g/C Ratio	0.06	0.44	0.31	0.31	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	111	2257	1564	476	724	639
v/s Ratio Prot	0.04	c0.26	0.10		c0.03	
v/s Ratio Perm				0.00		0.00
v/c Ratio	0.71	0.58	0.34	0.00	0.07	0.01
Uniform Delay, d1	25.0	11.3	14.5	13.0	9.8	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.3	0.4	0.1	0.0	0.2	0.0
Delay (s)	44.3	11.7	14.7	13.0	10.0	9.5
Level of Service	D	B	B	B	A	A
Approach Delay (s)		13.5	14.7		9.9	
Approach LOS		B	B		A	

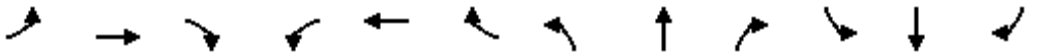
Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1205	83	1	510	63	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1547	1770	5085	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1547	1770	5085	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1268	87	1	537	66	8
RTOR Reduction (vph)	0	55	0	0	0	5
Lane Group Flow (vph)	1268	32	1	537	66	3
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	20.1	20.1	0.7	24.8	21.2	21.2
Effective Green, g (s)	20.1	20.1	0.7	24.8	21.2	21.2
Actuated g/C Ratio	0.37	0.37	0.01	0.46	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1893	576	23	2335	695	613
v/s Ratio Prot	c0.25		0.00	c0.11	c0.04	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.67	0.06	0.04	0.23	0.09	0.01
Uniform Delay, d1	14.2	10.9	26.3	8.8	10.3	10.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	0.8	0.1	0.3	0.0
Delay (s)	15.1	10.9	27.1	8.9	10.6	10.0
Level of Service	B	B	C	A	B	A
Approach Delay (s)	14.8			8.9	10.6	
Approach LOS	B			A	B	

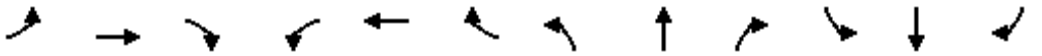
Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	1141	78	97	366	62	92	88	139	333	85	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	1201	82	102	385	65	97	93	146	351	89	100
RTOR Reduction (vph)	0	0	50	0	0	42	0	0	123	0	0	68
Lane Group Flow (vph)	60	1201	33	102	385	23	97	93	23	351	89	32
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	31.3	31.3	7.1	32.4	32.4	7.0	14.0	14.0	22.6	29.6	29.6
Effective Green, g (s)	7.0	33.3	32.3	8.1	34.4	33.4	8.0	15.0	15.0	23.6	30.6	30.6
Actuated g/C Ratio	0.07	0.35	0.34	0.09	0.36	0.35	0.08	0.16	0.16	0.25	0.32	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	130	1782	538	151	1841	557	149	294	250	440	600	510
v/s Ratio Prot	0.03	c0.24		c0.06	0.08		0.05	c0.05		c0.20	0.05	
v/s Ratio Perm			0.02			0.01			0.01			0.02
v/c Ratio	0.46	0.67	0.06	0.68	0.21	0.04	0.65	0.32	0.09	0.80	0.15	0.06
Uniform Delay, d1	42.2	26.2	21.1	42.2	20.9	20.3	42.1	35.5	34.2	33.5	22.9	22.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	1.0	0.0	11.3	0.1	0.0	9.8	0.6	0.2	9.7	0.1	0.1
Delay (s)	44.8	27.3	21.2	53.5	21.0	20.3	51.9	36.1	34.3	43.2	23.0	22.3
Level of Service	D	C	C	D	C	C	D	D	C	D	C	C
Approach Delay (s)		27.7			26.9			39.9			36.0	
Approach LOS		C			C			D			D	

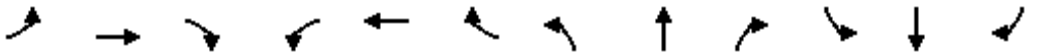
Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	1231	96	283	381	57	42	1049	536	292	880	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1553	3433	5085	1554	3433	3539	1558	3433	3539	1558
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1553	3433	5085	1554	3433	3539	1558	3433	3539	1558
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	204	1296	101	298	401	60	44	1104	564	307	926	143
RTOR Reduction (vph)	0	0	74	0	0	50	0	0	174	0	0	86
Lane Group Flow (vph)	204	1296	27	298	401	10	44	1104	390	307	926	57
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.0	25.0	25.0	9.0	15.0	15.0	5.4	33.8	33.8	9.0	37.4	37.4
Effective Green, g (s)	20.0	28.0	26.0	10.0	18.0	16.0	6.4	37.2	34.8	10.0	40.8	38.4
Actuated g/C Ratio	0.21	0.29	0.27	0.10	0.19	0.17	0.07	0.38	0.36	0.10	0.42	0.40
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	709	1471	417	355	946	257	227	1360	560	355	1492	618
v/s Ratio Prot	0.06	c0.25		c0.09	0.08		0.01	c0.31		c0.09	0.26	
v/s Ratio Perm			0.02			0.01			0.25			0.04
v/c Ratio	0.29	0.88	0.07	0.84	0.42	0.04	0.19	0.81	0.70	0.86	0.62	0.09
Uniform Delay, d1	32.4	32.8	26.4	42.6	34.8	33.9	42.8	26.7	26.5	42.7	21.9	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	6.7	0.1	15.2	0.4	0.1	0.2	4.3	4.6	18.6	1.1	0.1
Delay (s)	32.5	39.5	26.4	57.8	35.3	34.0	42.9	30.9	31.1	61.3	23.0	18.4
Level of Service	C	D	C	E	D	C	D	C	C	E	C	B
Approach Delay (s)		37.8			44.0			31.3			31.1	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	34.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	11.6
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

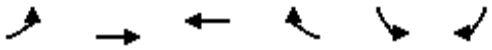


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2047	0	0	705	96	0	0	0	219	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Util. Factor	1.00	0.91			0.91	1.00				1.00		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				1770		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	2155	0	0	742	101	0	0	0	231	0	8
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	0	6
Lane Group Flow (vph)	7	2155	0	0	742	64	0	0	0	231	0	2
Turn Type	Prot		Perm	Perm		Perm				Prot		custom
Protected Phases	7	4			8					6		
Permitted Phases			4	8		8						6
Actuated Green, G (s)	1.1	48.5			43.4	43.4				15.1		15.1
Effective Green, g (s)	2.1	51.5			46.4	46.4				16.1		16.1
Actuated g/C Ratio	0.03	0.70			0.63	0.63				0.22		0.22
Clearance Time (s)	4.0	6.0			6.0	6.0				4.0		4.0
Vehicle Extension (s)	2.0	4.1			4.1	4.1				2.0		2.0
Lane Grp Cap (vph)	51	3558			3206	998				387		346
v/s Ratio Prot	0.00	c0.42			0.15					c0.13		
v/s Ratio Perm						0.04						0.00
v/c Ratio	0.14	0.61			0.23	0.06				0.60		0.01
Uniform Delay, d1	34.9	5.8			5.9	5.2				25.8		22.5
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	0.4	0.4			0.1	0.0				1.7		0.0
Delay (s)	35.3	6.1			5.9	5.3				27.5		22.5
Level of Service	D	A			A	A				C		C
Approach Delay (s)		6.2			5.9			0.0			27.3	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	73.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2289	15	67	790	9	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2409	16	71	832	9	134
RTOR Reduction (vph)	0	5	0	0	0	112
Lane Group Flow (vph)	2409	11	71	832	9	22
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	54.4	54.4	7.2	65.6	13.5	13.5
Effective Green, g (s)	57.4	57.4	8.2	68.6	14.5	14.5
Actuated g/C Ratio	0.64	0.64	0.09	0.76	0.16	0.16
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	3243	1010	161	3876	285	255
v/s Ratio Prot	c0.47		c0.04	0.16	0.01	
v/s Ratio Perm		0.01				c0.01
v/c Ratio	0.74	0.01	0.44	0.21	0.03	0.08
Uniform Delay, d1	11.2	5.9	38.7	3.0	31.8	32.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0	0.7	0.0	0.0	0.1
Delay (s)	12.2	6.0	39.4	3.1	31.8	32.2
Level of Service	B	A	D	A	C	C
Approach Delay (s)	12.2			5.9	32.1	
Approach LOS	B			A	C	

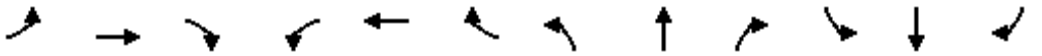
Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	24	2362	771	132	307	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1537	1770	1558
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1537	1770	1558
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	2486	812	139	323	49
RTOR Reduction (vph)	0	0	0	57	0	37
Lane Group Flow (vph)	25	2486	812	82	323	12
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.2	50.8	44.6	44.6	19.0	19.0
Effective Green, g (s)	3.2	53.8	47.6	47.6	20.0	20.0
Actuated g/C Ratio	0.04	0.67	0.59	0.59	0.25	0.25
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	70	3390	2999	907	439	386
v/s Ratio Prot	0.01	c0.49	0.16		c0.18	
v/s Ratio Perm				0.05		0.01
v/c Ratio	0.36	0.73	0.27	0.09	0.74	0.03
Uniform Delay, d1	37.7	8.8	8.1	7.2	27.9	23.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.9	0.1	0.1	5.5	0.0
Delay (s)	38.9	9.7	8.1	7.2	33.4	23.0
Level of Service	D	A	A	A	C	C
Approach Delay (s)		10.0	8.0		32.0	
Approach LOS		A	A		C	

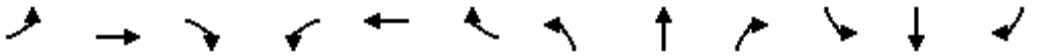
Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	6.9
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



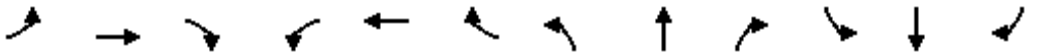
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	2477	38	27	806	159	38	16	8	235	18	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.6	3.6	3.6	3.9	3.9	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.96	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1681	1734	1583	1681	1674	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.96	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1681	1734	1583	1681	1674	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	160	2607	40	28	848	167	40	17	8	247	19	18
RTOR Reduction (vph)	0	0	8	0	0	78	0	0	7	0	4	0
Lane Group Flow (vph)	160	2607	32	28	848	89	28	29	1	143	137	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	15.0	74.1	74.1	4.6	63.7	63.7	9.6	9.6	9.6	17.2	17.2	
Effective Green, g (s)	16.0	77.1	77.1	5.6	66.7	66.7	10.6	10.6	10.6	18.2	18.2	
Actuated g/C Ratio	0.13	0.62	0.62	0.04	0.53	0.53	0.08	0.08	0.08	0.15	0.15	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.6	4.6	4.6	4.9	4.9	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	4.5	4.5	4.5	3.1	3.1	
Lane Grp Cap (vph)	227	3136	976	79	2713	845	143	147	134	245	244	
v/s Ratio Prot	c0.09	c0.51		0.02	0.17		0.02	c0.02		c0.09	0.08	
v/s Ratio Perm			0.02			0.06			0.00			
v/c Ratio	0.70	0.83	0.03	0.35	0.31	0.11	0.20	0.20	0.01	0.58	0.56	
Uniform Delay, d1	52.2	18.8	9.4	57.9	16.3	14.4	53.2	53.2	52.4	49.9	49.7	
Progression Factor	1.00	1.00	1.00	1.17	0.22	0.13	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.9	2.7	0.1	1.0	0.3	0.2	1.2	1.1	0.0	3.6	3.0	
Delay (s)	60.1	21.6	9.4	69.0	3.9	2.1	54.4	54.4	52.4	53.4	52.7	
Level of Service	E	C	A	E	A	A	D	D	D	D	D	
Approach Delay (s)		23.6			5.4			54.1			53.0	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



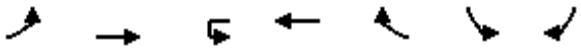
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	2414	168	123	833	334	119	471	379	313	192	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.7	4.7	3.0	2.7	2.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	2541	177	129	877	352	125	496	399	329	202	66
RTOR Reduction (vph)	0	0	84	0	0	167	0	0	140	0	0	57
Lane Group Flow (vph)	51	2541	93	129	877	185	125	496	259	329	202	9
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.6	62.8	62.8	9.4	62.6	62.6	19.4	21.1	21.1	12.0	13.7	13.7
Effective Green, g (s)	10.6	65.8	65.8	10.4	65.6	65.6	20.4	24.1	22.1	13.0	16.7	16.7
Actuated g/C Ratio	0.08	0.53	0.53	0.08	0.52	0.52	0.16	0.19	0.18	0.10	0.13	0.13
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.8	3.8	2.0	3.8	3.8
Lane Grp Cap (vph)	291	2677	833	286	2669	831	560	682	280	357	473	211
v/s Ratio Prot	0.01	c0.50		c0.04	0.17		0.04	0.14		c0.10	c0.06	
v/s Ratio Perm			0.06			0.12			c0.16			0.01
v/c Ratio	0.18	0.95	0.11	0.45	0.33	0.22	0.22	0.73	0.93	0.92	0.43	0.04
Uniform Delay, d1	53.1	28.0	14.9	54.6	17.1	16.0	45.4	47.4	50.6	55.5	49.8	47.2
Progression Factor	0.61	0.49	0.10	1.33	0.30	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	6.1	0.2	0.4	0.3	0.6	0.1	4.1	34.7	28.2	0.8	0.1
Delay (s)	32.6	19.8	1.7	72.9	5.4	17.3	45.5	51.5	85.4	83.7	50.6	47.3
Level of Service	C	B	A	E	A	B	D	D	F	F	D	D
Approach Delay (s)		18.8			14.9			64.0			68.5	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



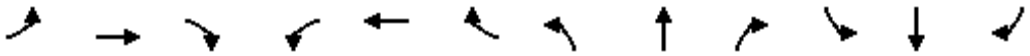
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2627	348	0	1312	66	10	3	66	12	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86	1.00		0.86	1.00	0.95	0.95	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)		6408	1583		6408	1583	1681	1720	1583	1770	1863	
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)		6408	1583		6408	1583	1681	1720	1583	1770	1863	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2765	366	0	1381	69	11	3	69	13	2	0
RTOR Reduction (vph)	0	0	54	0	0	17	0	0	62	0	0	0
Lane Group Flow (vph)	0	2765	312	0	1381	52	7	7	7	13	2	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		93.5	93.5		93.5	93.5	12.5	12.5	12.5	4.0	4.0	
Effective Green, g (s)		95.5	94.5		95.5	94.5	13.5	13.5	13.5	5.0	5.0	
Actuated g/C Ratio		0.76	0.76		0.76	0.76	0.11	0.11	0.11	0.04	0.04	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		4896	1197		4896	1197	182	186	171	71	75	
v/s Ratio Prot		c0.43			0.22		0.00	0.00		c0.01	0.00	
v/s Ratio Perm			0.20			0.03			c0.00			
v/c Ratio		0.56	0.26		0.28	0.04	0.04	0.04	0.04	0.18	0.03	
Uniform Delay, d1		6.1	4.6		4.4	3.8	49.9	49.9	50.0	58.0	57.7	
Progression Factor		1.47	1.69		0.32	0.05	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.2		0.0	0.0	0.1	0.1	0.1	1.2	0.1	
Delay (s)		9.1	8.0		1.5	0.2	50.0	50.0	50.1	59.3	57.8	
Level of Service		A	A		A	A	D	D	D	E	E	
Approach Delay (s)		9.0			1.4			50.1			59.1	
Approach LOS		A			A			D			E	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



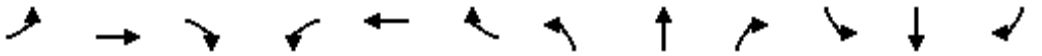
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	16	2689	0	1350	30	142	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6		2.6	2.6	3.9	3.9
Lane Util. Factor	1.00	0.86		0.86	1.00	0.97	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	6408		6408	1583	3433	1583
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	6408		6408	1583	3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	2831	0	1421	32	149	29
RTOR Reduction (vph)	0	0	0	0	9	0	26
Lane Group Flow (vph)	17	2831	0	1421	23	149	3
Turn Type	Prot		Perm		Perm		Perm
Protected Phases	7	4		8		6	
Permitted Phases			8		8		6
Actuated Green, G (s)	10.5	100.5		86.0	86.0	13.6	13.6
Effective Green, g (s)	11.5	103.9		89.4	89.4	14.6	14.6
Actuated g/C Ratio	0.09	0.83		0.72	0.72	0.12	0.12
Clearance Time (s)	4.0	6.0		6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.8		4.8	4.8	2.0	2.0
Lane Grp Cap (vph)	163	5326		4583	1132	401	185
v/s Ratio Prot	0.01	c0.44		0.22		c0.04	
v/s Ratio Perm					0.01		0.00
v/c Ratio	0.10	0.53		0.31	0.02	0.37	0.02
Uniform Delay, d1	52.0	3.2		6.5	5.1	51.0	48.9
Progression Factor	0.74	0.14		0.39	0.14	1.00	1.00
Incremental Delay, d2	0.1	0.3		0.1	0.0	0.2	0.0
Delay (s)	38.7	0.8		2.6	0.7	51.2	48.9
Level of Service	D	A		A	A	D	D
Approach Delay (s)		1.0		2.5		50.8	
Approach LOS		A		A		D	

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	2781	20	120	1380	100	10	9	20	10	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.86	1.00	1.00	0.86	1.00	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1770	6408	1583	1770	6408	1583	1770	1863	1583		1725	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1770	6408	1583	1770	6408	1583	1770	1863	1583		1725	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	2927	21	126	1453	105	11	9	21	11	0	5
RTOR Reduction (vph)	0	0	6	0	0	38	0	0	17	0	5	0
Lane Group Flow (vph)	32	2927	15	126	1453	67	11	9	4	0	11	0
Turn Type	Prot		Perm	Prot		Perm	Split		pm+ov	Split		
Protected Phases	7	4		3	8		6	6	3	2	2	
Permitted Phases			4			8			6			
Actuated Green, G (s)	6.1	70.9	70.9	14.6	79.4	79.4	10.0	10.0	24.6		10.0	
Effective Green, g (s)	6.1	70.9	70.9	14.6	79.4	79.4	10.0	10.0	24.6		10.0	
Actuated g/C Ratio	0.05	0.57	0.57	0.12	0.64	0.64	0.08	0.08	0.20		0.08	
Clearance Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	86	3635	898	207	4070	1006	142	149	369		138	
v/s Ratio Prot	0.02	c0.46		c0.07	0.23		c0.01	0.00	0.00		c0.01	
v/s Ratio Perm			0.01			0.04			0.00			
v/c Ratio	0.37	0.81	0.02	0.61	0.36	0.07	0.08	0.06	0.01		0.08	
Uniform Delay, d1	57.6	21.5	11.8	52.5	10.8	8.7	53.2	53.2	40.4		53.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	2.7	2.0	0.0	5.0	0.2	0.1	0.2	0.2	0.0		0.3	
Delay (s)	60.3	23.6	11.9	57.5	11.0	8.8	53.5	53.3	40.4		53.5	
Level of Service	E	C	B	E	B	A	D	D	D		D	
Approach Delay (s)		23.9			14.3			46.8			53.5	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

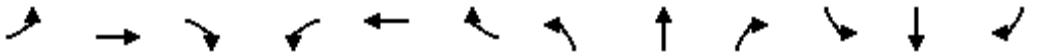


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	268	2168	585	302	1274	477	285	483	199	486	611	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.6	2.6	3.0	2.6	2.6	3.0	2.6	3.0	3.0	1.9	1.9
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.94	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	4990	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	4990	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	282	2282	616	318	1341	502	300	508	209	512	643	43
RTOR Reduction (vph)	0	0	140	0	0	286	0	0	0	0	0	33
Lane Group Flow (vph)	282	2282	476	318	1341	216	300	508	209	512	643	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			2
Actuated Green, G (s)	15.0	51.8	51.8	13.5	50.3	50.3	14.7	18.8	125.0	20.9	25.7	25.7
Effective Green, g (s)	16.0	55.2	55.2	14.5	53.7	53.7	15.7	22.2	125.0	21.9	29.1	29.1
Actuated g/C Ratio	0.13	0.44	0.44	0.12	0.43	0.43	0.13	0.18	1.00	0.18	0.23	0.23
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.0	3.4		2.0	6.0	6.0
Lane Grp Cap (vph)	439	2830	699	398	2753	680	627	629	1583	601	1184	369
v/s Ratio Prot	0.08	c0.36		c0.09	0.21		0.06	c0.14		c0.15	c0.13	
v/s Ratio Perm			0.30			0.14			0.13			0.01
v/c Ratio	0.64	0.81	0.68	0.80	0.49	0.32	0.48	0.81	0.13	0.85	0.54	0.03
Uniform Delay, d1	51.8	30.3	27.9	53.8	25.7	23.5	50.8	49.3	0.0	50.0	42.1	37.0
Progression Factor	0.84	0.69	0.66	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	2.3	4.7	10.0	0.6	1.2	0.2	7.7	0.2	10.8	1.2	0.1
Delay (s)	45.5	23.3	23.1	63.9	26.3	24.8	51.1	57.0	0.2	60.8	43.3	37.1
Level of Service	D	C	C	E	C	C	D	E	A	E	D	D
Approach Delay (s)		25.2			31.5			43.6			50.5	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

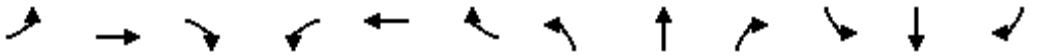
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1714	64	115	1637	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	4.0		5.0
Lane Util. Factor	0.86	1.00	1.00	0.91		1.00
Frt	1.00	0.85	1.00	1.00		0.86
Flt Protected	1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)	6408	1583	1770	5085		1611
Flt Permitted	1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)	6408	1583	1770	5085		1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1804	67	121	1723	0	26
RTOR Reduction (vph)	0	13	0	0	0	23
Lane Group Flow (vph)	1804	54	121	1723	0	3
Turn Type		Perm	Prot			Over
Protected Phases	4		3	Free		3
Permitted Phases		4				
Actuated Green, G (s)	101.1	101.1	13.9	125.0		13.9
Effective Green, g (s)	101.1	101.1	13.9	125.0		13.9
Actuated g/C Ratio	0.81	0.81	0.11	1.00		0.11
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	5183	1280	197	5085		179
v/s Ratio Prot	0.28		c0.07	0.34		0.00
v/s Ratio Perm		0.03				
v/c Ratio	0.35	0.04	0.61	0.34		0.02
Uniform Delay, d1	3.2	2.4	53.0	0.0		49.5
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.0	0.0	5.6	0.2		0.0
Delay (s)	3.2	2.4	58.6	0.2		49.5
Level of Service	A	A	E	A		D
Approach Delay (s)	3.2			4.0	49.5	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	5.0
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1262	477	498	930	399	472	0	408	19	523	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	6.0	2.0	4.0	2.0	4.0		4.0	6.0	4.0	2.0
Lane Util. Factor		0.86	1.00	0.97	0.91	1.00	0.97		0.88	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		6408	1583	3433	5085	1583	3433		2787	1770	3539	1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		6408	1583	3433	5085	1583	3433		2787	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1328	502	524	979	420	497	0	429	20	551	368
RTOR Reduction (vph)	0	0	258	0	0	0	0	0	257	0	0	0
Lane Group Flow (vph)	0	1328	244	524	979	420	497	0	172	20	551	368
Turn Type			Prot	Prot		Free	Prot		custom	Split		Free
Protected Phases		4	4	3	8		2		2 3	1	1	
Permitted Phases						Free						Free
Actuated Green, G (s)		38.4	38.4	21.5	63.9	125.0	20.6		48.1	22.5	22.5	125.0
Effective Green, g (s)		40.4	38.4	23.5	65.9	125.0	22.6		50.1	22.5	24.5	125.0
Actuated g/C Ratio		0.32	0.31	0.19	0.53	1.00	0.18		0.40	0.18	0.20	1.00
Clearance Time (s)		6.0	6.0	4.0	6.0		6.0			6.0	6.0	
Vehicle Extension (s)		4.8	4.8	2.0	4.8		2.0			4.7	4.7	
Lane Grp Cap (vph)		2071	486	645	2681	1583	621		1117	319	694	1583
v/s Ratio Prot		c0.21	0.15	c0.15	0.19		c0.14		0.06	0.01	c0.16	
v/s Ratio Perm						0.27						0.23
v/c Ratio		0.64	0.50	0.81	0.37	0.27	0.80		0.15	0.06	0.79	0.23
Uniform Delay, d1		36.1	35.5	48.6	17.3	0.0	49.0		23.9	42.5	47.8	0.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.9	1.6	7.3	0.4	0.4	6.9		0.0	0.2	7.0	0.3
Delay (s)		37.0	37.1	56.0	17.7	0.4	55.9		23.9	42.7	54.9	0.3
Level of Service		D	D	E	B	A	E		C	D	D	A
Approach Delay (s)		37.0			24.3			41.1			33.2	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

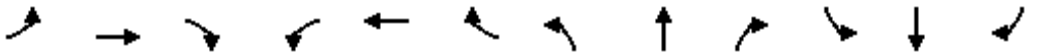


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	417	570	5	191	27	356	686	2	70	372	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	439	600	5	201	28	375	722	2	74	392	0
RTOR Reduction (vph)	0	0	362	0	0	18	0	0	1	0	0	0
Lane Group Flow (vph)	0	439	238	5	201	10	375	722	1	74	392	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		19.4	19.4	0.5	24.9	24.9	12.8	23.9	23.9	6.3	17.4	
Effective Green, g (s)		21.4	20.4	1.5	26.9	25.9	13.8	25.9	24.9	7.3	19.4	
Actuated g/C Ratio		0.31	0.29	0.02	0.38	0.37	0.20	0.37	0.36	0.10	0.28	
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1080	461	38	1358	585	676	1308	562	184	979	
v/s Ratio Prot		0.12		0.00	c0.06		c0.11	c0.20		0.04	0.11	
v/s Ratio Perm			c0.15			0.01			0.00			
v/c Ratio		0.41	0.52	0.13	0.15	0.02	0.55	0.55	0.00	0.40	0.40	
Uniform Delay, d1		19.3	20.7	33.7	14.1	14.0	25.4	17.5	14.6	29.4	20.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	1.0	1.6	0.1	0.0	1.0	0.5	0.0	1.4	0.3	
Delay (s)		19.6	21.7	35.2	14.2	14.0	26.4	18.0	14.6	30.8	20.9	
Level of Service		B	C	D	B	B	C	B	B	C	C	
Approach Delay (s)		20.8			14.6			20.9			22.5	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	11.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

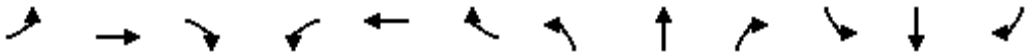
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	468	16	39	204	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3539	1583	1770	3539	1770	
Flt Permitted	1.00	1.00	0.47	1.00	0.95	
Satd. Flow (perm)	3539	1583	879	3539	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	493	17	41	215	20	0
RTOR Reduction (vph)	0	11	0	0	0	0
Lane Group Flow (vph)	493	6	41	215	20	0
Turn Type		Perm	Perm			custom
Protected Phases	4			8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	10.1	10.1	10.1	10.1	7.8	
Effective Green, g (s)	10.1	10.1	10.1	10.1	7.8	
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.28	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1281	573	318	1281	495	
v/s Ratio Prot	c0.14			0.06		
v/s Ratio Perm		0.00	0.05		c0.01	
v/c Ratio	0.38	0.01	0.13	0.17	0.04	
Uniform Delay, d1	6.6	5.7	6.0	6.0	7.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.0	0.2	0.1	0.0	
Delay (s)	6.8	5.7	6.1	6.1	7.4	
Level of Service	A	A	A	A	A	
Approach Delay (s)	6.8			6.1	7.4	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	27.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



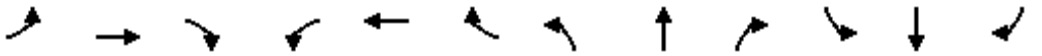
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	462	7	33	212	213	17	1101	73	304	793	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	152	486	7	35	223	224	18	1159	77	320	835	93
RTOR Reduction (vph)	0	0	5	0	0	184	0	0	32	0	0	46
Lane Group Flow (vph)	152	486	2	35	223	40	18	1159	45	320	835	47
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.2	22.0	22.0	3.9	16.7	16.7	2.4	41.1	41.1	11.2	49.9	49.9
Effective Green, g (s)	9.2	22.0	22.0	3.9	16.7	16.7	2.4	41.1	41.1	11.2	49.9	49.9
Actuated g/C Ratio	0.09	0.22	0.22	0.04	0.17	0.17	0.02	0.42	0.42	0.11	0.51	0.51
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	322	1139	355	136	602	269	84	1481	663	392	2584	804
v/s Ratio Prot	c0.04	c0.10		0.01	0.06		0.01	c0.33		c0.09	0.16	
v/s Ratio Perm			0.00			0.03			0.03			0.03
v/c Ratio	0.47	0.43	0.00	0.26	0.37	0.15	0.21	0.78	0.07	0.82	0.32	0.06
Uniform Delay, d1	42.2	32.7	29.6	45.7	36.1	34.7	47.0	24.7	17.1	42.5	14.2	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.3	0.0	1.0	0.4	0.3	1.3	2.8	0.0	12.4	0.1	0.0
Delay (s)	43.3	32.9	29.6	46.8	36.5	34.9	48.3	27.5	17.1	54.9	14.3	12.3
Level of Service	D	C	C	D	D	C	D	C	B	D	B	B
Approach Delay (s)		35.3			36.5			27.1			24.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	98.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



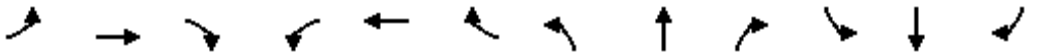
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	835	4	18	444	9	13	0	85	34	6	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	1770	1583		1770	1663	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	1770	1583		1770	1663	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	879	4	19	467	9	14	0	89	36	6	15
RTOR Reduction (vph)	0	0	2	0	0	5	0	70	0	0	14	0
Lane Group Flow (vph)	0	879	2	19	467	4	14	19	0	36	7	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		18.5	18.5	0.4	22.9	22.9	7.8	9.9		1.2	3.3	
Effective Green, g (s)		18.5	18.5	0.4	22.9	22.9	7.8	9.9		1.2	3.3	
Actuated g/C Ratio		0.40	0.40	0.01	0.50	0.50	0.17	0.22		0.03	0.07	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1423	637	15	1762	788	300	341		46	119	
v/s Ratio Prot		c0.25		0.01	c0.13		c0.01	c0.01		c0.02	0.00	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.62	0.00	1.27	0.27	0.01	0.05	0.06		0.78	0.06	
Uniform Delay, d1		10.9	8.2	22.8	6.7	5.8	16.0	14.3		22.3	19.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.0	328.3	0.1	0.0	0.3	0.1		57.8	0.2	
Delay (s)		11.7	8.2	351.1	6.8	5.8	16.3	14.4		80.0	20.1	
Level of Service		B	A	F	A	A	B	B		F	C	
Approach Delay (s)		11.7			20.0			14.7			58.0	
Approach LOS		B			B			B			E	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	901	12	99	513	150	26	120	198	25	217	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	3.0	4.7	4.7	4.3	4.3	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	96	948	13	104	540	158	27	126	208	26	228	127
RTOR Reduction (vph)	0	0	8	0	0	114	0	0	168	0	0	101
Lane Group Flow (vph)	96	948	5	104	540	44	27	126	40	26	228	26
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	7.0	18.8	18.8	7.1	18.9	18.9	12.7	12.7	12.7	13.9	13.9	13.9
Effective Green, g (s)	8.0	19.8	19.8	8.1	19.9	19.9	13.7	13.7	13.7	14.9	14.9	14.9
Actuated g/C Ratio	0.11	0.28	0.28	0.11	0.28	0.28	0.19	0.19	0.19	0.21	0.21	0.21
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	5.3	5.3	5.3	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	198	980	438	201	985	441	339	357	303	369	388	330
v/s Ratio Prot	0.05	c0.27		c0.06	0.15		0.02	c0.07		0.01	c0.12	
v/s Ratio Perm			0.00			0.03			0.03			0.02
v/c Ratio	0.48	0.97	0.01	0.52	0.55	0.10	0.08	0.35	0.13	0.07	0.59	0.08
Uniform Delay, d1	29.8	25.5	18.8	29.9	22.0	19.2	23.7	25.1	24.0	22.7	25.5	22.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	21.2	0.0	0.9	0.9	0.2	0.0	0.2	0.1	0.0	1.5	0.0
Delay (s)	30.5	46.7	18.8	30.8	22.9	19.3	23.8	25.3	24.0	22.8	27.0	22.8
Level of Service	C	D	B	C	C	B	C	C	C	C	C	C
Approach Delay (s)		44.9			23.2			24.5			25.3	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	71.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

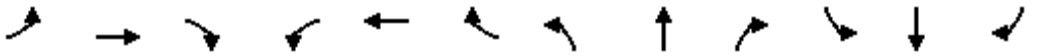


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	1240	7	91	684	40	25	28	18	49	6	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	5.7	4.0	4.7	4.7	4.9	4.9	4.9	3.9	4.9	3.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	1305	7	96	720	42	26	29	19	52	6	13
RTOR Reduction (vph)	0	0	3	0	0	17	0	0	18	0	0	12
Lane Group Flow (vph)	34	1305	4	96	720	25	26	29	1	52	6	1
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	3.8	46.2	46.2	7.2	49.6	49.6	5.2	5.2	5.2	5.6	5.6	5.6
Effective Green, g (s)	4.8	47.2	46.2	7.2	50.6	50.6	5.2	5.2	5.2	6.6	5.6	6.6
Actuated g/C Ratio	0.06	0.56	0.55	0.09	0.60	0.60	0.06	0.06	0.06	0.08	0.07	0.08
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.9	4.9	4.9	4.9	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	102	1996	874	152	2139	957	110	116	98	140	125	125
v/s Ratio Prot	0.02	c0.37		c0.05	c0.20		0.01	c0.02		c0.03	0.00	
v/s Ratio Perm			0.00			0.02			0.00			0.00
v/c Ratio	0.33	0.65	0.00	0.63	0.34	0.03	0.24	0.25	0.01	0.37	0.05	0.01
Uniform Delay, d1	37.9	12.6	8.4	37.0	8.2	6.7	37.4	37.4	36.8	36.6	36.6	35.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.9	0.0	6.1	0.2	0.0	0.4	0.4	0.0	0.6	0.1	0.0
Delay (s)	38.6	13.6	8.4	43.1	8.4	6.7	37.8	37.8	36.9	37.2	36.6	35.5
Level of Service	D	B	A	D	A	A	D	D	D	D	D	D
Approach Delay (s)		14.2			12.2			37.5			36.8	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	22.2
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

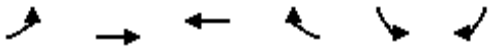
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1282	96	30	523	53	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1349	101	32	551	56	122
RTOR Reduction (vph)	0	47	0	0	0	103
Lane Group Flow (vph)	1349	54	32	551	56	19
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	28.2	28.2	1.2	34.4	8.4	8.4
Effective Green, g (s)	28.2	28.2	1.2	34.4	8.4	8.4
Actuated g/C Ratio	0.53	0.53	0.02	0.65	0.16	0.16
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1890	845	40	2306	282	252
v/s Ratio Prot	c0.38		c0.02	0.16	c0.03	
v/s Ratio Perm		0.03				0.01
v/c Ratio	0.71	0.06	0.80	0.24	0.20	0.08
Uniform Delay, d1	9.3	5.9	25.7	3.8	19.3	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0	69.2	0.1	0.3	0.1
Delay (s)	10.6	6.0	94.9	3.9	19.6	19.0
Level of Service	B	A	F	A	B	B
Approach Delay (s)	10.2			8.8	19.2	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



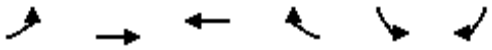
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	699	617	494	389	35	331	1166	868	39	1067	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.94	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	4990	3495		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	4990	3495		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	85	736	649	520	409	37	348	1227	914	41	1123	33
RTOR Reduction (vph)	0	0	144	0	6	0	0	0	220	0	0	22
Lane Group Flow (vph)	85	736	505	520	440	0	348	1227	694	41	1123	11
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	7.9	27.9	27.9	10.0	29.7		12.3	38.4	38.4	4.7	30.8	30.8
Effective Green, g (s)	8.9	30.4	30.4	11.0	32.2		13.3	41.8	41.8	5.7	34.2	34.2
Actuated g/C Ratio	0.09	0.30	0.30	0.11	0.32		0.13	0.42	0.42	0.06	0.34	0.34
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	303	1068	478	545	1118		453	2111	657	194	1727	538
v/s Ratio Prot	0.02	0.21		c0.10	0.13		c0.10	0.24		0.01	0.22	
v/s Ratio Perm			c0.32						c0.44			0.01
v/c Ratio	0.28	0.69	1.06	0.95	0.39		0.77	0.58	1.06	0.21	0.65	0.02
Uniform Delay, d1	42.9	31.0	35.2	44.6	26.7		42.2	22.7	29.5	45.4	28.2	22.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	2.2	57.0	27.1	0.3		6.9	0.6	51.0	0.2	1.1	0.0
Delay (s)	43.1	33.2	92.2	71.7	27.0		49.1	23.3	80.4	45.6	29.3	22.1
Level of Service	D	C	F	E	C		D	C	F	D	C	C
Approach Delay (s)		59.8			51.0			47.9			29.7	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM Average Control Delay	47.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.7	Sum of lost time (s)	9.2
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



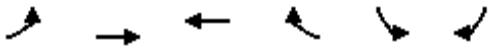
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	7	1558	822	69	112	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	1640	865	73	118	19
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	7	1640	865	73	118	19
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.3	43.3	38.3	63.0	9.7	63.0
Effective Green, g (s)	2.3	46.3	41.3	63.0	11.2	63.0
Actuated g/C Ratio	0.04	0.73	0.66	1.00	0.18	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	65	2601	2320	1583	315	1583
v/s Ratio Prot	0.00	c0.46	0.24		c0.07	
v/s Ratio Perm				0.05		0.01
v/c Ratio	0.11	0.63	0.37	0.05	0.37	0.01
Uniform Delay, d1	29.4	4.1	4.9	0.0	22.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.6	0.2	0.1	0.3	0.0
Delay (s)	29.6	4.7	5.1	0.1	23.1	0.0
Level of Service	C	A	A	A	C	A
Approach Delay (s)		4.8	4.7		19.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	5.5
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	8	1621	866	11	40	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.97	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3532		1735	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3532		1735	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	1706	912	12	42	14
RTOR Reduction (vph)	0	0	1	0	12	0
Lane Group Flow (vph)	8	1706	923	0	44	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.3	47.3	42.0		6.7	
Effective Green, g (s)	2.3	50.0	44.7		7.7	
Actuated g/C Ratio	0.04	0.78	0.70		0.12	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	64	2778	2478		210	
v/s Ratio Prot	0.00	c0.48	0.26		c0.03	
v/s Ratio Perm						
v/c Ratio	0.12	0.61	0.37		0.21	
Uniform Delay, d1	29.7	2.8	3.8		25.3	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.5	0.2		0.2	
Delay (s)	30.0	3.4	4.0		25.4	
Level of Service	C	A	A		C	
Approach Delay (s)		3.5	4.0		25.4	
Approach LOS		A	A		C	

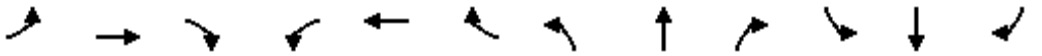
Intersection Summary			
HCM Average Control Delay	4.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	34	1691	870	13	61	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	5.7	3.0	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1527	1770	1549
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1527	1770	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	1780	916	14	64	40
RTOR Reduction (vph)	0	0	0	5	0	34
Lane Group Flow (vph)	36	1780	916	9	64	6
Confl. Peds. (#/hr)				10		10
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.7	46.5	39.8	39.8	8.8	8.8
Effective Green, g (s)	3.7	49.2	42.5	40.8	9.8	9.8
Actuated g/C Ratio	0.06	0.75	0.64	0.62	0.15	0.15
Clearance Time (s)	4.0	6.7	6.7	6.7	4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	4.3	2.0	2.0
Lane Grp Cap (vph)	99	2638	2279	944	263	230
v/s Ratio Prot	0.02	c0.50	0.26		c0.04	
v/s Ratio Perm				0.01		0.00
v/c Ratio	0.36	0.67	0.40	0.01	0.24	0.03
Uniform Delay, d1	30.0	4.3	5.6	4.8	24.8	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.8	0.2	0.0	0.2	0.0
Delay (s)	30.8	5.1	5.8	4.8	25.0	24.0
Level of Service	C	A	A	A	C	C
Approach Delay (s)		5.6	5.8		24.6	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	1403	180	168	736	175	125	480	626	109	359	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	1477	189	177	775	184	132	505	659	115	378	165
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	69	1477	189	177	775	184	132	505	659	115	378	165
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.0	56.6	120.0	11.8	62.4	120.0	8.3	23.7	120.0	8.5	23.9	120.0
Effective Green, g (s)	7.0	59.6	120.0	12.8	65.4	120.0	9.3	26.7	120.0	9.5	26.9	120.0
Actuated g/C Ratio	0.06	0.50	1.00	0.11	0.55	1.00	0.08	0.22	1.00	0.08	0.22	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	180	2273	1400	330	2494	1400	239	709	1400	245	714	1400
v/s Ratio Prot	0.02	c0.32		0.06	0.17		0.04	c0.16		0.04	c0.12	
v/s Ratio Perm			0.14			0.13			c0.47			0.12
v/c Ratio	0.38	0.65	0.14	0.54	0.31	0.13	0.55	0.71	0.47	0.47	0.53	0.12
Uniform Delay, d1	54.4	22.4	0.0	50.8	15.0	0.0	53.3	43.1	0.0	52.8	41.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.5	0.2	0.8	0.1	0.2	1.6	3.9	1.1	0.5	1.1	0.2
Delay (s)	54.9	23.9	0.2	51.6	15.1	0.2	54.9	47.0	1.1	53.4	42.1	0.2
Level of Service	D	C	A	D	B	A	D	D	A	D	D	A
Approach Delay (s)		22.6			18.4			24.5			33.6	
Approach LOS		C			B			C			C	

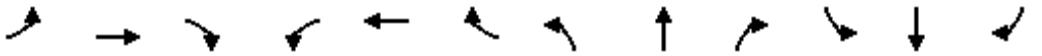
Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.4
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2246	22	133	885	162	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	3.6	3.6
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5075		1770	5085	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5075		1770	5085	1770	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2364	23	140	932	171	279
RTOR Reduction (vph)	1	0	0	0	0	130
Lane Group Flow (vph)	2386	0	140	932	171	149
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	75.4		13.1	92.5	16.9	16.9
Effective Green, g (s)	77.4		13.1	94.5	18.2	18.2
Actuated g/C Ratio	0.65		0.11	0.79	0.15	0.15
Clearance Time (s)	5.7		4.0	5.7	4.9	4.9
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	3273		193	4004	268	234
v/s Ratio Prot	c0.47		c0.08	0.18	0.10	
v/s Ratio Perm						c0.10
v/c Ratio	0.73		0.73	0.23	0.64	0.64
Uniform Delay, d1	14.3		51.7	3.3	47.8	47.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5		10.9	0.1	3.6	4.1
Delay (s)	15.7		62.6	3.5	51.4	51.9
Level of Service	B		E	A	D	D
Approach Delay (s)	15.7			11.2	51.8	
Approach LOS	B			B	D	

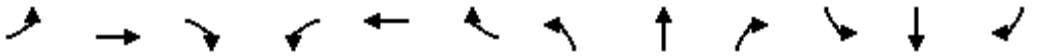
Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



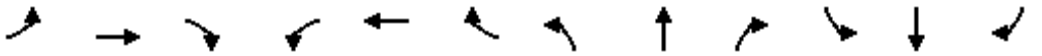
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	499	1838	93	501	797	111	67	1268	553	93	549	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	6.0	5.7	4.0	4.0	6.0	4.0	4.0	6.4	4.0
Lane Util. Factor	0.97	0.91	1.00	0.94	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	525	1935	98	527	839	117	71	1335	582	98	578	124
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	525	1935	98	527	839	117	71	1335	582	98	578	124
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	31.6	64.3	150.0	17.0	50.0	150.0	5.8	42.0	150.0	5.0	40.8	150.0
Effective Green, g (s)	31.6	64.3	150.0	17.0	50.0	150.0	5.8	42.0	150.0	5.0	40.8	150.0
Actuated g/C Ratio	0.21	0.43	1.00	0.11	0.33	1.00	0.04	0.28	1.00	0.03	0.27	1.00
Clearance Time (s)	5.7	5.7		6.0	5.7		4.0	6.0		4.0	6.4	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	3.7	
Lane Grp Cap (vph)	723	2180	1583	566	1695	1583	133	1424	1583	114	1743	1583
v/s Ratio Prot	0.15	c0.38		c0.11	0.16		0.02	c0.26		c0.03	0.09	
v/s Ratio Perm			0.06			0.07			c0.37			0.08
v/c Ratio	0.73	0.89	0.06	0.93	0.49	0.07	0.53	0.94	0.37	0.86	0.33	0.08
Uniform Delay, d1	55.2	39.5	0.0	65.9	39.9	0.0	70.8	52.7	0.0	72.2	43.7	0.0
Progression Factor	1.00	1.00	1.00	0.83	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	5.8	0.1	21.2	1.0	0.1	2.1	12.0	0.7	42.3	0.1	0.1
Delay (s)	58.3	45.4	0.1	76.0	31.9	0.1	72.8	64.7	0.7	114.4	43.8	0.1
Level of Service	E	D	A	E	C	A	E	E	A	F	D	A
Approach Delay (s)		46.3			45.1			46.3			45.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	45.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



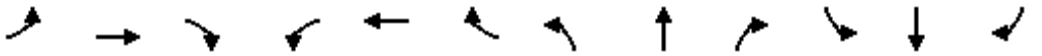
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	2032	86	159	1039	127	127	960	363	78	471	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0	3.4	3.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	115	2139	91	167	1094	134	134	1011	382	82	496	294
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	0	0	0	174
Lane Group Flow (vph)	115	2139	64	167	1094	134	134	1011	382	82	496	120
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			Free			6
Actuated Green, G (s)	9.3	67.1	67.1	9.7	69.5	150.0	27.2	42.6	150.0	8.2	23.6	23.6
Effective Green, g (s)	10.3	70.1	70.1	13.1	72.9	150.0	28.2	46.0	150.0	9.2	26.6	26.6
Actuated g/C Ratio	0.07	0.47	0.47	0.09	0.49	1.00	0.19	0.31	1.00	0.06	0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1		2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	236	2376	740	300	3114	1583	645	1085	1583	211	902	281
v/s Ratio Prot	0.03	c0.42		c0.05	0.17		0.04	c0.29		0.02	c0.10	
v/s Ratio Perm			0.04			0.08			0.24			0.08
v/c Ratio	0.49	0.90	0.09	0.56	0.35	0.08	0.21	0.93	0.24	0.39	0.55	0.43
Uniform Delay, d1	67.3	36.7	22.2	65.7	23.9	0.0	51.5	50.5	0.0	67.7	56.2	54.9
Progression Factor	1.25	0.34	0.02	1.15	1.35	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	3.9	0.1	1.2	0.1	0.1	0.1	14.1	0.4	0.4	1.0	1.6
Delay (s)	84.3	16.2	0.5	76.4	32.2	0.1	51.5	64.6	0.4	68.1	57.2	56.5
Level of Service	F	B	A	E	C	A	D	E	A	E	E	E
Approach Delay (s)		18.9			34.4			47.4			58.0	
Approach LOS		B			C			D			E	

Intersection Summary			
HCM Average Control Delay	35.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



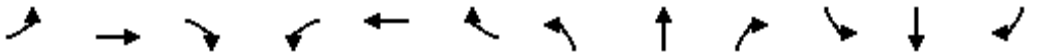
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	2364	32	40	1201	77	46	38	34	91	3	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	2488	34	42	1264	81	48	40	36	96	3	27
RTOR Reduction (vph)	0	0	7	0	0	23	0	0	34	0	0	25
Lane Group Flow (vph)	29	2488	27	42	1264	58	48	40	2	96	3	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.9	103.8	103.8	7.8	106.7	106.7	10.4	8.7	8.7	12.0	9.4	9.4
Effective Green, g (s)	4.9	103.8	103.8	7.8	106.7	106.7	10.4	8.7	8.7	12.0	9.4	9.4
Actuated g/C Ratio	0.03	0.69	0.69	0.05	0.71	0.71	0.07	0.06	0.06	0.08	0.06	0.06
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.5	2.5	2.0	3.1	3.1
Lane Grp Cap (vph)	58	3519	1095	92	3617	1126	123	108	92	142	117	99
v/s Ratio Prot	0.02	c0.49		c0.02	0.25		0.03	c0.02		c0.05	0.00	
v/s Ratio Perm			0.02			0.04			0.00			0.00
v/c Ratio	0.50	0.71	0.02	0.46	0.35	0.05	0.39	0.37	0.02	0.68	0.03	0.02
Uniform Delay, d1	71.3	13.9	7.2	69.0	8.3	6.5	66.8	68.0	66.6	67.1	66.0	66.0
Progression Factor	1.33	0.23	0.03	0.93	0.47	0.89	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.7	0.0	1.1	0.1	0.0	0.7	1.6	0.1	9.6	0.1	0.1
Delay (s)	96.2	3.9	0.3	64.9	4.0	5.8	67.5	69.6	66.7	76.7	66.1	66.0
Level of Service	F	A	A	E	A	A	E	E	E	E	E	E
Approach Delay (s)		4.9			5.9			67.9			74.2	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



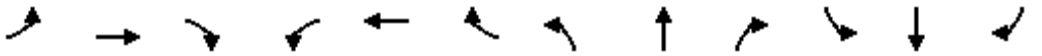
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	1336	1092	1083	831	165	549	1073	483	164	1025	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.7	3.0	2.0	4.6	3.0	4.7	-0.4	3.0
Lane Util. Factor	0.94	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4990	3539	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4990	3539	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	1406	1149	1140	875	174	578	1129	508	173	1079	38
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	31	1406	1149	1140	875	174	578	1129	508	173	1079	38
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.4	47.0	150.0	36.0	77.9	150.0	24.0	29.2	150.0	14.1	27.0	150.0
Effective Green, g (s)	6.4	50.0	150.0	37.0	80.9	150.0	25.0	32.6	150.0	15.1	30.4	150.0
Actuated g/C Ratio	0.04	0.33	1.00	0.25	0.54	1.00	0.17	0.22	1.00	0.10	0.20	1.00
Clearance Time (s)	4.0	6.0		4.0	5.7		3.0	8.0		5.7	3.0	
Vehicle Extension (s)	2.0	4.1		3.0	4.5		4.1	4.1		4.1	4.1	
Lane Grp Cap (vph)	213	1180	1583	847	2743	1583	572	1105	1583	346	1031	1583
v/s Ratio Prot	0.01	c0.40		c0.33	0.17		c0.17	0.22		0.05	c0.21	
v/s Ratio Perm			0.73			0.11			0.32			0.02
v/c Ratio	0.15	1.19	0.73	1.35	0.32	0.11	1.01	1.02	0.32	0.50	1.05	0.02
Uniform Delay, d1	69.2	50.0	0.0	56.5	19.2	0.0	62.5	58.7	0.0	63.9	59.8	0.0
Progression Factor	0.63	0.51	1.00	0.76	1.20	1.00	1.53	1.12	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	92.6	2.1	162.4	0.3	0.1	33.5	27.9	0.4	1.6	41.0	0.0
Delay (s)	43.4	118.3	2.1	205.2	23.4	0.1	129.4	93.8	0.4	65.5	100.8	0.0
Level of Service	D	F	A	F	C	A	F	F	A	E	F	A
Approach Delay (s)		65.8			116.2			81.6			93.1	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	87.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	7.6
Intersection Capacity Utilization	116.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	222	4	153	55	15	49	211	1608	112	319	1825	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	2.0	3.0	3.0	3.0	3.0	2.6		9.0	2.6	2.6
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.86		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	6345		3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	6345		3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	234	4	161	58	16	52	222	1693	118	336	1921	196
RTOR Reduction (vph)	0	0	143	0	0	49	0	6	0	0	0	58
Lane Group Flow (vph)	234	4	18	58	16	3	222	1805	0	336	1921	138
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8						6
Actuated Green, G (s)	15.2	15.2	15.2	8.0	8.0	8.0	14.6	81.0		19.8	93.2	93.2
Effective Green, g (s)	16.2	17.2	17.2	10.0	10.0	10.0	15.6	84.4		21.8	96.6	96.6
Actuated g/C Ratio	0.11	0.11	0.11	0.07	0.07	0.07	0.10	0.56		0.15	0.64	0.64
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	6.0		11.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	371	214	182	229	124	106	357	3570		499	3275	1019
v/s Ratio Prot	c0.07	0.00		c0.02	0.01		c0.06	0.28		0.10	c0.38	
v/s Ratio Perm			0.01			0.00						0.09
v/c Ratio	0.63	0.02	0.10	0.25	0.13	0.03	0.62	0.51		0.67	0.59	0.14
Uniform Delay, d1	64.0	58.9	59.5	66.5	65.9	65.5	64.4	20.0		60.7	15.3	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.29	0.27		0.96	0.89	1.47
Incremental Delay, d2	3.5	0.0	0.2	0.6	0.5	0.1	1.3	0.2		2.9	0.2	0.0
Delay (s)	67.5	58.9	59.7	67.0	66.4	65.6	84.1	5.7		61.4	13.8	15.4
Level of Service	E	E	E	E	E	E	F	A		E	B	B
Approach Delay (s)		64.3			66.4			14.2			20.5	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰↰		↱↱
Volume (vph)	0	1147	10	0	1825	560	0	0	0	131	0	529
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			0%			0%			0%	
Total Lost time (s)		4.7	5.7		4.7	3.0				4.3		4.3
Lane Util. Factor		0.91	1.00		0.91	1.00				0.97		0.88
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5212	1623		5085	1583				3433		2787
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5212	1623		5085	1583				3433		2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1207	11	0	1921	589	0	0	0	138	0	557
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	15
Lane Group Flow (vph)	0	1207	7	0	1921	589	0	0	0	138	0	542
Turn Type			Perm			Free				Prot		custom
Protected Phases		2			6					4		
Permitted Phases			2			Free						4
Actuated Green, G (s)		45.9	45.9		45.9	75.0				18.1		18.1
Effective Green, g (s)		46.9	45.9		46.9	75.0				19.1		19.1
Actuated g/C Ratio		0.63	0.61		0.63	1.00				0.25		0.25
Clearance Time (s)		5.7	5.7		5.7					5.3		5.3
Vehicle Extension (s)		4.3	4.3		3.9					2.0		2.0
Lane Grp Cap (vph)		3259	993		3180	1583				874		710
v/s Ratio Prot		0.23			c0.38					0.04		
v/s Ratio Perm			0.00			0.37						c0.19
v/c Ratio		0.37	0.01		0.60	0.37				0.16		0.76
Uniform Delay, d1		6.9	5.7		8.5	0.0				21.7		25.9
Progression Factor		0.83	0.65		0.83	1.00				1.00		1.00
Incremental Delay, d2		0.3	0.0		0.3	0.6				0.0		4.4
Delay (s)		6.0	3.7		7.3	0.6				21.7		30.3
Level of Service		A	A		A	A				C		C
Approach Delay (s)		6.0			5.8			0.0			28.6	
Approach LOS		A			A			A			C	

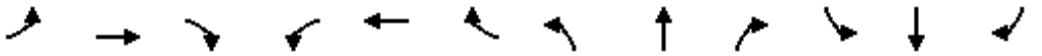
Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	911	367	0	1804	581	402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	0%	
Total Lost time (s)	4.7	4.7		4.7	6.3	6.3
Lane Util. Factor	0.91	1.00		0.91	0.94	0.88
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	5212	1623		5085	4990	2787
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	5212	1623		5085	4990	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	959	386	0	1899	612	423
RTOR Reduction (vph)	0	134	0	0	0	338
Lane Group Flow (vph)	959	252	0	1899	612	85
Turn Type		Perm				Perm
Protected Phases	2			6	8	
Permitted Phases		2				8
Actuated Green, G (s)	47.9	47.9		47.9	14.1	14.1
Effective Green, g (s)	48.9	48.9		48.9	15.1	15.1
Actuated g/C Ratio	0.65	0.65		0.65	0.20	0.20
Clearance Time (s)	5.7	5.7		5.7	7.3	7.3
Vehicle Extension (s)	3.8	3.8		4.3	2.0	2.0
Lane Grp Cap (vph)	3398	1058		3315	1005	561
v/s Ratio Prot	0.18			c0.37	c0.12	
v/s Ratio Perm		0.16				0.03
v/c Ratio	0.28	0.24		0.57	0.61	0.15
Uniform Delay, d1	5.6	5.4		7.2	27.3	24.7
Progression Factor	0.88	2.37		0.84	1.00	1.00
Incremental Delay, d2	0.1	0.1		0.6	0.7	0.0
Delay (s)	5.0	12.9		6.7	28.0	24.7
Level of Service	A	B		A	C	C
Approach Delay (s)	7.2			6.7	26.7	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

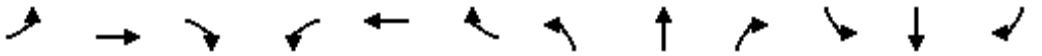
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	132	271	354	214	34	325	624	309	93	1265	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-5%			0%	
Total Lost time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3519	5212	1623	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	66	139	285	373	225	36	342	657	325	98	1332	102
RTOR Reduction (vph)	0	0	234	0	0	28	0	0	98	0	0	46
Lane Group Flow (vph)	66	139	51	373	225	8	342	657	227	98	1332	56
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.3	17.1	17.1	20.6	31.8	31.8	23.0	84.2	104.8	8.7	69.9	69.9
Effective Green, g (s)	6.3	17.1	17.1	20.6	31.8	31.8	23.0	84.2	104.8	8.7	69.9	69.9
Actuated g/C Ratio	0.04	0.11	0.11	0.14	0.21	0.21	0.15	0.56	0.70	0.06	0.47	0.47
Clearance Time (s)	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	4.3	4.3	2.0	4.5	2.0	2.0	4.5	4.5
Lane Grp Cap (vph)	144	403	180	471	750	336	540	2926	1134	199	2370	738
v/s Ratio Prot	0.02	0.04		c0.11	c0.06		c0.10	0.13	0.03	0.03	c0.26	
v/s Ratio Perm			0.03			0.00			0.11			0.04
v/c Ratio	0.46	0.34	0.28	0.79	0.30	0.02	0.63	0.22	0.20	0.49	0.56	0.08
Uniform Delay, d1	70.2	61.3	60.8	62.6	49.7	46.8	59.5	16.5	7.9	68.5	29.0	22.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.93	0.66	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.7	1.1	8.3	0.4	0.0	1.7	0.2	0.0	0.7	1.0	0.2
Delay (s)	71.0	62.0	62.0	70.9	50.1	46.8	57.9	15.5	5.3	69.2	29.9	22.4
Level of Service	E	E	E	E	D	D	E	B	A	E	C	C
Approach Delay (s)		63.2			62.2			23.9			32.0	
Approach LOS		E			E			C			C	

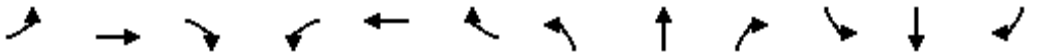
Intersection Summary			
HCM Average Control Delay	37.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



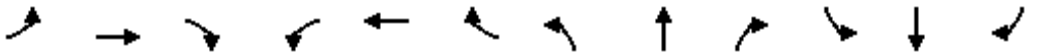
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	18	50	137	12	34	13	477	146	79	1328	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	1491		1593	1492		1593	4577	1425	1593	3185	1425
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1593	1491		1593	1492		1593	4577	1425	1593	3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	19	53	144	13	36	14	502	154	83	1398	3
RTOR Reduction (vph)	0	49	0	0	29	0	0	0	61	0	0	1
Lane Group Flow (vph)	9	23	0	144	20	0	14	502	93	83	1398	2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	0.6	8.4		14.1	21.9		1.9	69.7	69.7	8.8	76.6	76.6
Effective Green, g (s)	1.6	9.9		15.1	23.4		2.9	72.7	72.7	9.8	79.6	79.6
Actuated g/C Ratio	0.01	0.08		0.13	0.19		0.02	0.61	0.61	0.08	0.66	0.66
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	21	123		200	291		38	2773	863	130	2113	945
v/s Ratio Prot	0.01	c0.02		c0.09	0.01		0.01	0.11		c0.05	c0.44	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.43	0.19		0.72	0.07		0.37	0.18	0.11	0.64	0.66	0.00
Uniform Delay, d1	58.7	51.3		50.4	39.4		57.6	10.5	10.0	53.4	12.1	6.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.6		9.9	0.1		2.2	0.1	0.3	7.3	0.9	0.0
Delay (s)	63.8	51.9		60.3	39.5		59.8	10.6	10.2	60.7	13.1	6.8
Level of Service	E	D		E	D		E	B	B	E	B	A
Approach Delay (s)		53.3			55.0			11.6			15.7	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



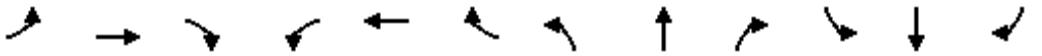
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	7	23	60	2	73	7	1156	46	41	1324	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	7	24	63	2	77	7	1217	48	43	1394	2
RTOR Reduction (vph)	0	0	21	0	0	65	0	0	25	0	0	1
Lane Group Flow (vph)	9	7	3	63	2	12	7	1217	23	43	1394	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	7.2	7.2	2.7	9.1	9.1	0.8	27.8	27.8	2.4	29.4	29.4
Effective Green, g (s)	0.8	7.2	7.2	2.7	9.1	9.1	0.8	27.8	27.8	2.4	29.4	29.4
Actuated g/C Ratio	0.01	0.12	0.12	0.04	0.15	0.15	0.01	0.46	0.46	0.04	0.49	0.49
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	24	424	190	80	536	240	24	2352	732	71	2488	774
v/s Ratio Prot	0.01	0.00		c0.04	0.00		0.00	0.24		c0.02	c0.27	
v/s Ratio Perm			0.00			c0.01			0.01			0.00
v/c Ratio	0.38	0.02	0.02	0.79	0.00	0.05	0.29	0.52	0.03	0.61	0.56	0.00
Uniform Delay, d1	29.4	23.3	23.3	28.4	21.7	21.8	29.4	11.4	8.8	28.4	10.8	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.6	0.0	0.0	38.7	0.0	0.1	6.7	0.2	0.0	13.7	0.3	0.0
Delay (s)	39.0	23.3	23.4	67.1	21.7	21.9	36.0	11.6	8.8	42.1	11.1	7.8
Level of Service	D	C	C	E	C	C	D	B	A	D	B	A
Approach Delay (s)		26.9			41.9			11.6			12.0	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



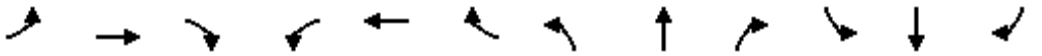
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	115	3	2	80	8	6	1	0	34	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	4.5	4.5	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863		1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	121	3	2	84	8	6	1	0	36	5	1
RTOR Reduction (vph)	0	0	2	0	0	6	0	0	0	0	0	1
Lane Group Flow (vph)	1	121	1	2	84	2	6	1	0	36	5	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	8.4	8.4	0.5	8.9	8.9	0.5	2.4		12.1	14.0	14.0
Effective Green, g (s)	0.5	8.4	8.4	0.5	8.9	8.9	0.5	2.4		12.1	14.0	14.0
Actuated g/C Ratio	0.01	0.19	0.19	0.01	0.21	0.21	0.01	0.06		0.28	0.32	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	4.5	4.5	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	20	685	306	20	726	325	20	103		493	601	511
v/s Ratio Prot	0.00	c0.03		c0.00	0.02		0.00	0.00		c0.02	c0.00	
v/s Ratio Perm			0.00			0.00						0.00
v/c Ratio	0.05	0.18	0.00	0.10	0.12	0.01	0.30	0.01		0.07	0.01	0.00
Uniform Delay, d1	21.2	14.6	14.1	21.2	14.0	13.7	21.3	19.4		11.5	10.0	10.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	0.0	2.2	0.1	0.0	8.3	0.0		0.1	0.0	0.0
Delay (s)	22.3	14.7	14.1	23.4	14.1	13.7	29.5	19.4		11.6	10.0	10.0
Level of Service	C	B	B	C	B	B	C	B		B	A	A
Approach Delay (s)		14.8			14.3			28.1			11.4	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.09		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



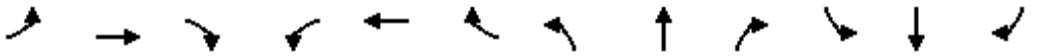
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	120	18	168	53	96	10	951	240	96	1150	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.3	4.3	4.0	3.3	4.3
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	43	126	19	177	56	101	11	1001	253	101	1211	9
RTOR Reduction (vph)	0	0	17	0	0	79	0	0	144	0	0	5
Lane Group Flow (vph)	43	126	2	177	56	22	11	1001	109	101	1211	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.3	9.0	9.0	9.9	15.6	15.6	0.6	31.8	31.8	5.2	36.4	36.4
Effective Green, g (s)	4.3	10.0	10.0	10.9	16.6	16.6	1.6	33.8	32.8	6.2	38.4	37.4
Actuated g/C Ratio	0.06	0.13	0.13	0.14	0.22	0.22	0.02	0.44	0.43	0.08	0.50	0.49
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.5	5.5	2.0	5.5	5.5
Lane Grp Cap (vph)	100	464	208	253	771	345	37	2256	681	144	2563	777
v/s Ratio Prot	0.02	c0.04		c0.10	0.02		0.01	0.20		c0.06	c0.24	
v/s Ratio Perm			0.00			0.01			0.07			0.00
v/c Ratio	0.43	0.27	0.01	0.70	0.07	0.06	0.30	0.44	0.16	0.70	0.47	0.01
Uniform Delay, d1	34.8	29.8	28.8	31.1	23.7	23.6	36.7	14.7	13.3	34.1	12.3	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.0	6.7	0.0	0.0	1.6	0.3	0.3	11.9	0.3	0.0
Delay (s)	35.8	29.9	28.8	37.8	23.7	23.7	38.4	15.0	13.5	46.0	12.6	9.9
Level of Service	D	C	C	D	C	C	D	B	B	D	B	A
Approach Delay (s)		31.2			31.1			14.9			15.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	76.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



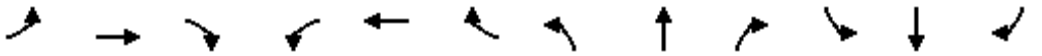
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	484	0	2	280	0	46	0	4	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0		5.0			5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00			1.00
Frt	1.00	1.00		1.00	1.00		1.00		0.85			0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00			1.00
Satd. Flow (prot)	1770	3539		1770	3539		1770		1583			1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00			1.00
Satd. Flow (perm)	1770	3539		1770	3539		1770		1583			1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	509	0	2	295	0	48	0	4	0	0	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	3	0	0	1
Lane Group Flow (vph)	2	509	0	2	295	0	48	0	1	0	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	12.7		0.4	12.7		1.8		15.6			8.8
Effective Green, g (s)	0.4	12.7		0.4	12.7		1.8		15.6			8.8
Actuated g/C Ratio	0.01	0.29		0.01	0.29		0.04		0.36			0.20
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0		5.0			5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0			3.0
Lane Grp Cap (vph)	16	1028		16	1028		73		565			319
v/s Ratio Prot	c0.00	c0.14		0.00	0.08		c0.03					
v/s Ratio Perm									c0.00			0.00
v/c Ratio	0.12	0.50		0.12	0.29		0.66		0.00			0.00
Uniform Delay, d1	21.5	12.8		21.5	12.0		20.6		9.0			13.9
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00			1.00
Incremental Delay, d2	3.5	0.4		3.5	0.2		19.3		0.0			0.0
Delay (s)	25.0	13.2		25.0	12.2		40.0		9.0			13.9
Level of Service	C	B		C	B		D		A			B
Approach Delay (s)		13.3			12.2			37.6			13.9	
Approach LOS		B			B			D			B	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	43.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



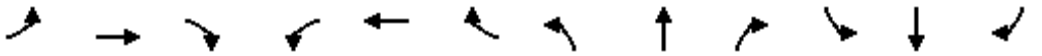
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	498	66	8	180	4	79	35	28	5	103	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	37	524	69	8	189	4	83	37	29	5	108	61
RTOR Reduction (vph)	0	0	50	0	0	3	0	0	19	0	0	44
Lane Group Flow (vph)	37	524	19	8	189	1	83	37	10	5	108	17
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.4	13.0	13.0	0.5	12.1	12.1	3.5	16.1	16.1	0.5	13.1	13.1
Effective Green, g (s)	1.4	13.0	13.0	0.5	12.1	12.1	3.5	16.1	16.1	0.5	13.1	13.1
Actuated g/C Ratio	0.03	0.27	0.27	0.01	0.25	0.25	0.07	0.33	0.33	0.01	0.27	0.27
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	52	956	428	18	890	398	129	624	530	18	507	431
v/s Ratio Prot	c0.02	c0.15		0.00	0.05		c0.05	c0.02		0.00	c0.06	
v/s Ratio Perm			0.01			0.00			0.01			0.01
v/c Ratio	0.71	0.55	0.04	0.44	0.21	0.00	0.64	0.06	0.02	0.28	0.21	0.04
Uniform Delay, d1	23.1	15.0	13.0	23.7	14.2	13.5	21.7	10.9	10.7	23.6	13.5	12.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.8	0.6	0.0	16.5	0.1	0.0	10.5	0.0	0.0	8.3	0.2	0.0
Delay (s)	60.0	15.7	13.0	40.2	14.4	13.5	32.2	10.9	10.7	31.9	13.7	12.9
Level of Service	E	B	B	D	B	B	C	B	B	C	B	B
Approach Delay (s)		18.0			15.4			22.7			14.0	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



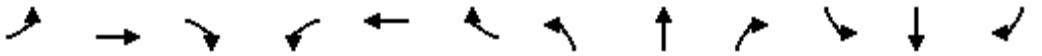
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	634	7	13	191	0	19	3	110	0	2	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539		1770	1863	1583		1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539		1770	1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	667	7	14	201	0	20	3	116	0	2	18
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	79	0	0	15
Lane Group Flow (vph)	14	667	2	14	201	0	20	3	37	0	2	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	15.2	15.2	0.4	15.2		0.5	14.2	14.2		8.7	8.7
Effective Green, g (s)	0.4	15.2	15.2	0.4	15.2		0.5	14.2	14.2		8.7	8.7
Actuated g/C Ratio	0.01	0.34	0.34	0.01	0.34		0.01	0.32	0.32		0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	16	1201	537	16	1201		20	591	502		362	307
v/s Ratio Prot	c0.01	c0.19		0.01	0.06		c0.01	0.00			0.00	
v/s Ratio Perm			0.00						c0.02			0.00
v/c Ratio	0.88	0.56	0.00	0.88	0.17		1.00	0.01	0.07		0.01	0.01
Uniform Delay, d1	22.2	12.0	9.8	22.2	10.4		22.1	10.5	10.7		14.6	14.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	161.3	0.6	0.0	161.3	0.1		201.2	0.0	0.1		0.0	0.0
Delay (s)	183.5	12.6	9.8	183.5	10.4		223.4	10.5	10.8		14.6	14.6
Level of Service	F	B	A	F	B		F	B	B		B	B
Approach Delay (s)		16.1			21.7			41.3			14.6	
Approach LOS		B			C			D			B	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	44.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



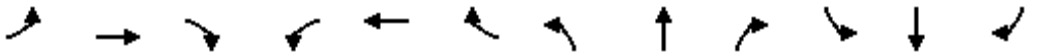
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	606	97	93	177	3	19	40	30	18	97	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.2	4.2	3.5	3.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	43	638	102	98	186	3	20	42	32	19	102	8
RTOR Reduction (vph)	0	0	63	0	0	2	0	0	26	0	0	6
Lane Group Flow (vph)	43	638	39	98	186	1	20	42	6	19	102	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.7	20.7	20.7	6.8	24.8	24.8	1.1	9.8	9.8	1.0	9.7	9.7
Effective Green, g (s)	3.7	22.7	21.7	7.8	26.8	25.8	2.1	10.8	10.8	2.0	10.7	10.7
Actuated g/C Ratio	0.06	0.40	0.38	0.14	0.47	0.45	0.04	0.19	0.19	0.04	0.19	0.19
Clearance Time (s)	4.5	5.2	5.2	4.5	5.2	5.2	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	115	1409	603	242	1664	717	65	353	300	62	350	297
v/s Ratio Prot	0.02	c0.18		c0.06	0.05		c0.01	0.02		0.01	c0.05	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.37	0.45	0.06	0.40	0.11	0.00	0.31	0.12	0.02	0.31	0.29	0.01
Uniform Delay, d1	25.5	12.6	11.2	22.5	8.4	8.5	26.7	19.2	18.8	26.8	19.9	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.5	0.1	1.1	0.1	0.0	2.7	0.2	0.0	2.8	0.5	0.0
Delay (s)	27.6	13.1	11.3	23.6	8.5	8.5	29.4	19.3	18.8	29.6	20.4	18.8
Level of Service	C	B	B	C	A	A	C	B	B	C	C	B
Approach Delay (s)		13.6			13.7			21.3			21.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



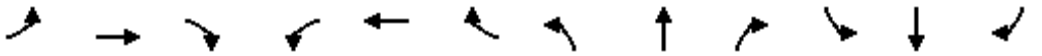
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	666	0	43	0	0	130	25	1587	9	347	1544	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97		1.00			1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	701	0	45	0	0	137	26	1671	9	365	1625	247
RTOR Reduction (vph)	0	0	34	0	0	21	0	0	3	0	0	92
Lane Group Flow (vph)	701	0	11	0	0	116	26	1671	6	365	1625	155
Turn Type	Prot		custom	Prot		Over	Prot		Perm	Prot		Perm
Protected Phases	7		4	3		1	5	2		1	6	
Permitted Phases			7						2			6
Actuated Green, G (s)	27.5		27.5			27.0	3.3	39.1	39.1	27.0	62.8	62.8
Effective Green, g (s)	27.5		27.5			27.0	3.3	39.1	39.1	27.0	62.8	62.8
Actuated g/C Ratio	0.25		0.25			0.25	0.03	0.36	0.36	0.25	0.58	0.58
Clearance Time (s)	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	869		401			394	54	1831	570	440	2940	915
v/s Ratio Prot	c0.20		0.01			0.07	0.01	c0.33		c0.21	0.32	
v/s Ratio Perm									0.00			0.10
v/c Ratio	0.81		0.03			0.29	0.48	0.91	0.01	0.83	0.55	0.17
Uniform Delay, d1	38.1		30.5			33.1	51.8	33.1	22.3	38.6	14.2	10.7
Progression Factor	1.00		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5		0.0			0.4	6.6	7.4	0.0	12.2	0.2	0.1
Delay (s)	43.6		30.5			33.5	58.4	40.5	22.3	50.8	14.4	10.8
Level of Service	D		C			C	E	D	C	D	B	B
Approach Delay (s)		42.8			33.5			40.7			20.0	
Approach LOS		D			C			D			B	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	108.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



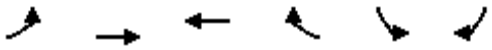
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1206	42	29	1228	12	0	9	2	104	21	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	1269	44	31	1293	13	0	9	2	109	22	20
RTOR Reduction (vph)	0	0	26	0	0	7	0	0	2	0	0	13
Lane Group Flow (vph)	8	1269	18	31	1293	6	0	9	0	109	22	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	25.8	25.8	1.3	26.6	26.6		9.6	9.6	6.1	20.7	20.7
Effective Green, g (s)	0.5	25.8	25.8	1.3	26.6	26.6		9.6	9.6	6.1	20.7	20.7
Actuated g/C Ratio	0.01	0.41	0.41	0.02	0.42	0.42		0.15	0.15	0.10	0.33	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	14	2089	650	37	2154	671		285	242	172	614	522
v/s Ratio Prot	0.00	0.25		c0.02	c0.25			0.00		c0.06	c0.01	
v/s Ratio Perm			0.01			0.00			0.00			0.00
v/c Ratio	0.57	0.61	0.03	0.84	0.60	0.01		0.03	0.00	0.63	0.04	0.01
Uniform Delay, d1	31.0	14.5	11.0	30.6	14.0	10.5		22.6	22.5	27.3	14.3	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.0	0.5	0.0	84.7	0.5	0.0		0.0	0.0	7.4	0.0	0.0
Delay (s)	77.0	15.0	11.0	115.3	14.5	10.5		22.7	22.5	34.7	14.3	14.2
Level of Service	E	B	B	F	B	B		C	C	C	B	B
Approach Delay (s)		15.3			16.8			22.7			29.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



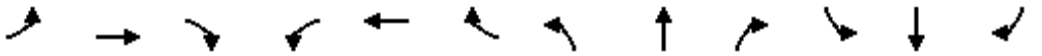
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	337	972	1	237	1008	33	60	846	385	95	979	516
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	355	1023	1	249	1061	35	63	891	405	100	1031	543
RTOR Reduction (vph)	0	0	1	0	0	24	0	0	190	0	0	190
Lane Group Flow (vph)	355	1023	0	249	1061	11	63	891	215	100	1031	353
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.3	31.3	31.3	11.6	29.6	29.6	3.0	32.5	32.5	4.1	33.6	33.6
Effective Green, g (s)	14.3	33.3	32.3	12.6	31.6	30.6	4.0	34.5	33.5	5.1	35.6	34.6
Actuated g/C Ratio	0.14	0.33	0.32	0.13	0.32	0.31	0.04	0.35	0.34	0.05	0.36	0.35
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	493	1702	514	435	1615	487	138	1763	533	176	1819	550
v/s Ratio Prot	c0.10	0.20		0.07	c0.21		0.02	0.18		c0.03	0.20	
v/s Ratio Perm			0.00			0.01			0.14			c0.22
v/c Ratio	0.72	0.60	0.00	0.57	0.66	0.02	0.46	0.51	0.40	0.57	0.57	0.64
Uniform Delay, d1	40.7	27.6	22.7	40.9	29.3	24.0	46.7	25.7	25.3	46.1	25.7	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.6	0.0	1.8	1.0	0.0	2.4	0.2	0.5	4.2	0.4	2.6
Delay (s)	45.8	28.2	22.7	42.7	30.3	24.0	49.1	26.0	25.8	50.3	26.1	29.8
Level of Service	D	C	C	D	C	C	D	C	C	D	C	C
Approach Delay (s)		32.7			32.4			27.0			28.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	99.5	Sum of lost time (s)	11.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



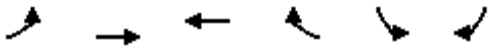
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	251	1211	968	98	50	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	264	1275	1019	103	53	84
RTOR Reduction (vph)	0	0	0	67	0	70
Lane Group Flow (vph)	264	1275	1019	36	53	14
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	14.5	40.7	21.2	21.2	10.2	10.2
Effective Green, g (s)	14.5	40.7	21.2	21.2	10.2	10.2
Actuated g/C Ratio	0.24	0.67	0.35	0.35	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	421	3398	1770	551	296	265
v/s Ratio Prot	c0.15	0.25	c0.20		c0.03	
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.63	0.38	0.58	0.07	0.18	0.05
Uniform Delay, d1	20.8	4.5	16.2	13.2	21.8	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.1	0.5	0.1	0.3	0.1
Delay (s)	23.7	4.5	16.6	13.3	22.0	21.4
Level of Service	C	A	B	B	C	C
Approach Delay (s)		7.8	16.3		21.6	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	60.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



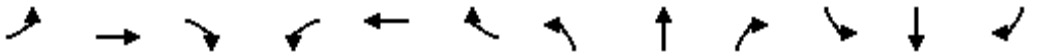
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	472	779	10	166	613	151	27	656	345	270	692	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	497	820	11	175	645	159	28	691	363	284	728	447
RTOR Reduction (vph)	0	0	8	0	0	105	0	0	183	0	0	197
Lane Group Flow (vph)	497	820	3	175	645	54	28	691	180	284	728	250
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.4	26.4	26.4	9.2	20.2	20.2	1.4	25.6	25.6	8.2	32.4	32.4
Effective Green, g (s)	16.4	28.4	27.4	10.2	22.2	21.2	2.4	27.6	26.6	9.2	34.4	33.4
Actuated g/C Ratio	0.18	0.32	0.31	0.11	0.25	0.24	0.03	0.31	0.30	0.10	0.38	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	630	1615	485	392	1263	375	92	1570	471	353	1957	591
v/s Ratio Prot	c0.14	c0.16		0.05	0.13		0.01	0.14		c0.08	0.14	
v/s Ratio Perm			0.00			0.03			0.11			c0.16
v/c Ratio	0.79	0.51	0.01	0.45	0.51	0.15	0.30	0.44	0.38	0.80	0.37	0.42
Uniform Delay, d1	34.8	24.8	21.5	37.0	28.9	26.9	42.7	24.7	24.9	39.2	19.7	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	0.3	0.0	0.8	0.4	0.2	1.9	0.2	0.5	12.5	0.1	0.5
Delay (s)	41.4	25.1	21.6	37.8	29.3	27.1	44.6	24.9	25.4	51.7	19.9	21.3
Level of Service	D	C	C	D	C	C	D	C	C	D	B	C
Approach Delay (s)		31.1			30.4			25.6			26.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	89.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



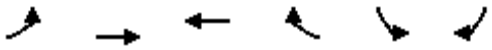
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1394	897	145	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0		5.0
Lane Util. Factor		0.91	0.91	1.00		1.00
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		5085	5085	1583		1583
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		5085	5085	1583		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1467	944	153	0	35
RTOR Reduction (vph)	0	0	0	62	0	28
Lane Group Flow (vph)	0	1467	944	91	0	7
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)		27.3	27.3	27.3		8.8
Effective Green, g (s)		27.3	27.3	27.3		8.8
Actuated g/C Ratio		0.59	0.59	0.59		0.19
Clearance Time (s)		5.0	5.0	5.0		5.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		3011	3011	937		302
v/s Ratio Prot		c0.29	0.19			
v/s Ratio Perm				0.06		c0.00
v/c Ratio		0.49	0.31	0.10		0.02
Uniform Delay, d1		5.4	4.7	4.1		15.2
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.1	0.0		0.0
Delay (s)		5.5	4.8	4.1		15.2
Level of Service		A	A	A		B
Approach Delay (s)		5.5	4.7		15.2	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	46.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



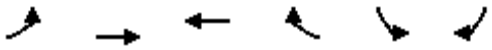
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1260	128	4	852	63	158	66	13	182	111	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	1326	135	4	897	66	166	69	14	192	117	34
RTOR Reduction (vph)	0	0	85	0	0	42	0	0	11	0	0	28
Lane Group Flow (vph)	7	1326	50	4	897	24	166	69	3	192	117	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.7	23.8	23.8	0.7	23.8	23.8	10.0	11.6	11.6	10.4	12.0	12.0
Effective Green, g (s)	0.7	23.8	23.8	0.7	23.8	23.8	10.0	11.6	11.6	10.4	12.0	12.0
Actuated g/C Ratio	0.01	0.37	0.37	0.01	0.37	0.37	0.16	0.18	0.18	0.16	0.19	0.19
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	4.8	4.8	3.0	4.8	4.8	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	19	1876	584	19	1876	584	274	335	285	285	347	295
v/s Ratio Prot	c0.00	c0.26		0.00	0.18		0.09	0.04		c0.11	c0.06	
v/s Ratio Perm			0.03			0.02			0.00			0.00
v/c Ratio	0.37	0.71	0.09	0.21	0.48	0.04	0.61	0.21	0.01	0.67	0.34	0.02
Uniform Delay, d1	31.7	17.4	13.3	31.6	15.6	13.0	25.4	22.5	21.7	25.5	22.8	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7	1.5	0.1	5.5	0.4	0.1	3.8	0.3	0.0	6.2	0.6	0.0
Delay (s)	43.4	18.9	13.4	37.1	16.0	13.1	29.2	22.8	21.7	31.6	23.4	21.5
Level of Service	D	B	B	D	B	B	C	C	C	C	C	C
Approach Delay (s)		18.5			15.9			27.0			27.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



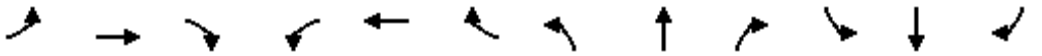
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	170	1284	862	165	55	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	1352	907	174	58	60
RTOR Reduction (vph)	0	0	0	118	0	48
Lane Group Flow (vph)	179	1352	907	56	58	12
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	10.2	32.1	16.9	16.9	10.1	10.1
Effective Green, g (s)	10.2	32.1	16.9	16.9	10.1	10.1
Actuated g/C Ratio	0.20	0.61	0.32	0.32	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	346	3127	1646	513	342	306
v/s Ratio Prot	0.10	c0.27	c0.18		c0.03	
v/s Ratio Perm				0.04		0.01
v/c Ratio	0.52	0.43	0.55	0.11	0.17	0.04
Uniform Delay, d1	18.8	5.3	14.5	12.4	17.6	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	0.4	0.1	0.2	0.1
Delay (s)	20.1	5.4	14.9	12.5	17.8	17.2
Level of Service	C	A	B	B	B	B
Approach Delay (s)		7.1	14.5		17.5	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	52.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	70	1269	988	38	121	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5	5.5	5.5	4.5	4.5
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	1336	1040	40	127	40
RTOR Reduction (vph)	0	0	0	24	0	31
Lane Group Flow (vph)	74	1336	1040	16	127	9
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.8	28.6	20.3	20.3	11.5	11.5
Effective Green, g (s)	3.8	28.6	20.3	20.3	11.5	11.5
Actuated g/C Ratio	0.08	0.57	0.41	0.41	0.23	0.23
Clearance Time (s)	4.5	5.5	5.5	5.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	134	2903	2060	641	406	363
v/s Ratio Prot	0.04	c0.26	0.20		c0.07	
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.55	0.46	0.50	0.03	0.31	0.03
Uniform Delay, d1	22.3	6.3	11.1	9.0	16.0	15.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.9	0.1	0.2	0.0	0.4	0.0
Delay (s)	27.2	6.4	11.3	9.0	16.5	15.0
Level of Service	C	A	B	A	B	B
Approach Delay (s)		7.5	11.3		16.1	
Approach LOS		A	B		B	

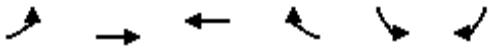
Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	50.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	1153	73	242	807	335	184	1060	415	434	859	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	3.0	2.7	2.7	3.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	160	1214	77	255	849	353	194	1116	437	457	904	303
RTOR Reduction (vph)	0	0	54	0	0	178	0	0	133	0	0	152
Lane Group Flow (vph)	160	1214	23	255	849	175	194	1116	304	457	904	151
Heavy Vehicles (%)	2%	4%	2%	2%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.6	34.5	34.5	10.0	34.9	34.9	10.9	36.0	36.0	14.0	39.1	39.1
Effective Green, g (s)	11.6	37.5	35.5	12.0	37.2	37.2	12.9	38.0	38.0	15.0	41.1	41.1
Actuated g/C Ratio	0.10	0.32	0.30	0.10	0.32	0.32	0.11	0.33	0.33	0.13	0.35	0.35
Clearance Time (s)	5.0	6.0	6.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	4.7	4.7	3.0	3.0	3.0	3.0	4.8	4.8	3.0	4.7	4.7
Lane Grp Cap (vph)	342	1606	482	354	1593	496	380	1659	516	442	1794	558
v/s Ratio Prot	0.05	c0.24		c0.07	0.17		0.06	c0.22		c0.13	c0.18	
v/s Ratio Perm			0.01			0.11			0.19			0.10
v/c Ratio	0.47	0.76	0.05	0.72	0.53	0.35	0.51	0.67	0.59	1.03	0.50	0.27
Uniform Delay, d1	49.5	35.4	28.6	50.6	32.5	30.4	48.8	33.9	32.7	50.8	29.7	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	2.4	0.1	7.0	0.3	0.4	1.2	1.4	2.5	51.8	0.4	0.5
Delay (s)	50.5	37.8	28.7	57.7	32.9	30.8	50.0	35.3	35.3	102.6	30.1	27.5
Level of Service	D	D	C	E	C	C	D	D	D	F	C	C
Approach Delay (s)		38.7			36.7			36.9			49.5	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	116.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

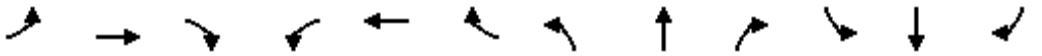
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	526	1422	1094	80	122	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1478	1770	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	554	1497	1152	84	128	260
RTOR Reduction (vph)	0	0	0	47	0	178
Lane Group Flow (vph)	554	1497	1152	37	128	82
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	9.0	36.1	23.1	23.1	6.7	15.7
Effective Green, g (s)	10.0	39.1	26.1	26.1	7.7	17.7
Actuated g/C Ratio	0.17	0.65	0.44	0.44	0.13	0.30
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	573	2310	1542	644	228	963
v/s Ratio Prot	c0.16	0.42	c0.33		c0.07	0.01
v/s Ratio Perm				0.02		0.02
v/c Ratio	0.97	0.65	0.75	0.06	0.56	0.09
Uniform Delay, d1	24.8	6.3	14.1	9.8	24.5	15.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.9	0.7	2.2	0.1	1.9	0.0
Delay (s)	53.7	7.0	16.3	9.8	26.4	15.3
Level of Service	D	A	B	A	C	B
Approach Delay (s)		19.6	15.9		18.9	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	16.1
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

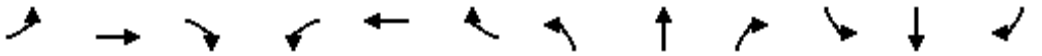
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	356	1132	123	82	875	100	163	0	350	271	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0	5.0	2.0	4.0	3.0	2.0		3.0	3.7		2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.99	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1529	1770	3539	1562	1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1529	1770	3539	1562	1770		1583	1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	375	1192	129	86	921	105	172	0	368	285	0	147
RTOR Reduction (vph)	0	0	69	0	0	0	0	0	125	0	0	0
Lane Group Flow (vph)	375	1192	60	86	921	105	172	0	243	285	0	147
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot		Perm	Prot		Free	Prot		custom	Prot		Free
Protected Phases	7	4		3	8		5			6		
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	19.0	45.1	45.1	3.9	30.0	98.6	14.0		14.0	15.9		98.6
Effective Green, g (s)	21.0	47.1	46.1	5.9	32.0	98.6	16.0		15.0	17.9		98.6
Actuated g/C Ratio	0.21	0.48	0.47	0.06	0.32	1.00	0.16		0.15	0.18		1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0		4.0	5.7		
Vehicle Extension (s)	2.0	4.8	4.8	2.0	4.8		2.0		2.0	2.0		
Lane Grp Cap (vph)	377	1691	715	106	1149	1562	287		241	321		1583
v/s Ratio Prot	c0.21	0.34		0.05	c0.26		0.10			c0.16		
v/s Ratio Perm			0.04			0.07			c0.15			0.09
v/c Ratio	0.99	0.70	0.08	0.81	0.80	0.07	0.60		1.01	0.89		0.09
Uniform Delay, d1	38.7	20.3	14.6	45.8	30.4	0.0	38.3		41.8	39.4		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	44.6	1.6	0.1	34.2	4.6	0.1	2.2		60.5	23.7		0.1
Delay (s)	83.4	21.9	14.7	80.0	35.0	0.1	40.6		102.3	63.1		0.1
Level of Service	F	C	B	F	D	A	D		F	E		A
Approach Delay (s)		35.0			35.2			82.6			41.6	
Approach LOS		C			D			F			D	

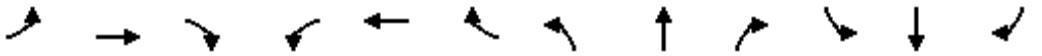
Intersection Summary			
HCM Average Control Delay	42.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	12.7
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	415	959	65	180	48	393	1489	73	54	1266	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	176	437	1009	68	189	51	414	1567	77	57	1333	194
RTOR Reduction (vph)	0	0	108	0	0	26	0	0	44	0	0	0
Lane Group Flow (vph)	176	437	901	68	189	25	414	1567	33	57	1333	194
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	9.3	60.0	60.0	4.0	55.7	55.7	11.0	33.0	33.0	3.0	25.0	120.0
Effective Green, g (s)	10.3	63.0	63.0	5.0	58.2	58.2	12.0	36.0	36.0	4.0	28.0	120.0
Actuated g/C Ratio	0.09	0.52	0.52	0.04	0.49	0.49	0.10	0.30	0.30	0.03	0.23	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	295	1858	831	74	2466	768	343	1526	475	59	1495	1583
v/s Ratio Prot	0.05	0.12		c0.04	0.04		c0.12	c0.31		0.03	0.21	
v/s Ratio Perm			c0.57			0.02			0.02			0.12
v/c Ratio	0.60	0.24	1.08	0.92	0.08	0.03	1.21	1.03	0.07	0.97	0.89	0.12
Uniform Delay, d1	52.8	15.4	28.5	57.3	16.5	16.2	54.0	42.0	30.0	57.9	44.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.1	56.7	75.4	0.0	0.0	117.4	30.2	0.3	103.6	7.3	0.2
Delay (s)	55.0	15.6	85.2	132.7	16.6	16.2	171.4	72.2	30.3	161.5	51.9	0.2
Level of Service	E	B	F	F	B	B	F	E	C	F	D	A
Approach Delay (s)		63.1			42.1			90.6			49.5	
Approach LOS		E			D			F			D	

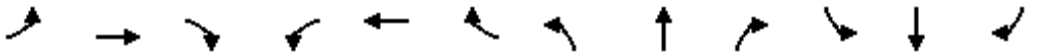
Intersection Summary			
HCM Average Control Delay	68.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	271	164	356	460	374	244	941	358	572	580	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0	5.0	3.0	2.6	5.0	5.0	2.6	3.0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1562	3433	1863	1562	1770	3539	1567	3433	3539	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1562	3433	1863	1562	1770	3539	1567	3433	3539	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	285	173	375	484	394	257	991	377	602	611	20
RTOR Reduction (vph)	0	0	0	0	0	140	0	0	64	0	0	0
Lane Group Flow (vph)	22	285	173	375	484	254	257	991	313	602	611	20
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		Free
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			Free			8			2			Free
Actuated Green, G (s)	3.4	20.5	97.9	13.4	30.5	47.6	16.8	26.9	40.3	17.1	28.2	97.9
Effective Green, g (s)	4.4	20.5	97.9	13.4	30.5	47.6	17.8	30.3	40.3	17.1	31.6	97.9
Actuated g/C Ratio	0.04	0.21	1.00	0.14	0.31	0.49	0.18	0.31	0.41	0.17	0.32	1.00
Clearance Time (s)	4.0	4.0		5.0	5.0	5.0	4.0	6.0	5.0	5.0	6.0	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	3.9	3.0	3.0	3.9	
Lane Grp Cap (vph)	80	390	1562	470	580	839	322	1095	645	600	1142	1548
v/s Ratio Prot	0.01	0.15		c0.11	c0.26	0.05	0.15	c0.28	0.07	c0.18	0.17	
v/s Ratio Perm			c0.11			0.11			0.13			0.01
v/c Ratio	0.28	0.73	0.11	0.80	0.83	0.30	0.80	0.91	0.49	1.00	0.54	0.01
Uniform Delay, d1	45.2	36.1	0.0	40.9	31.4	15.2	38.3	32.4	21.2	40.4	27.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	6.0	0.1	9.1	10.0	0.2	12.1	10.8	0.6	37.6	0.6	0.0
Delay (s)	45.9	42.1	0.1	50.1	41.4	15.4	50.4	43.2	21.8	78.0	27.7	0.0
Level of Service	D	D	A	D	D	B	D	D	C	E	C	A
Approach Delay (s)		27.1			35.8			39.4			51.8	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	97.9	Sum of lost time (s)	17.6
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		

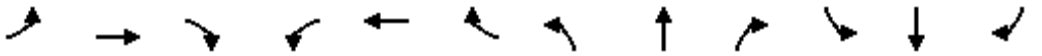
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	635	7	24	766	543	29	535	25	307	642	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	4.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1557	3433	3539	1562	3433	3539	1562	3433	3539	1558
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1557	3433	3539	1562	3433	3539	1562	3433	3539	1558
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	668	7	25	806	572	31	563	26	323	676	20
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	45	668	2	25	806	572	31	563	26	323	676	8
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	3		4	8		5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)	5.1	24.9	24.9	4.9	23.7	83.1	4.0	23.6	83.1	11.7	31.3	31.3
Effective Green, g (s)	6.1	25.9	25.9	5.9	24.7	83.1	5.0	24.6	83.1	12.7	32.3	32.3
Actuated g/C Ratio	0.07	0.31	0.31	0.07	0.30	1.00	0.06	0.30	1.00	0.15	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	5.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	3.0		2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)	252	1103	485	244	1052	1562	207	1048	1562	525	1376	606
v/s Ratio Prot	0.01	c0.19		0.01	c0.23		0.01	0.16		c0.09	c0.19	
v/s Ratio Perm			0.00			0.37			0.02			0.00
v/c Ratio	0.18	0.61	0.00	0.10	0.77	0.37	0.15	0.54	0.02	0.62	0.49	0.01
Uniform Delay, d1	36.1	24.3	19.7	36.1	26.6	0.0	37.0	24.5	0.0	32.9	19.2	15.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.6	0.0	0.1	3.4	0.7	0.1	0.9	0.0	1.5	0.5	0.0
Delay (s)	36.3	24.9	19.7	36.2	30.0	0.7	37.2	25.4	0.0	34.4	19.7	15.6
Level of Service	D	C	B	D	C	A	D	C	A	C	B	B
Approach Delay (s)		25.6			18.1			24.9			24.3	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

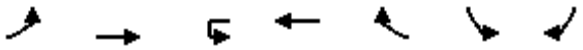
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	10	152	20	3	1	53	1117	7	1	1012	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1798	1478		1778		1770	3539	1583	1770	3539	1583
Flt Permitted		0.97	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1798	1478		1778		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	11	160	21	3	1	56	1176	7	1	1065	11
RTOR Reduction (vph)	0	0	136	0	1	0	0	0	2	0	0	5
Lane Group Flow (vph)	0	40	24	0	24	0	56	1176	5	1	1065	6
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		5.6	5.6		0.5		1.6	25.8	25.8	0.4	24.6	24.6
Effective Green, g (s)		7.5	7.5		2.4		2.6	28.8	28.8	1.4	27.6	27.6
Actuated g/C Ratio		0.15	0.15		0.05		0.05	0.57	0.57	0.03	0.55	0.55
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1	2.0	4.1	4.1
Lane Grp Cap (vph)		267	220		84		91	2018	903	49	1934	865
v/s Ratio Prot		c0.02			c0.01		c0.03	c0.33		0.00	0.30	
v/s Ratio Perm			0.02						0.00			0.00
v/c Ratio		0.15	0.11		0.29		0.62	0.58	0.01	0.02	0.55	0.01
Uniform Delay, d1		18.7	18.6		23.2		23.5	7.0	4.7	23.9	7.4	5.2
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1		0.7		8.4	0.5	0.0	0.1	0.4	0.0
Delay (s)		18.8	18.7		23.9		31.9	7.5	4.7	23.9	7.9	5.2
Level of Service		B	B		C		C	A	A	C	A	A
Approach Delay (s)		18.7			23.9			8.6			7.9	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	7.4
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



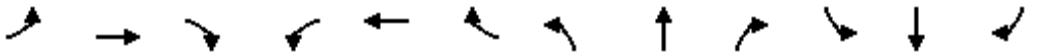
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (vph)	844	2322	0	1685	55	87	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	4.0	5.0	4.0
Lane Util. Factor	1.00	0.91		0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085		5085	1548	1770	1562
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085		5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	888	2444	0	1774	58	92	222
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	888	2444	0	1774	58	92	222
Confl. Peds. (#/hr)					5		5
Turn Type	Prot		Prot		Free		Free
Protected Phases	5	2	1	6		7	
Permitted Phases					Free		Free
Actuated Green, G (s)	61.0	125.0		59.0	150.0	15.0	150.0
Effective Green, g (s)	61.0	125.0		59.0	150.0	15.0	150.0
Actuated g/C Ratio	0.41	0.83		0.39	1.00	0.10	1.00
Clearance Time (s)	5.0	5.0		5.0		5.0	
Vehicle Extension (s)	3.0	3.0		3.0		3.0	
Lane Grp Cap (vph)	720	4238		2000	1548	177	1562
v/s Ratio Prot	c0.50	0.48		c0.35		c0.05	
v/s Ratio Perm					0.04		0.14
v/c Ratio	1.23	0.58		0.89	0.04	0.52	0.14
Uniform Delay, d1	44.5	4.0		42.4	0.0	64.1	0.0
Progression Factor	1.12	2.05		0.81	1.00	1.00	1.00
Incremental Delay, d2	106.2	0.1		5.9	0.0	10.5	0.2
Delay (s)	155.9	8.3		40.4	0.0	74.6	0.2
Level of Service	F	A		D	A	E	A
Approach Delay (s)		47.6		39.1		22.0	
Approach LOS		D		D		C	

Intersection Summary			
HCM Average Control Delay	43.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	118.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2305	109	100	1626	114	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.0	3.0	3.0	3.6	3.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1548	1770	4916	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1548	1770	4916	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2426	115	105	1712	120	166
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2426	115	105	1712	120	166
Confl. Peds. (#/hr)		5				5
Parking (#/hr)				0		
Turn Type		Free	Prot			Free
Protected Phases	4		3	8	2	
Permitted Phases		Free				Free
Actuated Green, G (s)	106.7	150.0	12.9	123.6	15.8	150.0
Effective Green, g (s)	109.7	150.0	13.9	126.6	16.8	150.0
Actuated g/C Ratio	0.73	1.00	0.09	0.84	0.11	1.00
Clearance Time (s)	6.0		4.0	6.0	4.6	
Vehicle Extension (s)	4.1		2.0	4.1	2.0	
Lane Grp Cap (vph)	3719	1548	164	4149	198	1562
v/s Ratio Prot	c0.48		c0.06	0.35	c0.07	
v/s Ratio Perm		0.07				0.11
v/c Ratio	0.65	0.07	0.64	0.41	0.61	0.11
Uniform Delay, d1	10.4	0.0	65.6	2.8	63.4	0.0
Progression Factor	0.36	1.00	0.68	2.42	1.00	1.00
Incremental Delay, d2	0.7	0.1	5.5	0.3	3.6	0.1
Delay (s)	4.4	0.1	50.1	7.1	67.0	0.1
Level of Service	A	A	D	A	E	A
Approach Delay (s)	4.2			9.5	28.2	
Approach LOS	A			A	C	

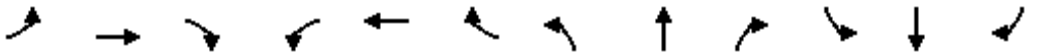
Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	266	2189	1	44	1524	944	3	5	32	412	3	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.3	2.3	3.0	2.3	3.0		3.0	6.3	5.0	5.0	3.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.99		1.00	0.97	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	1510	1770	5085	1562		1828	1542	3221	1616	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	1510	1770	5085	1562		1828	1542	3221	1616	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	280	2304	1	46	1604	994	3	5	34	434	3	195
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	30	0	0	0
Lane Group Flow (vph)	280	2304	1	46	1604	994	0	8	4	291	146	195
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Perm	Prot		Free	Split		custom	Split		Free
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			Free			1			Free
Actuated Green, G (s)	28.6	101.5	101.5	8.0	80.9	150.0		1.5	18.0	18.0	18.0	150.0
Effective Green, g (s)	29.6	104.9	104.9	9.0	84.3	150.0		2.5	19.0	20.3	20.3	150.0
Actuated g/C Ratio	0.20	0.70	0.70	0.06	0.56	1.00		0.02	0.13	0.14	0.14	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7			4.0	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	349	3556	1056	106	2858	1562		30	195	436	219	1583
v/s Ratio Prot	c0.16	c0.45		0.03	0.32			0.00		0.09	0.09	
v/s Ratio Perm			0.00			c0.64			0.00			0.12
v/c Ratio	0.80	0.65	0.00	0.43	0.56	0.64		0.27	0.02	0.67	0.67	0.12
Uniform Delay, d1	57.4	12.4	6.8	68.0	21.0	0.0		72.8	57.4	61.6	61.6	0.0
Progression Factor	1.17	0.09	0.01	1.09	0.30	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.1	0.7	0.0	2.5	0.2	1.7		4.7	0.0	3.8	7.5	0.2
Delay (s)	77.4	1.8	0.1	76.8	6.6	1.7		77.6	57.4	65.5	69.1	0.2
Level of Service	E	A	A	E	A	A		E	E	E	E	A
Approach Delay (s)		10.0			6.0			61.3			46.2	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

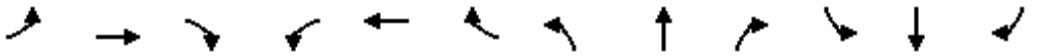
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	2	36	14	1	68	15	2446	43	100	2521	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.86	1.00	0.97	0.86	1.00
Frpb, ped/bikes		1.00	0.96	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1777	1527	1681	1695	1583	1770	6408	1550	3433	6408	1546
Flt Permitted		0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1777	1527	1681	1695	1583	1770	6408	1550	3433	6408	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	2	38	15	1	72	16	2575	45	105	2654	3
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	10	0	0	1
Lane Group Flow (vph)	0	62	2	8	8	72	16	2575	35	105	2654	2
Confl. Peds. (#/hr)			5						5			5
Turn Type	Split		Perm	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	1	1		2	2		3	8		7	4	
Permitted Phases			1			Free			8			4
Actuated Green, G (s)		8.4	8.4	5.7	5.7	150.0	2.9	108.6	108.6	8.9	114.6	114.6
Effective Green, g (s)		9.4	9.4	6.7	6.7	150.0	3.9	112.0	112.0	9.9	118.0	118.0
Actuated g/C Ratio		0.06	0.06	0.04	0.04	1.00	0.03	0.75	0.75	0.07	0.79	0.79
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0	2.8	2.8		2.0	3.7	3.7	2.0	3.7	3.7
Lane Grp Cap (vph)		111	96	75	76	1583	46	4785	1157	227	5041	1216
v/s Ratio Prot		c0.03		c0.00	0.00		0.01	0.40		c0.03	c0.41	
v/s Ratio Perm			0.00			0.05			0.02			0.00
v/c Ratio		0.56	0.02	0.11	0.11	0.05	0.35	0.54	0.03	0.46	0.53	0.00
Uniform Delay, d1		68.3	66.0	68.8	68.8	0.0	71.8	8.0	4.9	67.5	5.8	3.4
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.03	0.10	0.03	0.92	1.30	1.39
Incremental Delay, d2		3.4	0.0	0.6	0.5	0.1	1.4	0.1	0.0	0.4	0.3	0.0
Delay (s)		71.7	66.0	69.3	69.3	0.1	75.2	0.9	0.1	62.3	7.9	4.7
Level of Service		E	E	E	E	A	E	A	A	E	A	A
Approach Delay (s)		69.6			12.6			1.4			10.0	
Approach LOS		E			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

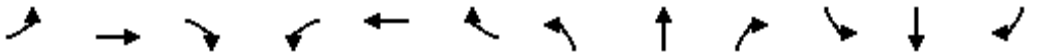
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	2314	189	365	2317	138	209	77	289	61	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	6408	1537	3433	6408	1560	1681	1730	1583	1681	1718	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	6408	1537	3433	6408	1560	1681	1730	1583	1681	1718	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	2436	199	384	2439	145	220	81	304	64	16	7
RTOR Reduction (vph)	0	0	70	0	0	0	0	0	230	0	0	0
Lane Group Flow (vph)	15	2436	129	384	2439	145	150	151	74	40	40	7
Confl. Peds. (#/hr)			10			10						10
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Free
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	6.4	81.1	81.1	22.7	97.4	150.0	18.1	18.1	18.1	9.7	9.7	150.0
Effective Green, g (s)	7.4	84.5	82.1	23.7	100.8	150.0	19.1	19.1	19.1	10.7	10.7	150.0
Actuated g/C Ratio	0.05	0.56	0.55	0.16	0.67	1.00	0.13	0.13	0.13	0.07	0.07	1.00
Clearance Time (s)	4.0	6.4	6.4	4.0	6.4		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.0	3.7	3.7	2.0	3.7		2.5	2.5	2.5	3.0	3.0	
Lane Grp Cap (vph)	169	3610	841	542	4306	1560	214	220	202	120	123	1560
v/s Ratio Prot	0.00	c0.38		c0.11	0.38		c0.09	0.09		c0.02	0.02	
v/s Ratio Perm			0.08			0.09			0.05			0.00
v/c Ratio	0.09	0.67	0.15	0.71	0.57	0.09	0.70	0.69	0.37	0.33	0.33	0.00
Uniform Delay, d1	68.1	23.1	16.8	59.9	13.0	0.0	62.7	62.6	59.9	66.3	66.2	0.0
Progression Factor	0.82	0.52	0.43	1.03	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.9	0.3	1.5	0.1	0.1	9.2	7.9	0.8	1.6	1.5	0.0
Delay (s)	56.0	12.9	7.5	63.1	11.2	0.1	71.9	70.5	60.8	67.9	67.8	0.0
Level of Service	E	B	A	E	B	A	E	E	E	E	E	A
Approach Delay (s)		12.7			17.4			66.0			62.4	
Approach LOS		B			B			E			E	

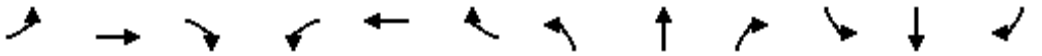
Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	308	1468	810	85	1568	389	939	513	44	962	779	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4	4.0	4.0	6.4	4.0	4.0	6.0	4.0	7.7	6.7	4.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.97	0.91	1.00	0.94	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	3433	5085	1583	4990	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	3433	5085	1583	4990	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	324	1545	853	89	1651	409	988	540	46	1013	820	291
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	324	1545	853	89	1651	409	988	540	46	1013	820	291
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	15.0	50.9	150.0	7.4	40.9	150.0	42.0	24.0	150.0	43.6	28.6	150.0
Effective Green, g (s)	15.0	50.9	150.0	7.4	40.9	150.0	42.0	24.0	150.0	43.6	28.6	150.0
Actuated g/C Ratio	0.10	0.34	1.00	0.05	0.27	1.00	0.28	0.16	1.00	0.29	0.19	1.00
Clearance Time (s)	6.4	6.4		4.0	6.4		4.0	6.0		7.7	6.7	
Vehicle Extension (s)	2.0	3.7		2.0	4.1		2.0	4.1		3.0	4.5	
Lane Grp Cap (vph)	343	2174	1583	169	1747	1583	961	814	1583	1450	970	1583
v/s Ratio Prot	c0.09	0.24		0.03	c0.26		c0.29	0.11		0.20	c0.16	
v/s Ratio Perm			0.54			0.26			0.03			0.18
v/c Ratio	0.94	0.71	0.54	0.53	0.95	0.26	1.03	0.66	0.03	0.70	0.85	0.18
Uniform Delay, d1	67.1	43.1	0.0	69.6	53.4	0.0	54.0	59.2	0.0	47.4	58.6	0.0
Progression Factor	0.76	0.66	1.00	1.10	0.61	1.00	1.00	1.00	1.00	0.61	0.65	1.00
Incremental Delay, d2	28.6	0.9	1.0	1.1	10.2	0.3	36.4	2.3	0.0	1.3	6.6	0.2
Delay (s)	79.9	29.5	1.0	77.5	42.9	0.3	90.4	61.5	0.0	30.0	44.7	0.2
Level of Service	E	C	A	E	D	A	F	E	A	C	D	A
Approach Delay (s)		26.5			36.3			77.9			31.6	
Approach LOS		C			D			E			C	

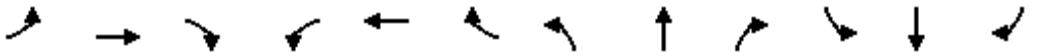
Intersection Summary			
HCM Average Control Delay	39.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	2418	4	13	2085	243	67	0	141	104	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	1525	1770	5085	1525	1681	1681	1526	1681	1687	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	1525	1770	5085	1525	1681	1681	1526	1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	2545	4	14	2195	256	71	0	148	109	1	35
RTOR Reduction (vph)	0	0	1	0	0	58	0	0	85	0	0	33
Lane Group Flow (vph)	51	2545	3	14	2195	198	35	36	63	54	56	2
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	7.2	110.6	110.6	2.0	105.4	105.4	9.2	9.2	9.2	9.6	9.6	9.6
Effective Green, g (s)	7.2	110.6	110.6	2.0	105.4	105.4	9.2	9.2	9.2	9.6	9.6	9.6
Actuated g/C Ratio	0.05	0.74	0.74	0.01	0.70	0.70	0.06	0.06	0.06	0.06	0.06	0.06
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	2.0	2.0	3.6	3.6	3.6
Lane Grp Cap (vph)	85	3749	1124	24	3573	1072	103	103	94	108	108	101
v/s Ratio Prot	c0.03	c0.50		0.01	0.43		0.02	0.02		0.03	c0.03	
v/s Ratio Perm			0.00			0.13			c0.04			0.00
v/c Ratio	0.60	0.68	0.00	0.58	0.61	0.18	0.34	0.35	0.67	0.50	0.52	0.02
Uniform Delay, d1	70.0	10.4	5.2	73.6	11.7	7.6	67.5	67.5	68.9	67.9	68.0	65.8
Progression Factor	1.21	0.63	0.29	1.29	0.82	0.66	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	0.4	0.0	13.1	0.5	0.2	0.7	0.7	12.9	4.4	4.9	0.1
Delay (s)	89.9	6.9	1.5	108.1	10.0	5.3	68.2	68.3	81.8	72.3	72.9	65.9
Level of Service	F	A	A	F	B	A	E	E	F	E	E	E
Approach Delay (s)		8.5			10.1			77.4			71.0	
Approach LOS		A			B			E			E	

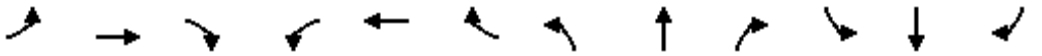
Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	162	2407	69	288	1958	210	271	227	320	706	105	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3485	6504	1589	3433	5085	1554	3433	5085	1539	3433	5085	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3485	6504	1589	3433	5085	1554	3433	5085	1539	3433	5085	1545
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	171	2534	73	303	2061	221	285	239	337	743	111	127
RTOR Reduction (vph)	0	0	18	0	0	76	0	0	119	0	0	103
Lane Group Flow (vph)	171	2534	55	303	2061	145	285	239	218	743	111	24
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	62.8	105.5	14.0	68.8	68.8	42.7	20.2	20.2	33.0	10.5	10.5
Effective Green, g (s)	8.0	62.8	105.5	14.0	68.8	68.8	42.7	20.2	20.2	33.0	10.5	10.5
Actuated g/C Ratio	0.05	0.42	0.70	0.09	0.46	0.46	0.28	0.13	0.13	0.22	0.07	0.07
Clearance Time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.8	4.8	2.5	2.5	4.8	4.8	2.5	3.4	3.4	2.5	3.4	3.4
Lane Grp Cap (vph)	186	2723	1160	320	2332	713	977	685	207	755	356	108
v/s Ratio Prot	0.05	c0.39	0.01	c0.09	0.41		0.08	0.05		c0.22	0.02	
v/s Ratio Perm			0.02			0.09			c0.14			0.02
v/c Ratio	0.92	0.93	0.05	0.95	0.88	0.20	0.29	0.35	1.05	0.98	0.31	0.22
Uniform Delay, d1	70.7	41.5	6.8	67.6	37.0	24.2	41.9	58.9	64.9	58.2	66.3	65.9
Progression Factor	1.01	0.58	0.06	0.75	0.53	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.1	5.7	0.0	28.7	3.3	0.2	0.1	0.4	76.7	28.6	0.6	1.2
Delay (s)	107.2	30.0	0.4	79.1	22.8	6.2	42.0	59.3	141.6	86.8	66.9	67.1
Level of Service	F	C	A	E	C	A	D	E	F	F	E	E
Approach Delay (s)		33.9			28.0			85.8			82.0	
Approach LOS		C			C			F			F	

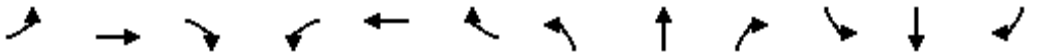
Intersection Summary			
HCM Average Control Delay	44.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	359	2445	702	216	2138	2	190	176	152	14	46	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	6.7	5.7	4.0	4.0	4.6	4.6
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1553	4990	1863	1562	1770	1863	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1553	4990	1863	1562	1770	1863	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	378	2574	739	227	2251	2	200	185	160	15	48	137
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	130
Lane Group Flow (vph)	378	2574	739	227	2251	2	200	185	160	15	48	7
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot		Free	Prot		Perm	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Actuated Green, G (s)	20.2	92.8	150.0	13.4	86.0	86.0	14.4	22.5	150.0	1.6	8.1	8.1
Effective Green, g (s)	20.2	92.8	150.0	13.4	86.0	86.0	14.4	22.5	150.0	1.6	8.1	8.1
Actuated g/C Ratio	0.13	0.62	1.00	0.09	0.57	0.57	0.10	0.15	1.00	0.01	0.05	0.05
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	6.7	5.7		4.0	4.6	4.6
Vehicle Extension (s)	2.0	4.1		2.0	4.1	4.1	2.0	4.3		2.0	2.0	2.0
Lane Grp Cap (vph)	462	3146	1562	307	2915	890	479	279	1562	19	101	150
v/s Ratio Prot	c0.11	c0.51		0.07	0.44		0.04	c0.10		0.01	0.03	
v/s Ratio Perm			c0.47			0.00			0.10			0.00
v/c Ratio	0.82	0.82	0.47	0.74	0.77	0.00	0.42	0.66	0.10	0.79	0.48	0.05
Uniform Delay, d1	63.1	22.1	0.0	66.6	24.5	13.7	63.9	60.2	0.0	74.0	68.9	67.3
Progression Factor	1.10	0.60	1.00	1.24	0.55	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.9	0.4	6.5	1.2	0.0	0.2	6.7	0.1	102.4	1.3	0.0
Delay (s)	73.7	14.2	0.4	88.9	14.5	3.5	64.1	66.9	0.1	176.5	70.2	67.3
Level of Service	E	B	A	F	B	A	E	E	A	F	E	E
Approach Delay (s)		17.6			21.3			46.3			76.2	
Approach LOS		B			C			D			E	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



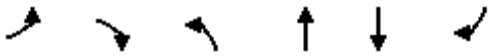
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	353	2060	4	10	1710	110	0	0	0	109	0	657
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4				6.0	6.0	6.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98				1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)	3433	5084		1770	5085	1555				1681	1681	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)	3433	5084		1770	5085	1555				1681	1681	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	372	2168	4	11	1800	116	0	0	0	115	0	692
RTOR Reduction (vph)	0	0	0	0	0	44	0	0	0	0	0	642
Lane Group Flow (vph)	372	2172	0	11	1800	72	0	0	0	57	58	50
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	22.4	114.8		1.2	93.6	93.6				10.8	10.8	10.8
Effective Green, g (s)	22.4	114.8		1.2	93.6	93.6				10.8	10.8	10.8
Actuated g/C Ratio	0.15	0.77		0.01	0.62	0.62				0.07	0.07	0.07
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4				6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.7		2.0	3.7	3.7				2.0	2.0	2.0
Lane Grp Cap (vph)	513	3891		14	3173	970				121	121	201
v/s Ratio Prot	c0.11	0.43		0.01	c0.35					0.03	c0.03	
v/s Ratio Perm						0.05						0.02
v/c Ratio	0.73	0.56		0.79	0.57	0.07				0.47	0.48	0.25
Uniform Delay, d1	60.9	7.2		74.3	16.4	11.1				66.9	66.9	65.8
Progression Factor	0.61	0.09		1.24	1.20	2.43				1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1		111.1	0.6	0.1				1.1	1.1	0.2
Delay (s)	39.8	0.8		203.2	20.3	27.2				67.9	68.0	66.0
Level of Service	D	A		F	C	C				E	E	E
Approach Delay (s)		6.5			21.8			0.0			66.3	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

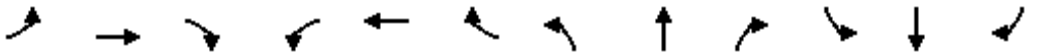
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	117	110	1659	47	65	1964
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	123	116	1746	49	68	2067
RTOR Reduction (vph)	0	97	0	21	0	0
Lane Group Flow (vph)	123	19	1746	28	68	2067
Turn Type		Perm		Perm	Prot	
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	12.1	12.1	42.8	42.8	4.0	50.8
Effective Green, g (s)	12.1	12.1	42.8	42.8	4.0	50.8
Actuated g/C Ratio	0.16	0.16	0.57	0.57	0.05	0.68
Clearance Time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Vehicle Extension (s)	2.5	2.5	3.5	3.5	2.0	3.7
Lane Grp Cap (vph)	286	255	2902	903	94	3444
v/s Ratio Prot	c0.07		0.34		0.04	c0.41
v/s Ratio Perm		0.01		0.02		
v/c Ratio	0.43	0.07	0.60	0.03	0.72	0.60
Uniform Delay, d1	28.3	26.7	10.5	7.0	35.0	6.6
Progression Factor	1.00	1.00	0.83	1.96	1.26	1.17
Incremental Delay, d2	0.8	0.1	0.9	0.1	18.2	0.7
Delay (s)	29.1	26.8	9.6	13.8	62.4	8.4
Level of Service	C	C	A	B	E	A
Approach Delay (s)	28.0		9.7			10.1
Approach LOS	C		A			B

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.1
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



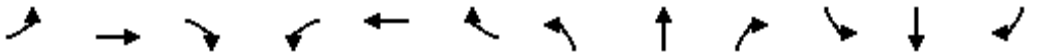
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	118	66	148	1600	1922	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	5085	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	124	69	156	1684	2023	191
RTOR Reduction (vph)	0	63	0	0	0	27
Lane Group Flow (vph)	124	6	156	1684	2023	164
Turn Type		Perm	Prot			Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Actuated Green, G (s)	12.1	12.1	13.5	126.5	108.7	108.7
Effective Green, g (s)	12.1	12.1	13.5	126.5	108.7	108.7
Actuated g/C Ratio	0.08	0.08	0.09	0.84	0.72	0.72
Clearance Time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.1	4.1	4.1
Lane Grp Cap (vph)	277	128	309	4288	3685	1147
v/s Ratio Prot	c0.04		c0.05	0.33	c0.40	
v/s Ratio Perm		0.00				0.10
v/c Ratio	0.45	0.04	0.50	0.39	0.55	0.14
Uniform Delay, d1	65.8	63.6	65.1	2.8	9.4	6.3
Progression Factor	1.00	1.00	1.22	0.65	0.77	0.92
Incremental Delay, d2	0.4	0.1	0.4	0.2	0.5	0.2
Delay (s)	66.2	63.7	79.9	2.0	7.8	6.1
Level of Service	E	E	E	A	A	A
Approach Delay (s)	65.3			8.6	7.6	
Approach LOS	E			A	A	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



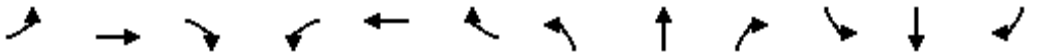
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	11	184	3	39	15	222	1706	8	9	1868	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1718	1583	1770	1784		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.85	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1510	1583	1770	1784		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	12	194	3	41	16	234	1796	8	9	1966	164
RTOR Reduction (vph)	0	0	160	0	9	0	0	0	3	0	0	38
Lane Group Flow (vph)	29	30	34	3	48	0	234	1796	5	9	1966	126
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	3.6	29.6	26.0	0.8	25.2		23.7	101.9	101.9	1.6	79.8	79.8
Effective Green, g (s)	3.6	29.6	26.0	0.8	25.2		23.7	101.9	101.9	1.6	79.8	79.8
Actuated g/C Ratio	0.02	0.20	0.17	0.01	0.17		0.16	0.68	0.68	0.01	0.53	0.53
Clearance Time (s)	4.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.8	3.8	2.0	2.5		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	40	303	274	9	300		280	3454	1075	19	2705	842
v/s Ratio Prot	c0.02	c0.00		0.00	c0.03		c0.13	0.35		0.01	c0.39	
v/s Ratio Perm		0.02	0.02						0.00			0.08
v/c Ratio	0.72	0.10	0.12	0.33	0.16		0.84	0.52	0.01	0.47	0.73	0.15
Uniform Delay, d1	72.7	49.3	52.4	74.3	53.3		61.3	11.9	7.7	73.8	26.8	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.67	2.33	2.52	1.15	0.30	0.10
Incremental Delay, d2	42.4	0.2	0.3	7.8	0.2		16.9	0.5	0.0	5.7	1.0	0.1
Delay (s)	115.1	49.5	52.6	82.1	53.5		57.9	28.3	19.5	90.4	9.1	1.9
Level of Service	F	D	D	F	D		E	C	B	F	A	A
Approach Delay (s)		59.4			55.0			31.6			8.9	
Approach LOS		E			D			C			A	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.7
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	8	5	149	258	297	32	1569	117	125	1649	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5068	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5068	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	8	5	157	272	313	34	1652	123	132	1736	41
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	2	8	0	157	272	313	34	1652	123	132	1776	0
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	1.1	8.8	8.8	19.1	26.0	150.0	6.4	93.4	150.0	10.1	97.1	
Effective Green, g (s)	1.1	8.8	8.8	19.1	26.0	150.0	6.4	93.4	150.0	10.1	97.1	
Actuated g/C Ratio	0.01	0.06	0.06	0.13	0.17	1.00	0.04	0.62	1.00	0.07	0.65	
Clearance Time (s)	4.0	4.9	4.9	4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	4.3		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	13	109	93	225	613	1583	76	3166	1583	231	3281	
v/s Ratio Prot	0.00	0.00		c0.09	c0.08		0.02	0.32		c0.04	c0.35	
v/s Ratio Perm			0.00			c0.20			0.08			
v/c Ratio	0.15	0.07	0.00	0.70	0.44	0.20	0.45	0.52	0.08	0.57	0.54	
Uniform Delay, d1	74.0	66.7	66.5	62.7	55.5	0.0	70.1	15.8	0.0	67.9	14.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	0.39	1.00	1.33	0.12	
Incremental Delay, d2	2.0	0.7	0.0	7.4	0.8	0.3	1.0	0.2	0.1	1.5	0.5	
Delay (s)	76.0	67.5	66.5	70.1	56.3	0.3	77.7	6.3	0.1	91.7	2.1	
Level of Service	E	E	E	E	E	A	E	A	A	F	A	
Approach Delay (s)		68.3			35.6			7.3			8.3	
Approach LOS		E			D			A			A	

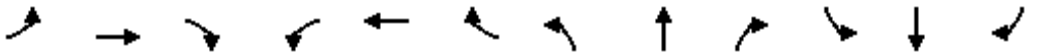
Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	1124	97	44	1732	618	277	1038	62	1087	470	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	5.7	5.7	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.94	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1554	3433	5085	1562	3433	5085	1553	4990	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1554	3433	5085	1562	3433	5085	1553	4990	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	99	1183	102	46	1823	651	292	1093	65	1144	495	181
RTOR Reduction (vph)	0	0	50	0	0	0	0	0	35	0	0	0
Lane Group Flow (vph)	99	1183	52	46	1823	651	292	1093	30	1144	495	181
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Perm	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			8			Free
Actuated Green, G (s)	5.0	56.8	56.8	4.0	55.8	150.0	16.5	34.5	34.5	35.0	53.0	150.0
Effective Green, g (s)	5.0	56.8	56.8	4.0	55.8	150.0	16.5	34.5	34.5	35.0	53.0	150.0
Actuated g/C Ratio	0.03	0.38	0.38	0.03	0.37	1.00	0.11	0.23	0.23	0.23	0.35	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	3.9	3.9	2.0	3.9		2.0	4.3	4.3	2.0	4.3	
Lane Grp Cap (vph)	114	1926	588	92	1892	1562	378	1170	357	1164	1797	1562
v/s Ratio Prot	c0.03	0.23		0.01	c0.36		0.09	c0.21		c0.23	0.10	
v/s Ratio Perm			0.03			c0.42			0.02			0.12
v/c Ratio	0.87	0.61	0.09	0.50	0.96	0.42	0.77	0.93	0.08	0.98	0.28	0.12
Uniform Delay, d1	72.2	37.7	30.0	72.0	46.1	0.0	64.9	56.6	45.3	57.2	34.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.68	0.47	1.00
Incremental Delay, d2	44.5	1.5	0.3	1.6	13.2	0.8	8.6	13.6	0.2	20.3	0.3	0.1
Delay (s)	116.7	39.2	30.3	73.6	59.3	0.8	73.6	70.3	45.5	59.0	16.5	0.1
Level of Service	F	D	C	E	E	A	E	E	D	E	B	A
Approach Delay (s)		44.1			44.4			69.8			41.6	
Approach LOS		D			D			E			D	

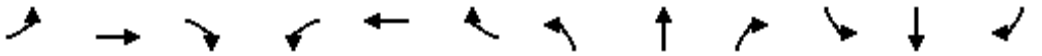
Intersection Summary			
HCM Average Control Delay	48.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	2	22	32	2	141	35	1104	27	70	520	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1778	1583		1779	1583	1770	3527		1770	3538	
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1778	1583		1779	1583	1770	3527		1770	3538	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	2	23	34	2	148	37	1162	28	74	547	1
RTOR Reduction (vph)	0	0	21	0	0	119	0	1	0	0	0	0
Lane Group Flow (vph)	0	48	2	0	36	29	37	1189	0	74	548	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		7.7	7.7		15.8	15.8	4.0	38.6		5.4	40.0	
Effective Green, g (s)		8.7	8.7		16.8	16.8	5.0	41.6		6.4	43.0	
Actuated g/C Ratio		0.10	0.10		0.20	0.20	0.06	0.49		0.08	0.50	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		182	162		351	312	104	1722		133	1786	
v/s Ratio Prot		c0.03			c0.02		0.02	c0.34		c0.04	0.15	
v/s Ratio Perm			0.00			0.02						
v/c Ratio		0.26	0.01		0.10	0.09	0.36	0.69		0.56	0.31	
Uniform Delay, d1		35.3	34.4		28.0	28.0	38.6	16.8		38.0	12.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.0	0.0	0.8	1.4		2.8	0.2	
Delay (s)		35.6	34.4		28.1	28.0	39.3	18.2		40.9	12.5	
Level of Service		D	C		C	C	D	B		D	B	
Approach Delay (s)		35.2			28.0			18.9			15.9	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	85.2	Sum of lost time (s)	11.7
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

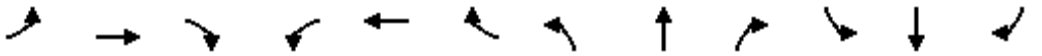


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	189	389	75	710	450	376	764	181	110	361	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1479	1856	3592	1476	3601	3592	1476	3565	5110	1459
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1479	1856	3592	1476	3601	3592	1476	3565	5110	1459
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	199	409	79	747	474	396	804	191	116	380	22
RTOR Reduction (vph)	0	0	118	0	0	247	0	0	97	0	0	15
Lane Group Flow (vph)	16	199	291	79	747	227	396	804	94	116	380	7
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	3.4	28.2	42.9	7.6	32.4	32.4	14.7	30.1	30.1	10.3	25.7	25.7
Effective Green, g (s)	4.4	31.2	44.9	8.6	35.4	35.4	15.7	33.1	33.1	11.3	28.7	28.7
Actuated g/C Ratio	0.05	0.33	0.47	0.09	0.37	0.37	0.16	0.35	0.35	0.12	0.30	0.30
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	85	1172	695	167	1330	547	591	1244	511	421	1534	438
v/s Ratio Prot	0.01	0.06	0.07	c0.04	c0.21		c0.11	c0.22		0.03	0.07	
v/s Ratio Perm			0.13			0.15			0.06			0.00
v/c Ratio	0.19	0.17	0.42	0.47	0.56	0.41	0.67	0.65	0.18	0.28	0.25	0.02
Uniform Delay, d1	43.9	23.0	16.7	41.3	23.9	22.4	37.5	26.3	21.8	38.4	25.3	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.1	0.8	0.8	0.9	2.4	1.4	0.3	0.1	0.1	0.0
Delay (s)	44.3	23.1	16.9	42.1	24.7	23.3	39.9	27.8	22.1	38.5	25.4	23.5
Level of Service	D	C	B	D	C	C	D	C	C	D	C	C
Approach Delay (s)		19.6			25.2			30.4			28.3	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	743	25	14	985	79	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	3.0	1.3	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	782	26	15	1037	83	137
RTOR Reduction (vph)	0	13	0	0	0	105
Lane Group Flow (vph)	782	13	15	1037	83	32
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	24.3	24.3	1.0	31.0	10.4	10.4
Effective Green, g (s)	27.0	25.3	2.0	33.7	11.4	11.4
Actuated g/C Ratio	0.55	0.51	0.04	0.68	0.23	0.23
Clearance Time (s)	5.7	5.7	4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1934	811	72	2414	408	365
v/s Ratio Prot	0.22		0.01	c0.29	c0.05	
v/s Ratio Perm		0.01				0.02
v/c Ratio	0.40	0.02	0.21	0.43	0.20	0.09
Uniform Delay, d1	6.5	5.9	22.9	3.5	15.3	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.5	0.2	0.1	0.0
Delay (s)	6.8	5.9	23.5	3.7	15.4	15.0
Level of Service	A	A	C	A	B	B
Approach Delay (s)	6.7			4.0	15.1	
Approach LOS	A			A	B	

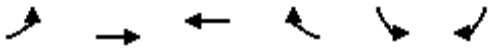
Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	4.3
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	171	583	62	352	257	616	1517	39	84	662	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	114	180	614	65	371	271	648	1597	41	88	697	18
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	114	180	614	65	371	271	648	1597	41	88	697	18
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.3	20.7	120.0	8.0	19.8	120.0	27.1	65.2	120.0	6.4	44.5	120.0
Effective Green, g (s)	10.3	23.4	120.0	9.0	22.5	120.0	28.1	68.2	120.0	7.4	47.5	120.0
Actuated g/C Ratio	0.09	0.19	1.00	0.08	0.19	1.00	0.23	0.57	1.00	0.06	0.40	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	295	690	1562	257	664	1562	804	2890	1562	212	2013	1562
v/s Ratio Prot	0.03	0.05		0.02	c0.10		c0.19	c0.31		0.03	0.14	
v/s Ratio Perm			c0.39			0.17			0.03			0.01
v/c Ratio	0.39	0.26	0.39	0.25	0.56	0.17	0.81	0.55	0.03	0.42	0.35	0.01
Uniform Delay, d1	51.9	41.0	0.0	52.3	44.2	0.0	43.4	16.3	0.0	54.2	25.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.7	0.2	1.5	0.2	5.6	0.8	0.0	0.5	0.1	0.0
Delay (s)	52.2	41.3	0.7	52.5	45.7	0.2	49.0	17.1	0.0	54.7	25.5	0.0
Level of Service	D	D	A	D	D	A	D	B	A	D	C	A
Approach Delay (s)		15.2			28.9			25.8			28.2	
Approach LOS		B			C			C			C	

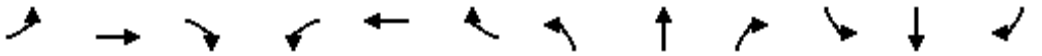
Intersection Summary			
HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.6
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	125	815	607	397	397	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1511	1736	1535
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1511	1736	1535
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	132	858	639	418	418	145
RTOR Reduction (vph)	0	0	0	227	0	57
Lane Group Flow (vph)	132	858	639	191	418	88
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	4.6	25.0	28.0	28.0	18.9	23.5
Effective Green, g (s)	5.6	27.0	30.0	30.0	21.9	29.5
Actuated g/C Ratio	0.09	0.41	0.46	0.46	0.33	0.45
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	148	1424	1583	689	578	688
v/s Ratio Prot	c0.08	c0.25	c0.18		c0.24	0.01
v/s Ratio Perm				0.13		0.04
v/c Ratio	0.89	0.60	0.40	0.28	0.72	0.13
Uniform Delay, d1	29.8	15.2	11.9	11.1	19.3	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	42.8	0.7	0.2	0.2	3.8	0.0
Delay (s)	72.6	15.9	12.1	11.4	23.1	10.6
Level of Service	E	B	B	B	C	B
Approach Delay (s)		23.5	11.8		19.9	
Approach LOS		C	B		B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	736	10	64	987	117	31	3	30	121	5	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00			1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3431		1787	3438	1487	1787	1623			1694	1445
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3431		1787	3438	1487	1787	1623			1694	1445
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	194	775	11	67	1039	123	33	3	32	127	5	27
RTOR Reduction (vph)	0	1	0	0	0	68	0	29	0	0	0	0
Lane Group Flow (vph)	194	785	0	67	1039	55	33	6	0	0	132	27
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	8.2	30.4		2.7	24.9	24.9	4.7	4.7			5.1	5.1
Effective Green, g (s)	9.2	32.4		3.7	26.9	26.9	5.7	5.7			6.1	6.1
Actuated g/C Ratio	0.15	0.53		0.06	0.44	0.44	0.09	0.09			0.10	0.10
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	261	1834		109	1526	660	168	153			171	145
v/s Ratio Prot	c0.11	0.23		0.04	c0.30		c0.02	0.00			c0.08	
v/s Ratio Perm						0.04						0.02
v/c Ratio	0.74	0.43		0.61	0.68	0.08	0.20	0.04			0.77	0.19
Uniform Delay, d1	24.6	8.5		27.8	13.4	9.7	25.3	25.0			26.6	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	9.6	0.2		7.0	1.3	0.1	0.2	0.0			19.2	0.6
Delay (s)	34.2	8.7		34.8	14.7	9.8	25.5	25.0			45.7	25.6
Level of Service	C	A		C	B	A	C	C			D	C
Approach Delay (s)		13.7			15.3			25.3			42.3	
Approach LOS		B			B			C			D	

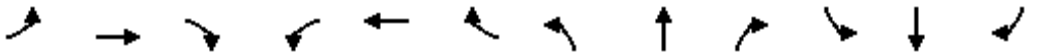
Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	12.7
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	920	287	357	857	126	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1564	1770	3539	1770	1572
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1564	1770	3539	1770	1572
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	968	302	376	902	133	242
RTOR Reduction (vph)	0	55	0	0	0	9
Lane Group Flow (vph)	968	247	376	902	133	233
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	22.9	32.4	13.6	40.5	9.5	23.1
Effective Green, g (s)	24.9	34.4	14.6	42.5	10.5	25.1
Actuated g/C Ratio	0.41	0.57	0.24	0.71	0.18	0.42
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1469	975	431	2507	310	736
v/s Ratio Prot	c0.27	0.04	c0.21	0.25	c0.08	0.08
v/s Ratio Perm		0.11				0.07
v/c Ratio	0.66	0.25	0.87	0.36	0.43	0.32
Uniform Delay, d1	14.1	6.4	21.8	3.4	22.1	11.7
Progression Factor	1.00	1.00	1.11	1.05	1.00	1.00
Incremental Delay, d2	1.1	0.0	16.5	0.4	0.3	0.1
Delay (s)	15.2	6.4	40.6	4.0	22.4	11.8
Level of Service	B	A	D	A	C	B
Approach Delay (s)	13.1			14.8	15.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

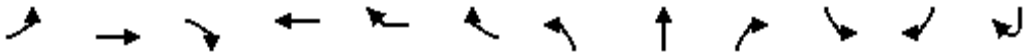
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	913	260	597	607	0	0	0	1174	0	0	625
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	4.0	4.0				4.0			5.0
Lane Util. Factor		0.91	1.00	0.97	0.95				1.00			1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00				1.00			1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00				1.00			1.00
Frt		1.00	0.85	1.00	1.00				0.86			0.86
Flt Protected		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (prot)		5085	1554	3433	3539				1611			1611
Flt Permitted		1.00	1.00	0.95	1.00				1.00			1.00
Satd. Flow (perm)		5085	1554	3433	3539				1611			1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	961	274	628	639	0	0	0	1236	0	0	658
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	961	216	628	639	0	0	0	1236	0	0	658
Confl. Peds. (#/hr)			5									
Turn Type			Perm	Prot					Free			custom
Protected Phases		2		1								
Permitted Phases			2		Free				Free			4
Actuated Green, G (s)		34.8	34.8	15.5	60.0				60.0			60.0
Effective Green, g (s)		34.8	34.8	15.5	60.0				60.0			60.0
Actuated g/C Ratio		0.58	0.58	0.26	1.00				1.00			1.00
Clearance Time (s)		5.7	5.7	4.0								5.0
Vehicle Extension (s)		3.4	3.4	2.0								3.0
Lane Grp Cap (vph)		2949	901	887	3539				1611			1611
v/s Ratio Prot		0.19		0.18								
v/s Ratio Perm			0.14		0.18				c0.77			0.41
v/c Ratio		0.33	0.24	0.71	0.18				0.77			0.41
Uniform Delay, d1		6.5	6.1	20.2	0.0				0.0			0.0
Progression Factor		0.42	0.23	1.18	1.00				1.00			1.00
Incremental Delay, d2		0.2	0.5	1.2	0.1				3.6			0.2
Delay (s)		3.0	1.9	25.0	0.1				3.6			0.2
Level of Service		A	A	C	A				A			A
Approach Delay (s)		2.8			12.4			3.6			0.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

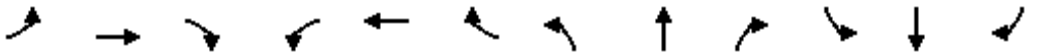


Movement	EBL	EBT	EBR	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL	SBR	SBR2
Lane Configurations												
Volume (vph)	188	1679	220	722	1135	276	162	368	719	97	320	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	5.7	5.7	5.7	4.0	5.3	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	0.86	0.86	1.00	1.00	0.95	1.00	0.97	0.88	
Frpb, ped/bikes	1.00	1.00	0.98	0.99	1.00	1.00	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	0.93	0.85	0.85	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1548	4455	1362	1583	1770	3539	1562	3433	2787	
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1548	4455	1362	1583	1770	3539	1562	3433	2787	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	198	1767	232	760	1195	291	171	387	757	102	337	61
RTOR Reduction (vph)	0	0	0	0	0	155	0	0	0	0	15	0
Lane Group Flow (vph)	198	1767	232	1358	597	136	171	387	757	102	383	0
Confl. Peds. (#/hr)			5		5				5		5	
Turn Type	Prot		Free		Prot	Perm	Prot		Free	Prot	custom	
Protected Phases	5	2		6	6		3	8		7	5	
Permitted Phases			Free			6			Free		4	
Actuated Green, G (s)	13.4	73.5	120.0	56.1	56.1	56.1	36.8	21.5	120.0	10.0	13.4	
Effective Green, g (s)	13.4	73.5	120.0	56.1	56.1	56.1	36.8	21.5	120.0	10.0	13.4	
Actuated g/C Ratio	0.11	0.61	1.00	0.47	0.47	0.47	0.31	0.18	1.00	0.08	0.11	
Clearance Time (s)	4.0	5.7		5.7	5.7	5.7	4.0	5.3		4.0	4.0	
Vehicle Extension (s)	2.0	3.4		3.4	3.4	3.4	4.0	4.0		2.0	2.0	
Lane Grp Cap (vph)	383	2168	1548	2083	637	740	543	634	1562	286	311	
v/s Ratio Prot	0.06	0.50		0.30	c0.44		0.10	c0.11		0.03	c0.14	
v/s Ratio Perm			0.15			0.09			c0.48			
v/c Ratio	0.52	0.82	0.15	0.86dr	0.94	0.18	0.31	0.61	0.48	0.36	1.23	
Uniform Delay, d1	50.2	18.0	0.0	24.5	30.3	18.6	31.9	45.4	0.0	52.0	53.3	
Progression Factor	0.98	0.92	1.00	0.48	0.48	0.10	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	2.8	0.2	0.7	19.6	0.1	0.5	2.0	1.1	0.3	128.9	
Delay (s)	49.8	19.3	0.2	12.3	34.3	2.1	32.4	47.4	1.1	52.2	182.2	
Level of Service	D	B	A	B	C	A	C	D	A	D	F	
Approach Delay (s)		20.0		16.8				18.8				
Approach LOS		C		B				B				

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

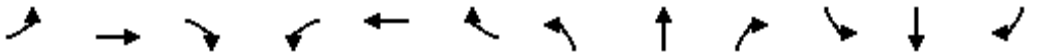
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	191	1990	337	68	1812	32	161	255	144	172	279	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.3	4.0	4.0	5.7	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.94	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	6408	1562	4990	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	6408	1562	4990	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	201	2095	355	72	1907	34	169	268	152	181	294	168
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	201	2095	355	72	1907	34	169	268	152	181	294	168
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.2	69.6	120.0	7.2	64.6	120.0	10.3	13.7	120.0	10.5	13.5	120.0
Effective Green, g (s)	12.2	69.6	120.0	7.2	64.6	120.0	10.3	13.7	120.0	10.5	13.5	120.0
Actuated g/C Ratio	0.10	0.58	1.00	0.06	0.54	1.00	0.09	0.11	1.00	0.09	0.11	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	3.9		2.0	3.5	
Lane Grp Cap (vph)	349	2949	1562	206	3450	1562	428	581	1562	300	572	1562
v/s Ratio Prot	0.06	c0.41		0.02	c0.30		0.03	c0.05		c0.05	0.06	
v/s Ratio Perm			c0.23			0.02			0.10			0.11
v/c Ratio	0.58	0.71	0.23	0.35	0.55	0.02	0.39	0.46	0.10	0.60	0.51	0.11
Uniform Delay, d1	51.4	18.0	0.0	54.2	18.2	0.0	51.9	49.7	0.0	52.7	50.2	0.0
Progression Factor	0.77	0.46	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.6	0.2	0.4	0.6	0.0	0.2	0.8	0.1	2.3	0.9	0.1
Delay (s)	40.4	9.0	0.2	54.5	18.8	0.0	52.1	50.5	0.1	55.1	51.1	0.1
Level of Service	D	A	A	D	B	A	D	D	A	E	D	A
Approach Delay (s)		10.2			19.8			38.0			38.9	
Approach LOS		B			B			D			D	

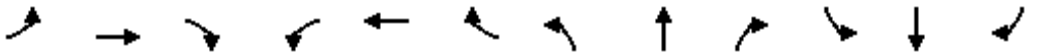
Intersection Summary					
HCM Average Control Delay	19.4	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.64				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		15.4	
Intersection Capacity Utilization	80.0%	ICU Level of Service		D	
Analysis Period (min)	15				

c Critical Lane Group



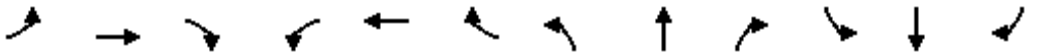
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	390	203	4	39	138	63	6	1311	82	54	1464	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.5	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	411	214	4	41	145	66	6	1380	86	57	1541	259
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	411	214	4	41	145	66	6	1380	86	57	1541	259
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	18.5	26.2	120.0	5.5	12.9	120.0	0.6	62.2	120.0	6.7	68.3	120.0
Effective Green, g (s)	19.5	28.7	120.0	6.5	15.4	120.0	1.6	64.7	120.0	7.7	70.8	120.0
Actuated g/C Ratio	0.16	0.24	1.00	0.05	0.13	1.00	0.01	0.54	1.00	0.06	0.59	1.00
Clearance Time (s)	4.0	5.7		4.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.3		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	558	846	1583	96	454	1583	24	2742	1583	114	3000	1583
v/s Ratio Prot	c0.12	0.06		0.02	c0.04		0.00	c0.27		0.03	c0.30	
v/s Ratio Perm			0.00			0.04			0.05			0.16
v/c Ratio	0.74	0.25	0.00	0.43	0.32	0.04	0.25	0.50	0.05	0.50	0.51	0.16
Uniform Delay, d1	47.8	37.0	0.0	54.9	47.5	0.0	58.6	17.5	0.0	54.3	14.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	0.3	0.0	1.1	0.5	0.0	2.0	0.2	0.1	1.3	0.6	0.2
Delay (s)	52.2	37.2	0.0	56.1	48.1	0.0	60.6	17.7	0.1	55.5	15.1	0.2
Level of Service	D	D	A	E	D	A	E	B	A	E	B	A
Approach Delay (s)		46.7			36.8			16.9			14.3	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	125	128	64	180	94	124	1291	51	172	1162	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	132	135	67	189	99	131	1359	54	181	1223	9
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	60	132	135	67	189	99	131	1359	54	181	1223	9
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.6	13.0	120.0	7.1	13.5	120.0	12.9	63.4	120.0	16.4	66.9	120.0
Effective Green, g (s)	7.6	15.5	120.0	8.1	16.0	120.0	13.9	65.9	120.0	17.4	69.4	120.0
Actuated g/C Ratio	0.06	0.13	1.00	0.07	0.13	1.00	0.12	0.55	1.00	0.14	0.58	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	112	457	1583	119	472	1583	205	2793	1583	257	2941	1583
v/s Ratio Prot	0.03	0.04		c0.04	c0.05		c0.07	c0.27		c0.10	0.24	
v/s Ratio Perm			c0.09			0.06			0.03			0.01
v/c Ratio	0.54	0.29	0.09	0.56	0.40	0.06	0.64	0.49	0.03	0.70	0.42	0.01
Uniform Delay, d1	54.5	47.3	0.0	54.2	47.6	0.0	50.7	16.6	0.0	48.9	14.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.4	0.1	3.6	0.7	0.1	4.7	0.6	0.0	7.0	0.2	0.0
Delay (s)	56.9	47.7	0.1	57.8	48.4	0.1	55.4	17.3	0.0	55.8	14.2	0.0
Level of Service	E	D	A	E	D	A	E	B	A	E	B	A
Approach Delay (s)		29.7			36.7			19.9			19.4	
Approach LOS		C			D			B			B	

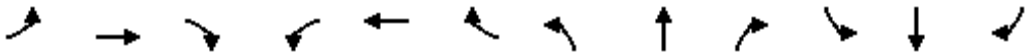
Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	1254	442	60	1310	609	589	514	19	446	482	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	6.0		4.0	6.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91		0.94	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5058		4990	5048	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5058		4990	5048	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	174	1320	465	63	1379	641	620	541	20	469	507	26
RTOR Reduction (vph)	0	0	207	0	0	0	0	3	0	0	4	0
Lane Group Flow (vph)	174	1320	258	63	1379	641	620	558	0	469	529	0
Turn Type	Prot		Perm	Prot		Free	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free						
Actuated Green, G (s)	10.6	54.6	54.6	4.0	48.0	120.0	25.6	26.3		15.1	15.8	
Effective Green, g (s)	10.6	54.6	54.6	4.0	48.0	120.0	25.6	26.3		15.1	15.8	
Actuated g/C Ratio	0.09	0.46	0.46	0.03	0.40	1.00	0.21	0.22		0.13	0.13	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	303	2314	720	114	2034	1583	732	1109		628	665	
v/s Ratio Prot	0.05	c0.26		0.02	c0.27		c0.18	0.11		0.09	c0.10	
v/s Ratio Perm			0.16			c0.40						
v/c Ratio	0.57	0.57	0.36	0.55	0.68	0.40	0.85	0.50		0.75	0.79	
Uniform Delay, d1	52.5	24.1	21.3	57.1	29.6	0.0	45.3	41.1		50.6	50.5	
Progression Factor	0.66	0.34	0.03	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.3	0.4	3.3	1.8	0.8	8.6	0.5		4.2	6.9	
Delay (s)	35.8	8.4	1.1	60.4	31.5	0.8	53.9	41.6		54.8	57.4	
Level of Service	D	A	A	E	C	A	D	D		D	E	
Approach Delay (s)		9.1			22.9			48.1			56.2	
Approach LOS		A			C			D			E	

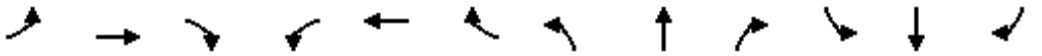
Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



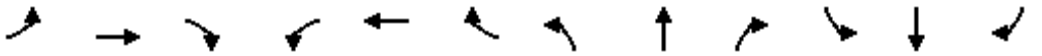
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	0	0	32	6	61	14	1107	13	35	540	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0				3.0	3.0	3.0	4.7		3.0	4.7	
Lane Util. Factor	1.00				1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00				1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770				1787	1583	1770	3533		1770	3536	
Flt Permitted	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770				1787	1583	1770	3533		1770	3536	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	0	0	34	6	64	15	1165	14	37	568	4
RTOR Reduction (vph)	0	0	0	0	0	55	0	1	0	0	0	0
Lane Group Flow (vph)	35	0	0	0	40	9	15	1178	0	37	572	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						4						
Actuated Green, G (s)	4.9				8.9	8.9	1.1	39.2		3.5	41.6	
Effective Green, g (s)	5.9				9.9	9.9	2.1	40.2		4.5	42.6	
Actuated g/C Ratio	0.08				0.13	0.13	0.03	0.54		0.06	0.57	
Clearance Time (s)	4.0				4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0				2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	141				238	211	50	1914		107	2030	
v/s Ratio Prot	c0.02				c0.02		0.01	c0.33		c0.02	0.16	
v/s Ratio Perm						0.01						
v/c Ratio	0.25				0.17	0.04	0.30	0.62		0.35	0.28	
Uniform Delay, d1	32.1				28.5	28.0	35.3	11.7		33.4	8.0	
Progression Factor	1.00				1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3				0.1	0.0	1.2	0.8		0.7	0.1	
Delay (s)	32.4				28.6	28.0	36.6	12.5		34.1	8.2	
Level of Service	C				C	C	D	B		C	A	
Approach Delay (s)		32.4			28.3			12.8			9.7	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	13.7
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



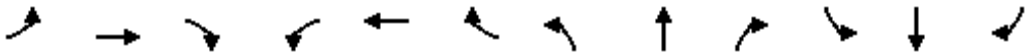
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	392	28	33	1155	69	43	5	16	21	17	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3504		1770	3539	1583		1783	1583		1813	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	3504		1770	3539	1583		1783	1583		1813	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	413	29	35	1216	73	45	5	17	22	18	8
RTOR Reduction (vph)	0	4	0	0	0	31	0	0	15	0	0	7
Lane Group Flow (vph)	61	438	0	35	1216	42	0	50	2	0	40	1
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	3.1	36.1		1.7	34.7	34.7		5.6	5.6		6.8	6.8
Effective Green, g (s)	4.1	39.1		2.7	37.7	35.7		6.6	6.6		7.8	7.8
Actuated g/C Ratio	0.06	0.58		0.04	0.56	0.53		0.10	0.10		0.11	0.11
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	107	2018		70	1965	832		173	154		208	182
v/s Ratio Prot	c0.03	0.12		0.02	c0.34			c0.03			c0.02	
v/s Ratio Perm						0.03			0.00			0.00
v/c Ratio	0.57	0.22		0.50	0.62	0.05		0.29	0.01		0.19	0.01
Uniform Delay, d1	31.0	7.0		31.9	10.2	7.8		28.5	27.7		27.2	26.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	4.5	0.2		2.0	1.1	0.1		0.3	0.0		0.2	0.0
Delay (s)	35.5	7.1		34.0	11.3	7.9		28.8	27.7		27.4	26.6
Level of Service	D	A		C	B	A		C	C		C	C
Approach Delay (s)		10.6			11.7			28.5			27.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	11.7
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



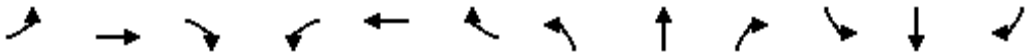
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	255	65	28	602	311	482	1279	34	208	719	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	268	68	29	634	327	507	1346	36	219	757	172
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	168	268	68	29	634	327	507	1346	36	219	757	172
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	15.1	36.6	120.0	6.0	27.5	120.0	22.8	46.9	120.0	11.1	35.2	120.0
Effective Green, g (s)	16.1	39.1	120.0	7.0	30.0	120.0	23.8	49.9	120.0	12.1	38.2	120.0
Actuated g/C Ratio	0.13	0.33	1.00	0.06	0.25	1.00	0.20	0.42	1.00	0.10	0.32	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	237	1153	1583	200	885	1583	681	2115	1583	346	1619	1583
v/s Ratio Prot	c0.09	0.08		0.01	c0.18		c0.15	c0.26		c0.06	0.15	
v/s Ratio Perm			0.04			0.21			0.02			0.11
v/c Ratio	0.71	0.23	0.04	0.14	0.72	0.21	0.74	0.64	0.02	0.63	0.47	0.11
Uniform Delay, d1	49.7	29.5	0.0	53.7	41.1	0.0	45.2	27.8	0.0	51.8	32.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	0.2	0.1	0.1	3.2	0.3	3.9	0.8	0.0	2.8	1.0	0.1
Delay (s)	57.4	29.7	0.1	53.8	44.3	0.3	49.1	28.6	0.0	54.6	33.7	0.1
Level of Service	E	C	A	D	D	A	D	C	A	D	C	A
Approach Delay (s)		34.9			30.0			33.6			32.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	446	0	0	192	274	2	2	0	385	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0		3.0	3.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		0.95	0.95	
Frt		1.00			1.00	0.85		1.00		1.00	0.99	
Flt Protected		1.00			1.00	1.00		0.98		0.95	0.95	
Satd. Flow (prot)		3539			1863	1583		1817		1681	1679	
Flt Permitted		1.00			1.00	1.00		1.00		0.95	0.95	
Satd. Flow (perm)		3539			1863	1583		1863		1681	1679	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	469	0	0	202	288	2	2	0	405	0	8
RTOR Reduction (vph)	0	0	0	0	0	118	0	0	0	0	4	0
Lane Group Flow (vph)	0	469	0	0	202	170	0	4	0	207	202	0
Turn Type						pt+ov	Perm			Split		
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases							3					
Actuated Green, G (s)		19.6			13.1	23.5		0.4		10.4	10.4	
Effective Green, g (s)		20.6			14.1	25.5		1.4		11.4	11.4	
Actuated g/C Ratio		0.48			0.33	0.59		0.03		0.26	0.26	
Clearance Time (s)		4.9			4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1			3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1684			607	932		60		443	442	
v/s Ratio Prot		c0.13			c0.11	0.11				c0.12	0.12	
v/s Ratio Perm								c0.00				
v/c Ratio		0.28			0.33	0.18		0.07		0.47	0.46	
Uniform Delay, d1		6.9			11.0	4.1		20.3		13.4	13.4	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.3	0.1		0.2		0.3	0.3	
Delay (s)		7.0			11.4	4.2		20.5		13.7	13.6	
Level of Service		A			B	A		C		B	B	
Approach Delay (s)		7.0			7.2			20.5			13.7	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	43.3	Sum of lost time (s)	13.8
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

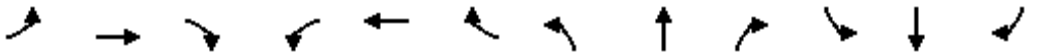


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	836	5	3	482	0	11	0	11	116	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9		3.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		1.00	1.00	
Frt		1.00		1.00	1.00			0.93		1.00	0.85	
Flt Protected		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3536		1770	3539			1695		1770	1583	
Flt Permitted		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3536		1770	3539			1695		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	880	5	3	507	0	12	0	12	122	0	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	12	0	0	3	0
Lane Group Flow (vph)	0	885	0	3	507	0	0	12	0	122	1	0
Turn Type				Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)		25.7		1.0	30.7			1.0		8.1	8.1	
Effective Green, g (s)		26.7		2.0	31.7			2.0		9.1	9.1	
Actuated g/C Ratio		0.51		0.04	0.60			0.04		0.17	0.17	
Clearance Time (s)		4.9		4.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1		2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1791		67	2129			64		306	273	
v/s Ratio Prot		c0.25		0.00	c0.14			c0.01		c0.07	0.00	
v/s Ratio Perm												
v/c Ratio		0.49		0.04	0.24			0.19		0.40	0.00	
Uniform Delay, d1		8.6		24.4	4.9			24.6		19.4	18.0	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.2		0.1	0.1			0.5		0.3	0.0	
Delay (s)		8.8		24.5	4.9			25.1		19.7	18.0	
Level of Service		A		C	A			C		B	B	
Approach Delay (s)		8.8			5.1			25.1			19.6	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	13.8
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

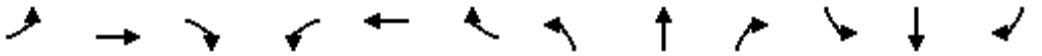
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	955	16	87	533	49	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		3.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3530		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3530		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1005	17	92	561	52	262
RTOR Reduction (vph)	2	0	0	0	0	166
Lane Group Flow (vph)	1020	0	92	561	52	96
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	23.4		2.2	29.6	7.5	7.5
Effective Green, g (s)	24.4		3.2	30.6	8.5	8.5
Actuated g/C Ratio	0.53		0.07	0.67	0.18	0.18
Clearance Time (s)	4.9		4.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	1872		123	2354	327	293
v/s Ratio Prot	c0.29		c0.05	0.16	0.03	
v/s Ratio Perm						c0.06
v/c Ratio	0.54		0.75	0.24	0.16	0.33
Uniform Delay, d1	7.1		21.0	3.1	15.7	16.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3		19.3	0.1	0.1	0.2
Delay (s)	7.5		40.3	3.1	15.8	16.5
Level of Service	A		D	A	B	B
Approach Delay (s)	7.5			8.4	16.4	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



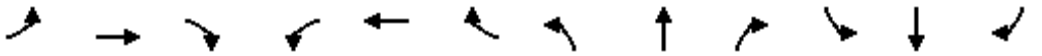
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	1109	4	34	738	90	4	6	12	408	4	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.98			0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3537		1770	3481			1706		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3537		1770	3481			1706		1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	1167	4	36	777	95	4	6	13	429	4	39
RTOR Reduction (vph)	0	0	0	0	6	0	0	13	0	0	0	21
Lane Group Flow (vph)	52	1171	0	36	866	0	0	10	0	214	219	18
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	6.8	75.1		4.2	72.5			2.4		20.8	20.8	20.8
Effective Green, g (s)	7.8	76.1		5.2	73.5			3.4		21.8	21.8	21.8
Actuated g/C Ratio	0.06	0.63		0.04	0.61			0.03		0.18	0.18	0.18
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	115	2243		77	2132			48		305	306	288
v/s Ratio Prot	c0.03	c0.33		0.02	0.25			c0.01		0.13	c0.13	
v/s Ratio Perm												0.01
v/c Ratio	0.45	0.52		0.47	0.41			0.22		0.70	0.72	0.06
Uniform Delay, d1	54.0	12.0		56.0	12.0			57.0		46.0	46.2	40.6
Progression Factor	1.00	1.00		1.26	0.27			1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.9		1.5	0.1			0.8		6.6	7.2	0.1
Delay (s)	55.1	12.9		72.0	3.4			57.8		52.7	53.4	40.7
Level of Service	E	B		E	A			E		D	D	D
Approach Delay (s)		14.7			6.1			57.8			52.0	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



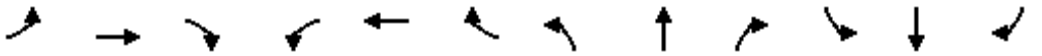
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	204	1321	15	70	688	906	19	7	29	669	11	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	1.00	*0.80		1.00	0.95	1.00	1.00	1.00	1.00	*0.70	*0.70	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	2975		1770	3539	1583	1770	1863	1583	1239	1244	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	2975		1770	3539	1583	1770	1863	1583	1239	1244	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	215	1391	16	74	724	954	20	7	31	704	12	195
RTOR Reduction (vph)	0	1	0	0	0	475	0	0	30	0	0	138
Lane Group Flow (vph)	215	1406	0	74	724	479	20	7	1	359	357	57
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	15.0	58.9		5.0	48.9	48.9	3.2	3.2	3.2	35.1	35.1	35.1
Effective Green, g (s)	15.0	58.9		5.0	48.9	48.9	3.2	3.2	3.2	35.1	35.1	35.1
Actuated g/C Ratio	0.12	0.49		0.04	0.41	0.41	0.03	0.03	0.03	0.29	0.29	0.29
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.3		2.0	3.5	3.5	2.0	2.0	2.0	2.3	2.3	2.3
Lane Grp Cap (vph)	221	1460		74	1442	645	47	50	42	362	364	463
v/s Ratio Prot	0.12	c0.47		c0.04	0.20		c0.01	0.00		c0.29	0.29	
v/s Ratio Perm						0.30			0.00			0.04
v/c Ratio	0.97	0.96		1.00	0.50	0.74	0.43	0.14	0.02	0.99	0.98	0.12
Uniform Delay, d1	52.3	29.5		57.5	26.5	30.2	57.5	57.1	56.9	42.3	42.1	31.2
Progression Factor	1.13	0.83		0.86	0.83	1.48	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	48.8	15.0		54.0	0.1	1.3	2.2	0.5	0.1	44.9	41.8	0.1
Delay (s)	107.7	39.3		103.3	22.1	45.9	59.7	57.5	56.9	87.2	83.9	31.2
Level of Service	F	D		F	C	D	E	E	E	F	F	C
Approach Delay (s)		48.4			38.5			58.0			73.9	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	49.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



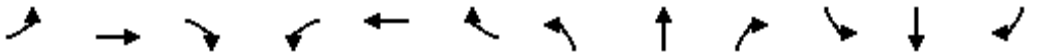
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	996	346	0	1504	1061	0	0	0	224	642	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.9		2.9	3.0				3.7	4.3	3.7
Lane Util. Factor		0.95	1.00		0.91	0.91				0.95	*0.85	1.00
Frt		1.00	0.85		0.98	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3539	1583		3309	1441				1681	1581	1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3539	1583		3309	1441				1681	1581	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1048	364	0	1583	1117	0	0	0	236	676	160
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	1048	364	0	1873	815	0	0	0	212	700	149
Turn Type			Prot			Free				Split		Prot
Protected Phases		2	2		6					4	4	4
Permitted Phases						Free						
Actuated Green, G (s)		62.1	62.1		62.1	120.0				47.7	47.7	47.7
Effective Green, g (s)		63.7	63.1		64.1	120.0				49.3	48.7	49.3
Actuated g/C Ratio		0.53	0.53		0.53	1.00				0.41	0.41	0.41
Clearance Time (s)		4.9	4.9		4.9					5.3	5.3	5.3
Vehicle Extension (s)		3.8	3.8		3.8					2.0	2.0	2.0
Lane Grp Cap (vph)		1879	832		1768	1441				691	642	650
v/s Ratio Prot		0.30	0.23		c0.57					0.13	c0.44	0.09
v/s Ratio Perm						0.57						
v/c Ratio		0.56	0.44		1.06	0.57				0.31	1.09	0.23
Uniform Delay, d1		18.8	17.5		28.0	0.0				23.8	35.6	23.0
Progression Factor		0.75	0.70		0.73	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.4	0.5		35.2	1.0				0.1	62.6	0.1
Delay (s)		14.4	12.8		55.5	1.0				23.9	98.3	23.1
Level of Service		B	B		E	A				C	F	C
Approach Delay (s)		14.0			39.1			0.0			72.3	
Approach LOS		B			D			A			E	

Intersection Summary			
HCM Average Control Delay	39.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	202	1018	0	0	1549	276	0	0	1396	0	0	1016
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.0			3.0			2.0
Lane Util. Factor	1.00	0.86			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			4793	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			4793	1362			1611			2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	213	1072	0	0	1631	291	0	0	1469	0	0	1069
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	7
Lane Group Flow (vph)	213	1072	0	0	1657	262	0	0	1469	0	0	1062
Turn Type	Prot					Free			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						Free			Free			
Actuated Green, G (s)	24.8	60.0			26.3	60.0			60.0			24.8
Effective Green, g (s)	26.8	60.0			28.3	60.0			60.0			26.8
Actuated g/C Ratio	0.45	1.00			0.47	1.00			1.00			0.45
Clearance Time (s)	4.0	4.9			4.9							4.0
Vehicle Extension (s)	2.0	3.9			3.8							2.0
Lane Grp Cap (vph)	791	6408			2261	1362			1611			1245
v/s Ratio Prot	0.12	0.17			0.35							0.38
v/s Ratio Perm						0.19			c0.91			
v/c Ratio	0.27	0.17			0.73	0.19			0.91			0.85
Uniform Delay, d1	10.4	0.0			12.8	0.0			0.0			14.8
Progression Factor	1.68	1.00			0.74	1.00			1.00			1.00
Incremental Delay, d2	0.1	0.0			1.7	0.2			9.4			5.6
Delay (s)	17.6	0.0			11.1	0.2			9.4			20.5
Level of Service	B	A			B	A			A			C
Approach Delay (s)		2.9			9.6			9.4			20.5	
Approach LOS		A			A			A			C	

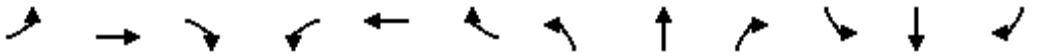
Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	387	1807	220	108	1332	64	332	557	70	54	165	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9	4.9	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1554	3433	6359		3433	3539	1547	3433	5085	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1554	3433	6359		3433	3539	1547	3433	5085	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	407	1902	232	114	1402	67	349	586	74	57	174	169
RTOR Reduction (vph)	0	0	75	0	5	0	0	0	56	0	0	5
Lane Group Flow (vph)	407	1902	157	114	1464	0	349	586	18	57	174	164
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		custom	Prot			Prot		Perm	Prot		custom
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2 3						8			4 5
Actuated Green, G (s)	23.8	61.7	81.1	6.8	44.7		14.5	29.7	29.7	4.0	18.8	42.6
Effective Green, g (s)	23.8	61.7	81.1	6.8	44.7		14.5	29.7	29.7	4.0	18.8	42.6
Actuated g/C Ratio	0.20	0.51	0.68	0.06	0.37		0.12	0.25	0.25	0.03	0.16	0.36
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.9	4.9	4.0	5.3	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5	4.5	2.0	5.1	
Lane Grp Cap (vph)	681	2615	1050	195	2369		415	876	383	114	797	551
v/s Ratio Prot	0.12	c0.37		0.03	c0.23		c0.10	c0.17		0.02	0.03	
v/s Ratio Perm			0.10						0.01			0.11
v/c Ratio	0.60	0.73	0.15	0.58	0.62		0.84	0.67	0.05	0.50	0.22	0.30
Uniform Delay, d1	43.7	22.6	7.0	55.2	30.7		51.6	40.7	34.4	57.0	44.2	27.9
Progression Factor	0.85	0.75	0.43	0.85	0.62		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	1.5	0.0	2.6	0.6		13.7	2.3	0.1	1.3	0.3	0.7
Delay (s)	38.1	18.4	3.0	49.4	19.6		65.3	43.1	34.5	58.3	44.5	28.6
Level of Service	D	B	A	D	B		E	D	C	E	D	C
Approach Delay (s)		20.2			21.8			50.1			39.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

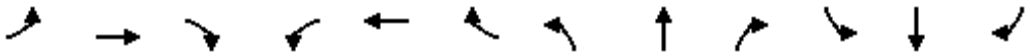
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	1943	48	43	1431	28	36	16	64	32	13	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5062		1770	5085	1523	1770	1863	1583	1681	1733	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (perm)	1770	5062		1770	5085	1523	1770	1863	1583	1681	1733	1555
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	2045	51	45	1506	29	38	17	67	34	14	40
RTOR Reduction (vph)	0	1	0	0	0	9	0	0	64	0	0	37
Lane Group Flow (vph)	93	2095	0	45	1506	20	38	17	3	24	24	3
Confl. Peds. (#/hr)			5			5						5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	10.2	82.8		4.8	77.4	77.4	5.6	5.6	5.6	9.9	9.9	9.9
Effective Green, g (s)	10.2	82.8		4.8	77.4	77.4	5.6	5.6	5.6	9.9	9.9	9.9
Actuated g/C Ratio	0.08	0.69		0.04	0.65	0.65	0.05	0.05	0.05	0.08	0.08	0.08
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.7		2.0	5.6	5.6	2.5	2.5	2.5	2.0	2.0	2.0
Lane Grp Cap (vph)	150	3493		71	3280	982	83	87	74	139	143	128
v/s Ratio Prot	0.05	c0.41		c0.03	0.30		c0.02	0.01		c0.01	0.01	
v/s Ratio Perm						0.01			0.00			0.00
v/c Ratio	0.62	0.60		0.63	0.46	0.02	0.46	0.20	0.04	0.17	0.17	0.03
Uniform Delay, d1	53.0	9.8		56.7	10.7	7.7	55.7	55.0	54.6	51.2	51.2	50.6
Progression Factor	1.24	0.35		0.50	0.12	0.04	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.6		11.4	0.2	0.0	2.9	0.8	0.2	0.2	0.2	0.0
Delay (s)	69.8	4.1		39.9	1.5	0.3	58.6	55.8	54.8	51.5	51.4	50.6
Level of Service	E	A		D	A	A	E	E	D	D	D	D
Approach Delay (s)		6.8			2.6			56.1			51.1	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

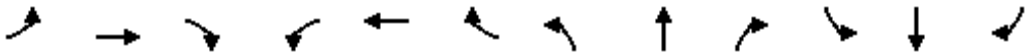
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	1913	37	15	1440	25	119	48	25	56	6	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	4.0		4.6	4.6	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00	0.90	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.97	
Satd. Flow (prot)	1770	5085	1435	1770	5085	1428	1681	1681		1681	1624	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.97	
Satd. Flow (perm)	1770	5085	1435	1770	5085	1428	1681	1681		1681	1624	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	2014	39	16	1516	26	125	51	26	59	6	12
RTOR Reduction (vph)	0	0	11	0	0	8	0	11	0	0	10	0
Lane Group Flow (vph)	12	2014	28	16	1516	18	101	90	0	39	28	0
Confl. Peds. (#/hr)			20			20						20
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.2	71.3	71.3	1.2	71.3	71.3	10.6	10.6		19.4	19.4	
Effective Green, g (s)	1.2	71.3	71.3	1.2	71.3	71.3	10.6	10.6		19.4	19.4	
Actuated g/C Ratio	0.01	0.59	0.59	0.01	0.59	0.59	0.09	0.09		0.16	0.16	
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	4.0		4.6	4.6	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	5.6	5.6	2.5	2.5		2.0	2.0	
Lane Grp Cap (vph)	18	3021	853	18	3021	848	148	148		272	263	
v/s Ratio Prot	0.01	c0.40		c0.01	0.30		c0.06	0.05		c0.02	0.02	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.67	0.67	0.03	0.89	0.50	0.02	0.68	0.61		0.14	0.11	
Uniform Delay, d1	59.2	16.4	10.1	59.3	14.1	10.0	53.1	52.7		43.2	42.9	
Progression Factor	0.68	0.36	0.26	0.75	0.08	0.01	1.00	1.00		1.00	1.00	
Incremental Delay, d2	46.7	0.7	0.0	147.1	0.6	0.0	11.2	5.9		0.1	0.1	
Delay (s)	86.9	6.6	2.6	191.3	1.7	0.1	64.3	58.6		43.3	43.0	
Level of Service	F	A	A	F	A	A	E	E		D	D	
Approach Delay (s)		7.0			3.6			61.4			43.1	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

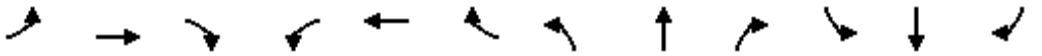
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	1777	66	5	1465	0	14	4	11	27	1	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.89		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5052		1770	5085		1770	1625		1770	1563	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5052		1770	5085		1770	1625		1770	1563	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	62	1871	69	5	1542	0	15	4	12	28	1	18
RTOR Reduction (vph)	0	2	0	0	0	0	0	11	0	0	17	0
Lane Group Flow (vph)	62	1938	0	5	1542	0	15	5	0	28	2	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	15.0	91.4		0.6	77.0		2.8	6.4		4.7	8.3	
Effective Green, g (s)	15.0	91.4		0.6	77.0		2.8	6.4		4.7	8.3	
Actuated g/C Ratio	0.12	0.76		0.00	0.64		0.02	0.05		0.04	0.07	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	5.8		2.0	5.8		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	221	3848		9	3263		41	87		69	108	
v/s Ratio Prot	0.04	c0.38		0.00	c0.30		0.01	c0.00		c0.02	0.00	
v/s Ratio Perm												
v/c Ratio	0.28	0.50		0.56	0.47		0.37	0.05		0.41	0.02	
Uniform Delay, d1	47.6	5.5		59.6	11.1		57.7	53.9		56.3	52.1	
Progression Factor	0.53	0.07		0.95	0.76		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.4		31.3	0.2		5.5	0.3		3.9	0.1	
Delay (s)	25.6	0.8		88.1	8.6		63.2	54.2		60.2	52.1	
Level of Service	C	A		F	A		E	D		E	D	
Approach Delay (s)		1.5			8.9			58.5			56.9	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

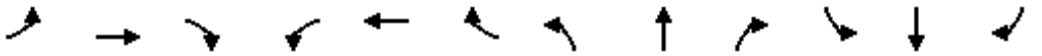
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	139	1579	49	44	1269	121	171	723	369	92	324	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.0	4.0	4.9	4.0	5.0	6.7	6.7	5.0	6.3	6.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1562	3433	5085	1562	3433	5085	1555	3433	5085	1556
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1562	3433	5085	1562	3433	5085	1555	3433	5085	1556
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	146	1662	52	46	1336	127	180	761	388	97	341	65
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	38	0	0	52
Lane Group Flow (vph)	146	1662	52	46	1336	127	180	761	350	97	341	13
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			8			4
Actuated Green, G (s)	8.4	63.0	120.0	2.4	57.0	120.0	9.9	28.9	28.9	5.1	24.5	24.5
Effective Green, g (s)	8.4	63.0	120.0	2.4	57.0	120.0	9.9	28.9	28.9	5.1	24.5	24.5
Actuated g/C Ratio	0.07	0.52	1.00	0.02	0.48	1.00	0.08	0.24	0.24	0.04	0.20	0.20
Clearance Time (s)	4.0	4.9		4.0	4.9		5.0	6.7	6.7	5.0	6.3	6.3
Vehicle Extension (s)	2.0	5.6		2.0	5.6		2.0	2.7	2.7	2.0	3.1	3.1
Lane Grp Cap (vph)	240	2670	1562	69	2415	1562	283	1225	374	146	1038	318
v/s Ratio Prot	0.04	c0.33		0.01	c0.26		0.05	0.15		c0.03	0.07	
v/s Ratio Perm			0.03			0.08			c0.23			0.01
v/c Ratio	0.61	0.62	0.03	0.67	0.55	0.08	0.64	0.62	0.94	0.66	0.33	0.04
Uniform Delay, d1	54.2	20.1	0.0	58.4	22.4	0.0	53.3	40.7	44.6	56.6	40.7	38.3
Progression Factor	0.88	0.73	1.00	0.70	0.51	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	1.0	0.0	12.7	0.4	0.1	3.4	0.9	30.4	8.5	0.2	0.1
Delay (s)	50.6	15.8	0.0	53.7	11.8	0.1	56.7	41.6	75.0	65.1	40.9	38.4
Level of Service	D	B	A	D	B	A	E	D	E	E	D	D
Approach Delay (s)		18.1			12.1			53.4			45.3	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

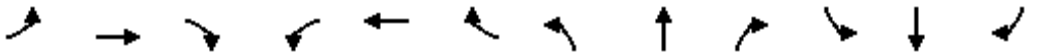


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	1474	222	265	1847	191	442	812	235	191	632	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	3.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	4.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1541
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1541
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	232	1552	234	279	1944	201	465	855	247	201	665	148
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	118
Lane Group Flow (vph)	232	1552	234	279	1944	201	465	855	247	201	665	30
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			4
Actuated Green, G (s)	9.8	45.0	120.0	12.0	49.2	120.0	17.7	30.2	120.0	11.1	23.6	23.6
Effective Green, g (s)	10.8	48.0	120.0	13.0	52.2	120.0	18.7	33.2	120.0	12.1	26.6	24.6
Actuated g/C Ratio	0.09	0.40	1.00	0.11	0.44	1.00	0.16	0.28	1.00	0.10	0.22	0.21
Clearance Time (s)	4.0	6.0		6.0	6.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.1		2.0	3.3		2.0	4.2		2.0	4.5	4.5
Lane Grp Cap (vph)	299	2034	1560	360	2212	1560	517	1407	1560	335	1127	316
v/s Ratio Prot	0.07	c0.31		0.08	c0.38		c0.14	c0.17		0.06	0.13	
v/s Ratio Perm			0.15			0.13			0.16			0.02
v/c Ratio	0.78	0.76	0.15	0.78	0.88	0.13	0.90	0.61	0.16	0.60	0.59	0.10
Uniform Delay, d1	53.4	31.1	0.0	52.1	31.0	0.0	49.7	37.7	0.0	51.6	41.8	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.9	2.8	0.2	9.2	4.4	0.2	17.9	0.9	0.2	1.9	1.1	0.2
Delay (s)	64.3	33.9	0.2	61.2	35.4	0.2	67.6	38.7	0.2	53.6	42.9	38.9
Level of Service	E	C	A	E	D	A	E	D	A	D	D	D
Approach Delay (s)		33.5			35.5			41.2			44.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	37.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

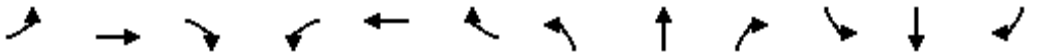
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	551	1674	411	551	2137	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	4.0	5.3	5.3	6.0	6.0
Lane Util. Factor	0.97	0.88	0.95	1.00	0.97	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	2787	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	3539	1583	3433	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	580	1762	433	580	2249	546
RTOR Reduction (vph)	0	0	0	193	0	0
Lane Group Flow (vph)	580	1762	433	387	2249	546
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	22.7	150.0	28.7	28.7	82.0	116.0
Effective Green, g (s)	22.7	150.0	28.7	28.7	82.0	116.0
Actuated g/C Ratio	0.15	1.00	0.19	0.19	0.55	0.77
Clearance Time (s)	5.3		5.3	5.3	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	520	2787	677	303	1877	1441
v/s Ratio Prot	c0.17		0.12		c0.66	0.29
v/s Ratio Perm		0.63		c0.24		
v/c Ratio	1.12	0.63	0.64	1.28	1.20	0.38
Uniform Delay, d1	63.6	0.0	55.9	60.6	34.0	5.5
Progression Factor	0.81	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	63.1	0.4	2.0	147.5	94.6	0.2
Delay (s)	114.4	0.4	57.9	208.1	128.6	5.6
Level of Service	F	A	E	F	F	A
Approach Delay (s)	28.7		143.9			104.6
Approach LOS	C		F			F

Intersection Summary			
HCM Average Control Delay	82.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	424	2172	59	99	1848	92	86	139	130	42	16	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3525		3433	3539	1583	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3525		3433	3539	1583	1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	446	2286	62	104	1945	97	91	146	137	44	17	323
RTOR Reduction (vph)	0	1	0	0	0	14	0	0	115	0	0	220
Lane Group Flow (vph)	446	2347	0	104	1945	83	91	146	22	44	17	103
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	18.3	94.2		8.9	84.8	84.8	11.9	23.6	23.6	5.4	16.0	16.0
Effective Green, g (s)	18.3	94.2		8.9	84.8	84.8	11.9	23.6	23.6	5.4	16.0	16.0
Actuated g/C Ratio	0.12	0.63		0.06	0.57	0.57	0.08	0.16	0.16	0.04	0.11	0.11
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3	4.0	4.6	4.6	4.0	5.7	5.7
Vehicle Extension (s)	2.0	3.9		2.0	3.9	3.9	2.0	4.4	4.4	2.0	3.6	3.6
Lane Grp Cap (vph)	419	2214		204	2001	895	140	293	249	124	199	169
v/s Ratio Prot	0.13	c0.67		0.03	c0.55		c0.05	0.08		0.01	0.01	
v/s Ratio Perm						0.05			0.01			c0.07
v/c Ratio	1.06	1.06		0.51	0.97	0.09	0.65	0.50	0.09	0.35	0.09	0.61
Uniform Delay, d1	65.8	27.9		68.4	31.5	15.0	67.0	57.8	54.0	70.6	60.4	64.0
Progression Factor	0.64	0.19		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.4	28.3		0.7	14.1	0.1	8.0	2.2	0.2	0.6	0.2	6.8
Delay (s)	76.7	33.7		69.2	45.6	15.0	75.0	60.0	54.2	71.2	60.6	70.8
Level of Service	E	C		E	D	B	E	E	D	E	E	E
Approach Delay (s)		40.6			45.3			61.5			70.4	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	45.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

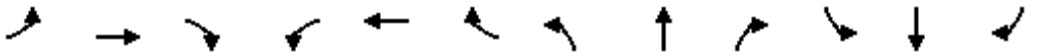


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	2371	6	13	2033	7	9	0	35	55	3	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3			11.0			11.0	11.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.89			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (prot)	1770	3538		1770	3537			1644			1778	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.92			0.70	1.00
Satd. Flow (perm)	1770	3538		1770	3537			1521			1309	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	2496	6	14	2140	7	9	0	37	58	3	23
RTOR Reduction (vph)	0	0	0	0	0	0	0	35	0	0	0	22
Lane Group Flow (vph)	6	2502	0	14	2147	0	0	11	0	0	61	1
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	7	4		3	8			2			2	
Permitted Phases							2			2		2
Actuated Green, G (s)	0.8	80.3		2.4	81.9			7.0			7.0	7.0
Effective Green, g (s)	0.8	80.3		2.4	81.9			7.0			7.0	7.0
Actuated g/C Ratio	0.01	0.73		0.02	0.74			0.06			0.06	0.06
Clearance Time (s)	4.0	5.3		4.0	5.3			11.0			11.0	11.0
Vehicle Extension (s)	2.0	3.0		2.0	3.9			2.0			2.0	2.0
Lane Grp Cap (vph)	13	2583		39	2633			97			83	101
v/s Ratio Prot	c0.00	c0.71		0.01	c0.61							
v/s Ratio Perm								0.01			c0.05	0.00
v/c Ratio	0.46	0.97		0.36	0.82			0.12			0.73	0.01
Uniform Delay, d1	54.4	13.7		53.0	9.1			48.6			50.6	48.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	9.1	11.7		2.1	2.1			0.2			24.9	0.0
Delay (s)	63.5	25.4		55.1	11.3			48.8			75.5	48.3
Level of Service	E	C		E	B			D			E	D
Approach Delay (s)		25.5			11.6			48.8			68.0	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	25.6
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2482	21	368	2069	0	357
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0	5.3		6.0
Lane Util. Factor	0.91		0.97	0.91		1.00
Frt	1.00		1.00	1.00		0.86
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5079		3433	5085		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5079		3433	5085		1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2613	22	387	2178	0	376
RTOR Reduction (vph)	1	0	0	0	0	1
Lane Group Flow (vph)	2634	0	387	2178	0	375
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	41.7		20.0	75.0		20.0
Effective Green, g (s)	41.7		20.0	75.0		20.0
Actuated g/C Ratio	0.56		0.27	1.00		0.27
Clearance Time (s)	7.3		6.0	5.3		6.0
Vehicle Extension (s)	3.5		2.0	3.5		2.0
Lane Grp Cap (vph)	2824		915	5085		430
v/s Ratio Prot	c0.52		0.11	0.43		c0.23
v/s Ratio Perm						
v/c Ratio	0.93		0.42	0.43		0.87
Uniform Delay, d1	15.4		22.7	0.0		26.3
Progression Factor	1.00		1.17	1.00		1.00
Incremental Delay, d2	7.1		0.0	0.1		17.0
Delay (s)	22.5		26.5	0.1		43.2
Level of Service	C		C	A		D
Approach Delay (s)	22.5			4.1	43.2	
Approach LOS	C			A	D	

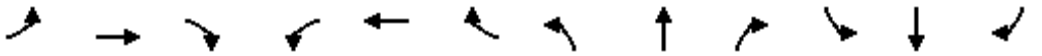
Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	303	1199	1337	67	1185	279	1146	682	152	215	179	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	4.0	4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4916	2787	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4916	2787	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	319	1262	1407	71	1247	294	1206	718	160	226	188	117
RTOR Reduction (vph)	0	0	0	0	0	94	0	0	82	0	0	108
Lane Group Flow (vph)	319	1262	1407	71	1247	200	1206	718	78	226	188	9
Parking (#/hr)		0										
Turn Type	Prot		Free	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			2			6
Actuated Green, G (s)	13.1	62.7	150.0	6.6	55.8	55.8	50.0	48.7	48.7	13.4	12.1	12.1
Effective Green, g (s)	13.1	62.7	150.0	6.6	55.8	55.8	50.0	48.7	48.7	13.4	12.1	12.1
Actuated g/C Ratio	0.09	0.42	1.00	0.04	0.37	0.37	0.33	0.32	0.32	0.09	0.08	0.08
Clearance Time (s)	4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.9		2.0	3.5	3.5	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	300	2055	2787	151	1317	589	1144	1149	514	307	410	128
v/s Ratio Prot	c0.09	0.26		0.02	c0.35		c0.35	0.20		c0.07	0.04	
v/s Ratio Perm			0.50			0.13			0.05			0.01
v/c Ratio	1.06	0.61	0.50	0.47	0.95	0.34	1.05	0.62	0.15	0.74	0.46	0.07
Uniform Delay, d1	68.5	34.2	0.0	70.0	45.7	33.9	50.0	42.9	36.0	66.6	65.8	63.8
Progression Factor	0.85	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	49.8	0.2	0.2	0.8	15.0	1.6	42.1	1.2	0.2	7.7	1.1	0.3
Delay (s)	108.1	25.8	0.2	70.8	60.6	35.4	92.1	44.1	36.2	74.3	66.9	64.1
Level of Service	F	C	A	E	E	D	F	D	D	E	E	E
Approach Delay (s)		22.6			56.5			71.3			69.4	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	47.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

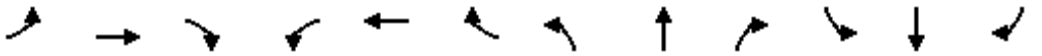


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	1331	81	24	1503	5	23	1	397	5	4	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.97	1.00
Satd. Flow (prot)	1762	3614		1711	3538			1777	1583		1812	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00		0.97	1.00
Satd. Flow (perm)	1762	3614		1711	3538			1777	1583		1812	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	1401	85	25	1582	5	24	1	418	5	4	6
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	63	0	0	6
Lane Group Flow (vph)	4	1483	0	25	1587	0	0	25	355	0	9	0
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	0.6	69.6		23.8	94.5			5.6	29.4		1.6	1.6
Effective Green, g (s)	1.6	72.1		24.8	97.0			7.1	32.4		3.1	3.1
Actuated g/C Ratio	0.01	0.60		0.21	0.81			0.06	0.27		0.03	0.03
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	23	2171		354	2860			105	460		47	38
v/s Ratio Prot	0.00	c0.41		0.01	0.45			0.01	c0.16		c0.00	
v/s Ratio Perm									0.06			0.00
v/c Ratio	0.17	0.68		0.07	0.55			0.24	0.77		0.19	0.00
Uniform Delay, d1	58.5	16.2		38.3	4.0			53.9	40.4		57.2	56.9
Progression Factor	1.00	1.00		1.23	0.63			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	1.0		0.0	0.7			0.4	7.2		0.7	0.0
Delay (s)	59.9	17.2		47.1	3.2			54.3	47.6		57.9	57.0
Level of Service	E	B		D	A			D	D		E	E
Approach Delay (s)		17.3			3.9			48.0			57.6	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

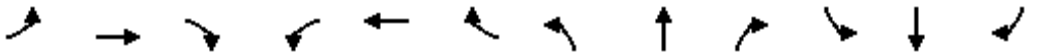
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1706	20	21	1377	152	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3533		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3533		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1796	21	22	1449	160	217
RTOR Reduction (vph)	1	0	0	0	0	89
Lane Group Flow (vph)	1816	0	22	1449	160	128
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	83.5		3.1	90.6	15.1	15.1
Effective Green, g (s)	85.5		5.1	92.6	17.1	17.1
Actuated g/C Ratio	0.71		0.04	0.77	0.14	0.14
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2517		75	2731	252	226
v/s Ratio Prot	c0.51		0.01	c0.41	c0.09	
v/s Ratio Perm						0.08
v/c Ratio	0.72		0.29	0.53	0.63	0.57
Uniform Delay, d1	10.2		55.7	5.3	48.5	48.0
Progression Factor	0.40		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		0.8	0.7	4.5	2.6
Delay (s)	5.0		56.5	6.0	53.0	50.6
Level of Service	A		E	A	D	D
Approach Delay (s)	5.0			6.8	51.6	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	299	894	689	153	508	28	775	1468	196	105	903	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3508		3433	3539	1552	3433	5085	1550
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3508		3433	3539	1552	3433	5085	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	315	941	725	161	535	29	816	1545	206	111	951	109
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	64	0	0	79
Lane Group Flow (vph)	315	941	725	161	561	0	816	1545	142	111	951	30
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	11.0	35.2	120.0	5.4	30.0		28.9	56.0	56.0	4.0	31.5	31.5
Effective Green, g (s)	12.0	36.7	120.0	6.4	31.5		29.9	57.5	57.0	5.0	33.0	32.5
Actuated g/C Ratio	0.10	0.31	1.00	0.05	0.26		0.25	0.48	0.48	0.04	0.28	0.27
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	343	1082	1561	183	921		855	1696	737	143	1398	420
v/s Ratio Prot	c0.09	c0.27		c0.05	0.16		c0.24	c0.44		0.03	c0.19	
v/s Ratio Perm			0.46						0.09			0.02
v/c Ratio	0.92	0.87	0.46	0.88	0.61		0.95	0.91	0.19	0.78	0.68	0.07
Uniform Delay, d1	53.5	39.4	0.0	56.4	38.8		44.4	28.9	18.2	56.9	38.8	32.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.82	1.26	1.58	1.00	1.00	1.00
Incremental Delay, d2	28.1	7.8	1.0	33.9	1.3		14.7	6.0	0.4	21.0	1.5	0.1
Delay (s)	81.6	47.2	1.0	90.3	40.2		51.3	42.3	29.1	77.9	40.3	32.6
Level of Service	F	D	A	F	D		D	D	C	E	D	C
Approach Delay (s)		35.7			51.3			44.1			43.1	
Approach LOS		D			D			D			D	

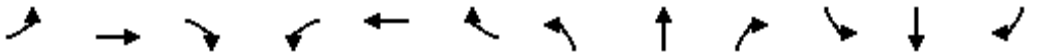
Intersection Summary			
HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	1172	2	19	674	82	42	67	89	4	8	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.98	1.00
Satd. Flow (prot)	1770	3538		1770	3467			1828	1550		1832	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00		0.98	1.00
Satd. Flow (perm)	1770	3538		1770	3467			1828	1550		1832	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	203	1234	2	20	709	86	44	71	94	4	8	5
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	54	0	0	5
Lane Group Flow (vph)	203	1236	0	20	790	0	0	115	40	0	12	0
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	20.4	84.9		2.9	67.4			12.5	12.5		2.4	2.4
Effective Green, g (s)	21.4	86.9		3.9	69.4			13.5	13.5		3.4	3.4
Actuated g/C Ratio	0.18	0.72		0.03	0.58			0.11	0.11		0.03	0.03
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	316	2562		58	2005			206	174		52	45
v/s Ratio Prot	c0.11	c0.35		0.01	c0.23			c0.06			c0.01	
v/s Ratio Perm									0.03			0.00
v/c Ratio	0.64	0.48		0.34	0.39			0.56	0.23		0.23	0.00
Uniform Delay, d1	45.7	7.0		56.8	13.8			50.4	48.5		57.0	56.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	3.3	0.3		1.3	0.6			1.9	0.2		0.8	0.0
Delay (s)	49.1	7.3		58.1	14.4			52.3	48.8		57.8	56.7
Level of Service	D	A		E	B			D	D		E	E
Approach Delay (s)		13.2			15.5			50.7			57.5	
Approach LOS		B			B			D			E	

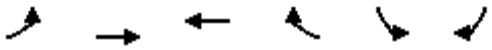
Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



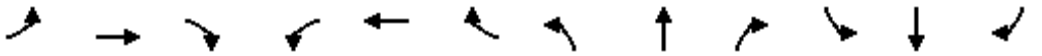
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	1225	0	25	660	14	68	2	26	43	0	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.8		3.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3528			1734			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.77	1.00
Satd. Flow (perm)	1770	3539		1770	3528			1379			1440	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	1289	0	26	695	15	72	2	27	45	0	67
RTOR Reduction (vph)	0	0	0	0	2	0	0	22	0	0	0	55
Lane Group Flow (vph)	22	1289	0	26	708	0	0	79	0	0	45	12
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	0.4	23.6		0.4	23.6			7.3			7.3	7.3
Effective Green, g (s)	1.4	26.1		1.4	26.1			8.3			8.3	8.3
Actuated g/C Ratio	0.03	0.59		0.03	0.59			0.19			0.19	0.19
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	56	2071		56	2065			257			268	295
v/s Ratio Prot	0.01	c0.36		c0.01	0.20							
v/s Ratio Perm								c0.06			0.03	0.01
v/c Ratio	0.39	0.62		0.46	0.34			0.31			0.17	0.04
Uniform Delay, d1	21.2	6.0		21.2	4.8			15.7			15.2	14.9
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.7	0.6		2.2	0.1			0.5			0.2	0.0
Delay (s)	22.8	6.6		23.4	4.9			16.2			15.5	14.9
Level of Service	C	A		C	A			B			B	B
Approach Delay (s)		6.9			5.6			16.2			15.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	44.6	Sum of lost time (s)	8.8
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	639	546	597	375	152	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.94		1.00	0.85
Flt Protected	0.95	0.98	1.00		0.95	1.00
Satd. Flow (prot)	1610	3337	3334		3433	1583
Flt Permitted	0.95	0.98	1.00		0.95	1.00
Satd. Flow (perm)	1610	3337	3334		3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	673	575	628	395	160	217
RTOR Reduction (vph)	0	0	121	0	0	44
Lane Group Flow (vph)	404	844	902	0	160	173
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	20.1	20.1	20.2		9.2	29.3
Effective Green, g (s)	22.6	22.6	22.7		10.2	34.3
Actuated g/C Ratio	0.36	0.36	0.36		0.16	0.55
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	579	1201	1205		558	935
v/s Ratio Prot	0.25	c0.25	c0.27		c0.05	0.07
v/s Ratio Perm						0.04
v/c Ratio	0.70	0.70	0.75		0.29	0.19
Uniform Delay, d1	17.2	17.2	17.6		23.1	7.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.1	2.1	2.3		0.1	0.2
Delay (s)	21.3	19.3	19.8		23.2	7.3
Level of Service	C	B	B		C	A
Approach Delay (s)		20.0	19.8		14.1	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	7.3
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



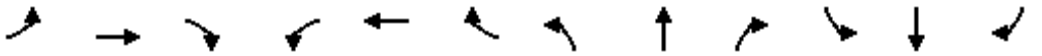
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	192	407	29	19	864	8	94	7	4	3	2	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.97	1.00
Satd. Flow (prot)	1770	3503		1770	3535			1561			1808	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.74			0.87	1.00
Satd. Flow (perm)	1770	3503		1770	3535			1213			1624	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	202	428	31	20	909	8	99	7	4	3	2	149
RTOR Reduction (vph)	0	5	0	0	1	0	0	2	0	0	0	122
Lane Group Flow (vph)	202	454	0	20	916	0	0	108	0	0	5	27
Parking (#/hr)								4				
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	7.8	30.4		1.0	23.6			8.6			8.6	8.6
Effective Green, g (s)	8.8	32.4		2.0	25.6			9.6			9.6	9.6
Actuated g/C Ratio	0.17	0.61		0.04	0.48			0.18			0.18	0.18
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3		2.0	4.3			2.0			2.0	2.0
Lane Grp Cap (vph)	292	2129		66	1698			218			293	285
v/s Ratio Prot	c0.11	0.13		0.01	c0.26							
v/s Ratio Perm								c0.09			0.00	0.02
v/c Ratio	0.69	0.21		0.30	0.54			0.49			0.02	0.09
Uniform Delay, d1	21.0	4.7		25.0	9.7			19.7			18.0	18.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	5.6	0.1		0.9	0.5			0.6			0.0	0.1
Delay (s)	26.6	4.8		25.9	10.2			20.3			18.0	18.3
Level of Service	C	A		C	B			C			B	B
Approach Delay (s)		11.4			10.5			20.3			18.3	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	9.3
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

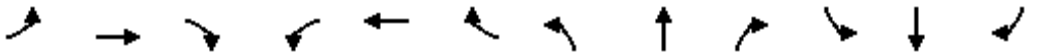
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	235	301	559	408	333	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5		2.8	2.5	3.0	2.8
Lane Util. Factor	0.97		1.00	1.00	1.00	1.00
Frt	0.92		1.00	0.85	1.00	1.00
Flt Protected	0.98		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3238		1863	1583	1770	1863
Flt Permitted	0.98		1.00	1.00	0.95	1.00
Satd. Flow (perm)	3238		1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	247	317	588	429	351	151
RTOR Reduction (vph)	249	0	0	48	0	0
Lane Group Flow (vph)	315	0	588	381	351	151
Turn Type				pm+ov	Prot	
Protected Phases	8		6	8	5	2
Permitted Phases				6		
Actuated Green, G (s)	12.9		25.0	37.9	15.7	44.7
Effective Green, g (s)	14.4		27.5	40.9	16.7	47.2
Actuated g/C Ratio	0.22		0.41	0.61	0.25	0.71
Clearance Time (s)	4.0		5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0		4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	697		766	968	442	1314
v/s Ratio Prot	c0.10		c0.32	0.08	c0.20	0.08
v/s Ratio Perm				0.16		
v/c Ratio	0.45		0.77	0.39	0.79	0.11
Uniform Delay, d1	22.8		17.0	6.7	23.5	3.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		5.1	0.1	8.9	0.1
Delay (s)	23.0		22.0	6.8	32.4	3.2
Level of Service	C		C	A	C	A
Approach Delay (s)	23.0		15.6			23.6
Approach LOS	C		B			C

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	66.9	Sum of lost time (s)	8.3
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



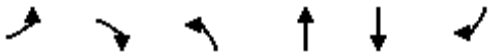
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	8	116	209	6	87	35	913	61	47	866	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	75	8	122	220	6	92	37	961	64	49	912	16
RTOR Reduction (vph)	0	0	105	0	0	67	0	0	42	0	0	10
Lane Group Flow (vph)	75	8	17	220	6	25	37	961	22	49	912	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.1	7.9	7.9	12.6	16.4	16.4	1.3	21.0	21.0	2.1	21.8	21.8
Effective Green, g (s)	5.1	8.9	8.9	13.6	17.4	17.4	2.3	23.0	22.0	3.1	23.8	22.8
Actuated g/C Ratio	0.08	0.14	0.14	0.21	0.27	0.27	0.04	0.36	0.35	0.05	0.37	0.36
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	142	261	222	378	510	433	64	1839	548	86	1903	567
v/s Ratio Prot	0.04	0.00		c0.12	0.00		0.02	c0.19		c0.03	0.18	
v/s Ratio Perm			c0.01			0.02			0.01			0.00
v/c Ratio	0.53	0.03	0.08	0.58	0.01	0.06	0.58	0.52	0.04	0.57	0.48	0.01
Uniform Delay, d1	28.1	23.6	23.8	22.4	16.8	17.1	30.2	16.0	13.8	29.6	15.2	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.0	0.1	2.3	0.0	0.1	12.0	0.3	0.0	8.4	0.2	0.0
Delay (s)	31.6	23.7	23.9	24.7	16.8	17.1	42.2	16.2	13.8	38.0	15.4	13.1
Level of Service	C	C	C	C	B	B	D	B	B	D	B	B
Approach Delay (s)		26.7			22.4			17.0			16.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	2	62	27	0	19	18	949	12	63	1137	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0		5.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770		1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770		1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	38	2	65	28	0	20	19	999	13	66	1197	11
RTOR Reduction (vph)	0	0	59	0	0	18	0	0	6	0	0	5
Lane Group Flow (vph)	38	2	6	28	0	2	19	999	7	66	1197	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.5	6.0	6.0	2.3		5.8	0.9	33.2	33.2	4.6	36.9	36.9
Effective Green, g (s)	2.5	6.0	6.0	2.3		5.8	1.9	35.2	34.2	5.6	38.9	37.9
Actuated g/C Ratio	0.04	0.09	0.09	0.03		0.09	0.03	0.53	0.52	0.08	0.59	0.57
Clearance Time (s)	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	67	169	144	62		139	51	2708	819	150	2993	908
v/s Ratio Prot	c0.02	0.00		0.02			0.01	0.20		c0.04	c0.24	
v/s Ratio Perm			c0.00			0.00			0.00			0.00
v/c Ratio	0.57	0.01	0.04	0.45		0.01	0.37	0.37	0.01	0.44	0.40	0.01
Uniform Delay, d1	31.3	27.4	27.4	31.3		27.5	31.5	9.0	7.7	28.8	7.3	6.0
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.6	0.0	0.1	5.2		0.0	4.5	0.1	0.0	2.1	0.1	0.0
Delay (s)	41.8	27.4	27.5	36.4		27.6	36.1	9.1	7.7	30.8	7.4	6.0
Level of Service	D	C	C	D		C	D	A	A	C	A	A
Approach Delay (s)		32.7			32.7			9.6			8.6	
Approach LOS		C			C			A			A	

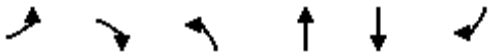
Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	205	116	52	1250	1002	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1562	1770	5085	5085	1548
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1562	1770	5085	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	122	55	1316	1055	99
RTOR Reduction (vph)	0	96	0	0	0	53
Lane Group Flow (vph)	216	26	55	1316	1055	46
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	9.1	9.1	1.7	25.8	20.1	20.1
Effective Green, g (s)	9.1	9.1	1.7	25.8	20.1	20.1
Actuated g/C Ratio	0.21	0.21	0.04	0.60	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	375	331	70	3058	2382	725
v/s Ratio Prot	c0.12		0.03	c0.26	0.21	
v/s Ratio Perm		0.02				0.03
v/c Ratio	0.58	0.08	0.79	0.43	0.44	0.06
Uniform Delay, d1	15.2	13.5	20.4	4.6	7.6	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.1	42.6	0.1	0.1	0.0
Delay (s)	17.3	13.6	63.0	4.7	7.8	6.3
Level of Service	B	B	E	A	A	A
Approach Delay (s)	16.0			7.0	7.6	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	42.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

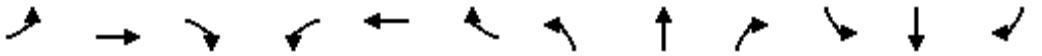
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	52	49	18	1250	1105	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1563	1770	5085	5085	1549
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1563	1770	5085	5085	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	52	19	1316	1163	13
RTOR Reduction (vph)	0	45	0	0	0	6
Lane Group Flow (vph)	55	7	19	1316	1163	7
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	4.7	4.7	0.4	23.1	18.7	18.7
Effective Green, g (s)	4.7	4.7	0.4	23.1	18.7	18.7
Actuated g/C Ratio	0.13	0.13	0.01	0.65	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	232	205	20	3281	2656	809
v/s Ratio Prot	c0.03		0.01	c0.26	0.23	
v/s Ratio Perm		0.00				0.00
v/c Ratio	0.24	0.03	0.95	0.40	0.44	0.01
Uniform Delay, d1	13.9	13.6	17.7	3.0	5.3	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	175.6	0.1	0.1	0.0
Delay (s)	14.5	13.6	193.3	3.1	5.4	4.1
Level of Service	B	B	F	A	A	A
Approach Delay (s)	14.1			5.8	5.4	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	35.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



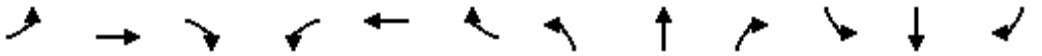
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	0	93	31	0	15	30	1414	11	4	1059	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.93			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1681			1715		1770	5085	1546	1770	5085	1546
Flt Permitted		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1681			1715		1770	5085	1546	1770	5085	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	0	98	33	0	16	32	1488	12	4	1115	16
RTOR Reduction (vph)	0	36	0	0	15	0	0	0	3	0	0	5
Lane Group Flow (vph)	0	155	0	0	34	0	32	1488	9	4	1115	11
Confl. Peds. (#/hr)			2			2	2		2			2
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)		12.9			6.5		1.3	34.5	34.5	0.4	33.6	33.6
Effective Green, g (s)		12.9			6.5		1.3	34.5	34.5	0.4	33.6	33.6
Actuated g/C Ratio		0.18			0.09		0.02	0.49	0.49	0.01	0.48	0.48
Clearance Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		308			159		33	2495	759	10	2430	739
v/s Ratio Prot		c0.09			c0.02		c0.02	c0.29		0.00	0.22	
v/s Ratio Perm									0.01			0.01
v/c Ratio		0.50			0.22		0.97	0.60	0.01	0.40	0.46	0.01
Uniform Delay, d1		25.8			29.5		34.5	12.9	9.2	34.8	12.3	9.6
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.3			0.7		142.6	0.4	0.0	24.2	0.1	0.0
Delay (s)		27.1			30.2		177.1	13.3	9.2	59.1	12.4	9.7
Level of Service		C			C		F	B	A	E	B	A
Approach Delay (s)		27.1			30.2			16.7			12.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

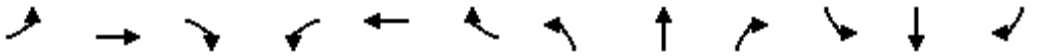
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	696	77	36	460	30	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	733	81	38	484	32	16
RTOR Reduction (vph)	0	32	0	0	0	14
Lane Group Flow (vph)	733	49	38	484	32	2
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	22.9	22.9	1.4	30.0	3.9	3.9
Effective Green, g (s)	26.3	26.3	2.4	33.4	4.9	4.9
Actuated g/C Ratio	0.60	0.60	0.06	0.77	0.11	0.11
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2135	955	97	2711	199	178
v/s Ratio Prot	c0.21		c0.02	0.14	c0.02	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.34	0.05	0.39	0.18	0.16	0.01
Uniform Delay, d1	4.3	3.5	19.9	1.4	17.5	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	1.0	0.1	0.1	0.0
Delay (s)	4.5	3.6	20.8	1.4	17.6	17.2
Level of Service	A	A	C	A	B	B
Approach Delay (s)	4.4			2.9	17.5	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	10	34	53	18	85	35	974	18	24	784	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	139	11	36	56	19	89	37	1025	19	25	825	26
RTOR Reduction (vph)	0	0	29	0	0	76	0	0	11	0	0	16
Lane Group Flow (vph)	139	11	7	56	19	13	37	1025	8	25	825	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.7	11.0	11.0	3.2	7.5	7.5	1.9	23.8	23.8	0.5	22.4	22.4
Effective Green, g (s)	7.7	12.0	12.0	4.2	8.5	8.5	2.9	25.8	24.8	1.5	24.4	23.4
Actuated g/C Ratio	0.13	0.21	0.21	0.07	0.15	0.15	0.05	0.44	0.42	0.03	0.42	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	233	382	325	127	271	230	88	2243	671	45	2121	633
v/s Ratio Prot	c0.08	c0.01		0.03	c0.01		c0.02	c0.20		0.01	0.16	
v/s Ratio Perm			0.00			0.01			0.01			0.01
v/c Ratio	0.60	0.03	0.02	0.44	0.07	0.06	0.42	0.46	0.01	0.56	0.39	0.02
Uniform Delay, d1	23.9	18.6	18.6	26.0	21.6	21.5	27.0	11.4	9.8	28.2	11.9	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.0	0.0	2.4	0.1	0.1	3.2	0.1	0.0	14.0	0.1	0.0
Delay (s)	28.0	18.6	18.6	28.5	21.7	21.6	30.2	11.6	9.8	42.2	12.0	10.6
Level of Service	C	B	B	C	C	C	C	B	A	D	B	B
Approach Delay (s)		25.6			24.0			12.2			12.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



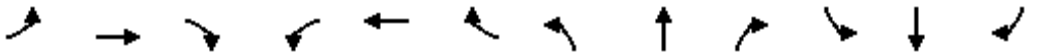
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	82	114	193	30	0	37	942	96	3	856	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	88	86	120	203	32	0	39	992	101	3	901	13
RTOR Reduction (vph)	0	0	102	0	0	0	0	0	64	0	0	8
Lane Group Flow (vph)	88	86	18	203	32	0	39	992	37	3	901	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.8	9.5	9.5	12.1	12.8		1.6	22.5	22.5	0.7	21.6	21.6
Effective Green, g (s)	8.8	9.5	9.5	12.1	12.8		1.6	22.5	22.5	0.7	21.6	21.6
Actuated g/C Ratio	0.14	0.15	0.15	0.20	0.21		0.03	0.36	0.36	0.01	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.5	5.5	3.0	5.5	5.5
Lane Grp Cap (vph)	252	286	243	347	386		46	1851	576	20	1777	553
v/s Ratio Prot	0.05	c0.05		c0.11	c0.02		c0.02	c0.20		0.00	0.18	
v/s Ratio Perm			0.01						0.02			0.00
v/c Ratio	0.35	0.30	0.08	0.59	0.08		0.85	0.54	0.06	0.15	0.51	0.01
Uniform Delay, d1	23.9	23.2	22.4	22.6	19.8		30.0	15.5	12.8	30.3	15.9	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.6	0.1	2.5	0.1		76.6	0.6	0.1	3.5	0.6	0.0
Delay (s)	24.8	23.8	22.5	25.1	19.9		106.6	16.2	12.9	33.7	16.5	13.1
Level of Service	C	C	C	C	B		F	B	B	C	B	B
Approach Delay (s)		23.6			24.4			19.0			16.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

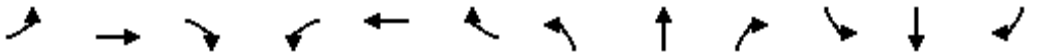
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	60	0	1080	31	2	1161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	1.00		1.00	0.85	1.00	1.00
Flt Protected	0.95		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770		5085	1583	1770	5085
Flt Permitted	0.95		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	0	1137	33	2	1222
RTOR Reduction (vph)	0	0	0	13	0	0
Lane Group Flow (vph)	63	0	1137	20	2	1222
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.8		33.0	33.0	0.8	38.8
Effective Green, g (s)	6.8		33.0	33.0	0.8	38.8
Actuated g/C Ratio	0.12		0.59	0.59	0.01	0.70
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	216		3018	940	25	3549
v/s Ratio Prot	c0.04		c0.22		0.00	c0.24
v/s Ratio Perm				0.01		
v/c Ratio	0.29		0.38	0.02	0.08	0.34
Uniform Delay, d1	22.2		5.9	4.7	27.0	3.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		0.1	0.0	1.4	0.1
Delay (s)	23.0		6.0	4.7	28.4	3.4
Level of Service	C		A	A	C	A
Approach Delay (s)	23.0		6.0			3.4
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	6	54	141	17	24	15	1125	58	5	1192	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	6	57	148	18	25	16	1184	61	5	1255	148
RTOR Reduction (vph)	0	0	51	0	0	20	0	0	35	0	0	89
Lane Group Flow (vph)	55	6	6	148	18	5	16	1184	26	5	1255	59
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.9	6.1	6.1	8.2	11.4	11.4	0.9	23.3	23.3	0.7	23.1	23.1
Effective Green, g (s)	2.9	6.1	6.1	8.2	11.4	11.4	0.9	23.3	23.3	0.7	23.1	23.1
Actuated g/C Ratio	0.05	0.10	0.10	0.14	0.20	0.20	0.02	0.40	0.40	0.01	0.40	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	88	195	166	249	364	310	27	2032	633	21	2015	627
v/s Ratio Prot	0.03	0.00		c0.08	c0.01		c0.01	0.23		0.00	c0.25	
v/s Ratio Perm			0.00			0.00			0.02			0.04
v/c Ratio	0.62	0.03	0.04	0.59	0.05	0.02	0.59	0.58	0.04	0.24	0.62	0.09
Uniform Delay, d1	27.2	23.4	23.5	23.5	19.0	18.9	28.5	13.7	10.7	28.5	14.1	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.0	0.1	0.1	3.8	0.1	0.0	30.3	0.4	0.0	5.8	0.6	0.1
Delay (s)	40.2	23.5	23.5	27.3	19.1	18.9	58.8	14.1	10.7	34.3	14.7	11.1
Level of Service	D	C	C	C	B	B	E	B	B	C	B	B
Approach Delay (s)		31.3			25.4			14.5			14.4	
Approach LOS		C			C			B			B	

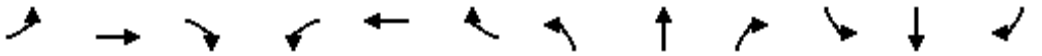
Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	98	64	77	41	184	44	1549	45	131	638	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1561	1770	1863	1561	1770	3539	1544	1770	3539	1544
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1561	1770	1863	1561	1770	3539	1544	1770	3539	1544
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	108	103	67	81	43	194	46	1631	47	138	672	49
RTOR Reduction (vph)	0	0	56	0	0	142	0	0	19	0	0	23
Lane Group Flow (vph)	108	103	11	81	43	52	46	1631	28	138	672	26
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	13.8	13.8	4.7	12.5	12.5	5.2	41.9	41.9	7.1	43.8	43.8
Effective Green, g (s)	6.0	13.8	13.8	4.7	12.5	12.5	5.2	41.9	41.9	7.1	43.8	43.8
Actuated g/C Ratio	0.07	0.17	0.17	0.06	0.15	0.15	0.06	0.50	0.50	0.09	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	127	308	258	100	279	234	110	1776	775	151	1856	810
v/s Ratio Prot	c0.06	c0.06		0.05	0.02		0.03	c0.46		c0.08	0.19	
v/s Ratio Perm			0.01			0.03			0.02			0.02
v/c Ratio	0.85	0.33	0.04	0.81	0.15	0.22	0.42	0.92	0.04	0.91	0.36	0.03
Uniform Delay, d1	38.3	30.8	29.3	39.0	30.9	31.2	37.7	19.2	10.6	37.9	11.7	9.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	38.8	0.6	0.1	37.2	0.3	0.5	2.6	8.0	0.0	48.2	0.1	0.0
Delay (s)	77.1	31.4	29.4	76.2	31.2	31.7	40.3	27.2	10.6	86.1	11.8	9.6
Level of Service	E	C	C	E	C	C	D	C	B	F	B	A
Approach Delay (s)		48.7			43.0			27.1			23.6	
Approach LOS		D			D			C			C	

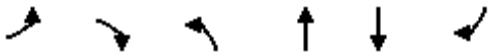
Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



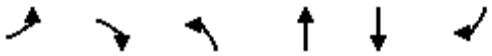
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	12	116	68	3	0	61	1284	63	0	726	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	4.0	4.0		3.0	5.0	6.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00		0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1593	1676	1425	1593	1676		1593	3185	1425		3185	1425
Flt Permitted	0.95	1.00	1.00	0.75	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1593	1676	1425	1256	1676		1593	3185	1425		3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	247	13	122	72	3	0	64	1352	66	0	764	16
RTOR Reduction (vph)	0	0	81	0	0	0	0	0	30	0	0	9
Lane Group Flow (vph)	247	13	41	72	3	0	64	1352	36	0	764	7
Turn Type	Prot		Perm	Perm		Perm	Prot		Perm	Perm		Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Actuated Green, G (s)	11.9	23.3	23.3	7.4	7.4		3.4	38.8	38.8		31.4	31.4
Effective Green, g (s)	12.9	23.3	24.3	7.4	7.4		4.4	39.8	38.8		32.4	32.4
Actuated g/C Ratio	0.18	0.32	0.34	0.10	0.10		0.06	0.55	0.54		0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.7	4.7		4.7	4.7
Lane Grp Cap (vph)	285	542	480	129	172		97	1758	767		1431	640
v/s Ratio Prot	c0.16	0.01			0.00		0.04	c0.42			0.24	
v/s Ratio Perm			0.03	c0.06					0.02			0.01
v/c Ratio	0.87	0.02	0.09	0.56	0.02		0.66	0.77	0.05		0.53	0.01
Uniform Delay, d1	28.8	16.6	16.3	30.8	29.1		33.1	12.6	7.9		14.4	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	22.4	0.0	0.0	3.0	0.0		11.7	2.4	0.0		0.6	0.0
Delay (s)	51.1	16.7	16.3	33.7	29.1		44.8	15.0	7.9		15.0	11.0
Level of Service	D	B	B	C	C		D	B	A		B	B
Approach Delay (s)		38.8			33.6			15.9			14.9	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



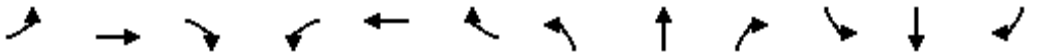
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	157	279	51	1269	862	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	165	294	54	1336	907	21
RTOR Reduction (vph)	0	236	0	0	0	11
Lane Group Flow (vph)	165	58	54	1336	907	10
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	11.2	11.2	4.4	35.2	25.8	25.8
Effective Green, g (s)	11.2	11.2	4.4	35.2	25.8	25.8
Actuated g/C Ratio	0.20	0.20	0.08	0.62	0.46	0.46
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	351	314	138	2209	1619	724
v/s Ratio Prot	c0.09		0.03	c0.38	0.26	
v/s Ratio Perm		0.04				0.01
v/c Ratio	0.47	0.19	0.39	0.60	0.56	0.01
Uniform Delay, d1	20.0	18.8	24.7	6.4	11.2	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.3	1.8	0.5	0.4	0.0
Delay (s)	21.0	19.1	26.6	6.9	11.6	8.4
Level of Service	C	B	C	A	B	A
Approach Delay (s)	19.8			7.6	11.5	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	224	103	96	1345	1138	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	236	108	101	1416	1198	168
RTOR Reduction (vph)	0	84	0	0	0	80
Lane Group Flow (vph)	236	24	101	1416	1198	88
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.4	13.4	6.9	41.8	30.9	30.9
Effective Green, g (s)	14.4	14.4	7.9	45.2	34.3	34.3
Actuated g/C Ratio	0.22	0.22	0.12	0.69	0.53	0.53
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	391	350	214	2453	1862	833
v/s Ratio Prot	c0.13		0.06	c0.40	c0.34	
v/s Ratio Perm		0.02				0.06
v/c Ratio	0.60	0.07	0.47	0.58	0.64	0.11
Uniform Delay, d1	22.8	20.1	26.7	5.1	11.1	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.0	0.6	0.5	1.0	0.1
Delay (s)	24.6	20.1	27.3	5.6	12.1	7.9
Level of Service	C	C	C	A	B	A
Approach Delay (s)	23.2			7.1	11.6	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	8.2
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

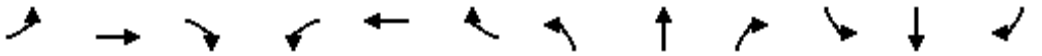


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	215	54	30	44	24	40	9	1175	50	39	1084	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9	3.7	3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	226	57	32	46	25	42	9	1237	53	41	1141	102
RTOR Reduction (vph)	0	0	26	0	0	38	0	0	28	0	0	50
Lane Group Flow (vph)	226	57	6	46	25	4	9	1237	25	41	1141	52
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	14.9	14.9	14.9	6.3	6.3	6.3	1.3	34.9	34.9	4.4	38.0	38.0
Effective Green, g (s)	16.5	16.5	15.9	7.9	7.9	7.9	2.3	38.3	38.3	5.4	41.4	41.4
Actuated g/C Ratio	0.20	0.20	0.20	0.10	0.10	0.10	0.03	0.47	0.47	0.07	0.51	0.51
Clearance Time (s)	4.9	4.9	4.9	5.3	5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1	2.0	2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	362	381	312	173	182	155	50	1680	751	118	1816	812
v/s Ratio Prot	c0.13	0.03		c0.03	0.01		0.01	c0.35		c0.02	0.32	
v/s Ratio Perm			0.00			0.00			0.02			0.03
v/c Ratio	0.62	0.15	0.02	0.27	0.14	0.03	0.18	0.74	0.03	0.35	0.63	0.06
Uniform Delay, d1	29.3	26.3	26.1	33.7	33.3	32.9	38.3	17.1	11.3	36.0	14.1	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.2	0.0	0.3	0.1	0.0	0.6	2.0	0.0	0.6	0.9	0.1
Delay (s)	32.6	26.5	26.1	34.0	33.4	32.9	38.9	19.2	11.4	36.6	15.1	10.0
Level of Service	C	C	C	C	C	C	D	B	B	D	B	A
Approach Delay (s)		30.9			33.5			19.0			15.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	12.6
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	72	39	1582	38	67	1520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	0.95		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719		5085	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	41	1665	40	71	1600
RTOR Reduction (vph)	35	0	0	20	0	0
Lane Group Flow (vph)	82	0	1665	20	71	1600
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Actuated Green, G (s)	9.1		28.7	28.7	4.9	38.6
Effective Green, g (s)	9.1		28.7	28.7	4.9	38.6
Actuated g/C Ratio	0.16		0.50	0.50	0.08	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	271		2529	787	150	3402
v/s Ratio Prot	c0.05		c0.33		0.04	c0.31
v/s Ratio Perm				0.01		
v/c Ratio	0.30		0.66	0.03	0.47	0.47
Uniform Delay, d1	21.5		10.8	7.4	25.2	4.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6		0.6	0.0	2.3	0.1
Delay (s)	22.1		11.5	7.4	27.5	4.7
Level of Service	C		B	A	C	A
Approach Delay (s)	22.1		11.4			5.7
Approach LOS	C		B			A

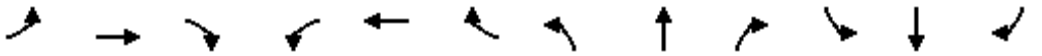
Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	0	93	31	0	15	30	1414	11	4	1059	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1563		1770	1563		1770	5085	1547	1770	5085	1547
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1563		1770	1563		1770	5085	1547	1770	5085	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	0	98	33	0	16	32	1488	12	4	1115	16
RTOR Reduction (vph)	0	81	0	0	15	0	0	0	6	0	0	8
Lane Group Flow (vph)	93	17	0	33	1	0	32	1488	6	4	1115	8
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.6	10.1		1.6	4.1		1.3	31.5	31.5	0.5	30.7	30.7
Effective Green, g (s)	7.6	10.1		1.6	4.1		1.3	31.5	31.5	0.5	30.7	30.7
Actuated g/C Ratio	0.13	0.17		0.03	0.07		0.02	0.53	0.53	0.01	0.51	0.51
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	225	264		47	107		39	2683	816	15	2615	796
v/s Ratio Prot	c0.05	c0.01		0.02	0.00		c0.02	c0.29		0.00	0.22	
v/s Ratio Perm									0.00			0.01
v/c Ratio	0.41	0.06		0.70	0.01		0.82	0.55	0.01	0.27	0.43	0.01
Uniform Delay, d1	24.0	20.8		28.8	25.9		29.1	9.4	6.7	29.4	9.0	7.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1		38.0	0.0		76.9	0.8	0.0	9.3	0.5	0.0
Delay (s)	25.2	20.9		66.8	25.9		106.0	10.2	6.7	38.8	9.5	7.1
Level of Service	C	C		E	C		F	B	A	D	A	A
Approach Delay (s)		23.0			53.5			12.2			9.6	
Approach LOS		C			D			B			A	

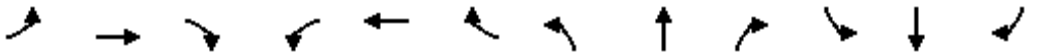
Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



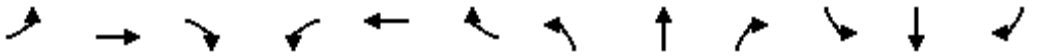
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	7	157	125	8	0	58	0	39	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0		5.0			
Lane Util. Factor		1.00	1.00		1.00		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		0.95		0.95		1.00			
Satd. Flow (prot)		1863	1583		1779		1770		1583			
Flt Permitted		1.00	1.00		0.95		0.95		1.00			
Satd. Flow (perm)		1863	1583		1779		1770		1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	7	165	132	8	0	61	0	41	0	0	0
RTOR Reduction (vph)	0	0	144	0	0	0	0	0	24	0	0	0
Lane Group Flow (vph)	0	7	21	0	140	0	61	0	17	0	0	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		7.0	7.0		9.2		4.3		23.2			
Effective Green, g (s)		7.0	7.0		9.2		4.3		23.2			
Actuated g/C Ratio		0.13	0.13		0.17		0.08		0.43			
Clearance Time (s)		5.0	5.0		5.0		5.0		5.0			
Vehicle Extension (s)		3.0	3.0		3.0		3.0		3.0			
Lane Grp Cap (vph)		240	204		301		140		675			
v/s Ratio Prot		0.00			c0.08		c0.03					
v/s Ratio Perm			c0.01						c0.01			
v/c Ratio		0.03	0.10		0.47		0.44		0.03			
Uniform Delay, d1		20.7	20.9		20.4		23.9		9.0			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.0	0.2		1.1		2.2		0.0			
Delay (s)		20.8	21.2		21.5		26.1		9.1			
Level of Service		C	C		C		C		A			
Approach Delay (s)		21.1			21.5			19.2			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	25.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



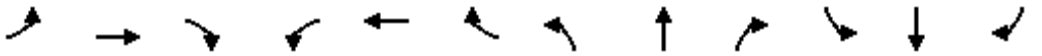
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	28	80	45	7	48	51	694	13	43	528	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1796	1583		1785	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1796	1583		1785	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	83	29	84	47	7	51	54	731	14	45	556	40
RTOR Reduction (vph)	0	0	72	0	0	45	0	0	8	0	0	25
Lane Group Flow (vph)	0	112	12	0	54	6	54	731	6	45	556	15
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		9.4	9.4		8.0	8.0	4.2	24.8	24.8	4.3	24.9	24.9
Effective Green, g (s)		9.4	9.4		8.0	8.0	4.2	24.8	24.8	4.3	24.9	24.9
Actuated g/C Ratio		0.14	0.14		0.12	0.12	0.06	0.37	0.37	0.06	0.37	0.37
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		254	224		215	190	112	1320	590	114	1325	593
v/s Ratio Prot		c0.06			c0.03		c0.03	c0.21		0.03	0.16	
v/s Ratio Perm			0.01			0.00			0.00			0.01
v/c Ratio		0.44	0.05		0.25	0.03	0.48	0.55	0.01	0.39	0.42	0.03
Uniform Delay, d1		26.1	24.7		26.5	25.8	30.1	16.5	13.1	29.9	15.4	13.1
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.2	0.1		0.6	0.1	3.2	0.5	0.0	2.2	0.2	0.0
Delay (s)		27.4	24.8		27.1	25.9	33.3	17.0	13.1	32.1	15.7	13.2
Level of Service		C	C		C	C	C	B	B	C	B	B
Approach Delay (s)		26.3			26.5			18.0			16.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	2	153	0	3	23	141	887	0	9	483	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1587			1863	1583	1770	3539		1770	3539	1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1587			1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	102	2	161	0	3	24	148	934	0	9	508	108
RTOR Reduction (vph)	0	113	0	0	0	22	0	0	0	0	0	71
Lane Group Flow (vph)	102	50	0	0	3	2	148	934	0	9	508	37
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	5.6	13.5			3.9	3.9	4.4	19.4		0.5	15.5	15.5
Effective Green, g (s)	5.6	13.5			3.9	3.9	4.4	19.4		0.5	15.5	15.5
Actuated g/C Ratio	0.12	0.30			0.09	0.09	0.10	0.43		0.01	0.34	0.34
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	218	472			160	136	172	1512		19	1208	540
v/s Ratio Prot	c0.06	c0.03			0.00		c0.08	c0.26		0.01	0.14	
v/s Ratio Perm						0.00						0.02
v/c Ratio	0.47	0.11			0.02	0.02	0.86	0.62		0.47	0.42	0.07
Uniform Delay, d1	18.5	11.6			19.0	19.0	20.2	10.1		22.3	11.5	10.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.6	0.1			0.0	0.0	32.9	0.8		17.5	0.2	0.1
Delay (s)	20.1	11.7			19.0	19.0	53.1	10.9		39.8	11.7	10.1
Level of Service	C	B			B	B	D	B		D	B	B
Approach Delay (s)		14.9			19.0			16.6			11.9	
Approach LOS		B			B			B			B	

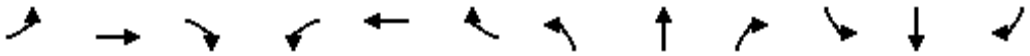
Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	45.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	0	26	43	0	44	12	762	32	20	268	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.99	1.00		0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1562	1770		1562	1770	3539	1545	1770	3539	1545
Flt Permitted		0.13	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		248	1562	1770		1562	1770	3539	1545	1770	3539	1545
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	0	27	45	0	46	13	802	34	21	282	12
RTOR Reduction (vph)	0	0	17	0	0	41	0	0	24	0	0	8
Lane Group Flow (vph)	0	65	10	45	0	5	13	802	10	21	282	4
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Perm		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Actuated Green, G (s)		30.0	30.0	9.0		9.0	0.6	24.9	24.9	1.3	25.6	25.6
Effective Green, g (s)		30.0	30.0	9.0		9.0	0.6	24.9	24.9	1.3	25.6	25.6
Actuated g/C Ratio		0.37	0.37	0.11		0.11	0.01	0.31	0.31	0.02	0.32	0.32
Clearance Time (s)		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		92	577	196		173	13	1085	474	28	1116	487
v/s Ratio Prot				c0.03			0.01	c0.23		c0.01	0.08	
v/s Ratio Perm		c0.26	0.01			0.00			0.01			0.00
v/c Ratio		0.71	0.02	0.23		0.03	1.00	0.74	0.02	0.75	0.25	0.01
Uniform Delay, d1		21.8	16.2	32.9		32.2	40.3	25.2	19.7	39.8	20.7	19.1
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		21.8	0.0	0.6		0.1	249.6	2.7	0.0	71.8	0.1	0.0
Delay (s)		43.7	16.3	33.5		32.3	289.9	27.9	19.7	111.6	20.8	19.1
Level of Service		D	B	C		C	F	C	B	F	C	B
Approach Delay (s)		35.6			32.9			31.6			26.8	
Approach LOS		D			C			C			C	

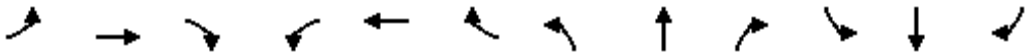
Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	81.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



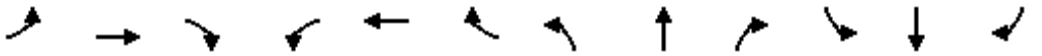
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	142	3	19	25	9	39	35	691	3	17	305	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4		3.0	3.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.95	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1776	1583		1796	1583	1770	3537		1770	3348	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1776	1583		1796	1583	1770	3537		1770	3348	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	149	3	20	26	9	41	37	727	3	18	321	180
RTOR Reduction (vph)	0	0	16	0	0	37	0	0	0	0	76	0
Lane Group Flow (vph)	0	152	4	0	35	4	37	730	0	18	425	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		8.8	8.8		4.6	4.6	2.1	20.8		0.8	19.5	
Effective Green, g (s)		9.8	9.8		5.6	5.6	3.1	23.1		1.8	21.8	
Actuated g/C Ratio		0.19	0.19		0.11	0.11	0.06	0.44		0.03	0.41	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		330	294		191	168	104	1550		60	1385	
v/s Ratio Prot		c0.09			c0.02		c0.02	c0.21		0.01	0.13	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.46	0.01		0.18	0.03	0.36	0.47		0.30	0.31	
Uniform Delay, d1		19.1	17.5		21.5	21.1	23.8	10.5		24.8	10.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		0.2	0.0	0.8	0.3		1.0	0.2	
Delay (s)		19.5	17.5		21.6	21.1	24.6	10.8		25.9	10.5	
Level of Service		B	B		C	C	C	B		C	B	
Approach Delay (s)		19.2			21.4			11.4			11.1	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	24	30	29	5	21	16	652	17	4	327	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.95		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1790	1583		1721		1770	3526		1770	3486	
Flt Permitted		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1790	1583		1721		1770	3526		1770	3486	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	107	25	32	31	5	22	17	686	18	4	344	38
RTOR Reduction (vph)	0	0	28	0	20	0	0	2	0	0	9	0
Lane Group Flow (vph)	0	132	4	0	38	0	17	702	0	4	373	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		7.3	7.3		4.6		0.9	22.9		0.8	22.8	
Effective Green, g (s)		7.3	7.3		4.6		0.9	22.9		0.8	22.8	
Actuated g/C Ratio		0.14	0.14		0.09		0.02	0.43		0.02	0.43	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		245	217		149		30	1515		27	1491	
v/s Ratio Prot		c0.07			c0.02		c0.01	c0.20		0.00	0.11	
v/s Ratio Perm			0.00									
v/c Ratio		0.54	0.02		0.25		0.57	0.46		0.15	0.25	
Uniform Delay, d1		21.4	19.9		22.7		26.0	10.8		25.9	9.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.1	0.0		0.3		13.8	0.3		0.9	0.1	
Delay (s)		22.6	19.9		23.1		39.8	11.1		26.8	9.9	
Level of Service		C	B		C		D	B		C	A	
Approach Delay (s)		22.1			23.1			11.8			10.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



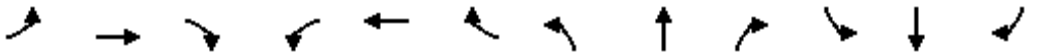
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	6	142	13	11	13	97	604	12	2	410	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1781	1583		1814	1583	1770	3529		1770	3518	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1781	1583		1814	1583	1770	3529		1770	3518	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	6	149	14	12	14	102	636	13	2	432	18
RTOR Reduction (vph)	0	0	127	0	0	13	0	1	0	0	3	0
Lane Group Flow (vph)	0	75	22	0	26	1	102	648	0	2	447	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		7.2	7.2		4.0	4.0	4.7	26.2		0.6	22.1	
Effective Green, g (s)		8.2	8.2		5.0	5.0	5.7	28.9		1.6	24.8	
Actuated g/C Ratio		0.15	0.15		0.09	0.09	0.10	0.52		0.03	0.45	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		262	233		163	142	181	1831		51	1566	
v/s Ratio Prot		c0.04			c0.01		c0.06	c0.18		0.00	0.13	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.29	0.09		0.16	0.01	0.56	0.35		0.04	0.29	
Uniform Delay, d1		21.1	20.5		23.4	23.1	23.8	7.9		26.3	9.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.2		0.5	0.0	2.4	0.2		0.1	0.1	
Delay (s)		21.7	20.7		23.9	23.1	26.2	8.0		26.4	9.9	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		21.1			23.6			10.5			10.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	24	35	99	51	97	35	1116	18	227	436	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1523	1681	1741	1583	1770	3527		1770	3470	
Flt Permitted		0.97	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799	1523	1681	1741	1583	1770	3527		1770	3470	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	25	37	104	54	102	37	1175	19	239	459	45
RTOR Reduction (vph)	0	0	32	0	0	92	0	1	0	0	6	0
Lane Group Flow (vph)	0	86	5	78	80	10	37	1193	0	239	498	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		10.9	10.9	8.8	8.8	8.8	3.1	41.1		17.7	55.7	
Effective Green, g (s)		11.9	11.9	9.8	9.8	9.8	5.1	43.1		19.7	57.7	
Actuated g/C Ratio		0.12	0.12	0.10	0.10	0.10	0.05	0.44		0.20	0.59	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		220	186	169	175	159	93	1559		358	2054	
v/s Ratio Prot		c0.05		c0.05	0.05		0.02	c0.34		c0.14	0.14	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.39	0.02	0.46	0.46	0.06	0.40	0.77		0.67	0.24	
Uniform Delay, d1		39.5	37.7	41.4	41.3	39.7	44.7	22.9		35.9	9.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.0	1.5	1.4	0.1	1.0	2.4		3.6	0.1	
Delay (s)		40.3	37.7	42.8	42.7	39.8	45.7	25.3		39.5	9.6	
Level of Service		D	D	D	D	D	D	C		D	A	
Approach Delay (s)		39.5			41.6			26.0			19.2	
Approach LOS		D			D			C			B	

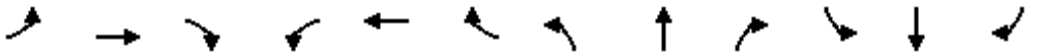
Intersection Summary				
HCM Average Control Delay	26.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	68.7%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	0	101	42	0	72	73	1058	33	43	448	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	0	106	44	0	76	77	1114	35	45	472	34
RTOR Reduction (vph)	0	0	96	0	0	68	0	2	0	0	0	18
Lane Group Flow (vph)	68	0	10	44	0	8	77	1147	0	45	472	16
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	6.8		6.8	6.5		6.5	6.1	35.3		3.8	33.0	33.0
Effective Green, g (s)	6.8		6.8	7.5		7.5	6.1	36.3		4.8	34.0	33.0
Actuated g/C Ratio	0.10		0.10	0.11		0.11	0.09	0.52		0.07	0.49	0.47
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	172		154	189		169	154	1824		121	1716	745
v/s Ratio Prot	c0.04			c0.02			c0.04	c0.33		0.03	0.13	
v/s Ratio Perm			0.01			0.01						0.01
v/c Ratio	0.40		0.07	0.23		0.05	0.50	0.63		0.37	0.28	0.02
Uniform Delay, d1	29.7		28.8	28.7		28.1	30.5	12.1		31.2	10.7	9.9
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5		0.1	0.2		0.0	0.9	0.9		0.7	0.2	0.0
Delay (s)	30.3		28.8	28.9		28.1	31.5	13.0		31.9	10.9	9.9
Level of Service	C		C	C		C	C	B		C	B	A
Approach Delay (s)		29.4			28.4			14.1			12.5	
Approach LOS		C			C			B			B	

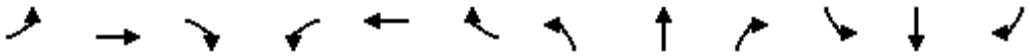
Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	11.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	4	51	63	4	15	289	862	135	99	854	528
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1692	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1692	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	4	54	66	4	16	304	907	142	104	899	556
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	332
Lane Group Flow (vph)	46	47	54	66	4	16	304	907	142	104	899	224
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	8.2	8.2	75.4	6.5	6.5	75.4	15.7	36.4	75.4	6.3	27.0	27.0
Effective Green, g (s)	9.2	9.2	75.4	7.5	7.5	75.4	16.7	39.8	75.4	7.3	30.4	30.4
Actuated g/C Ratio	0.12	0.12	1.00	0.10	0.10	1.00	0.22	0.53	1.00	0.10	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	205	206	1583	176	185	1583	392	2684	1583	171	2050	638
v/s Ratio Prot	0.03	c0.03		c0.04	0.00		c0.17	0.18		0.06	c0.18	
v/s Ratio Perm			0.03			0.01			0.09			0.14
v/c Ratio	0.22	0.23	0.03	0.38	0.02	0.01	0.78	0.34	0.09	0.61	0.44	0.35
Uniform Delay, d1	29.9	29.9	0.0	31.8	30.6	0.0	27.6	10.2	0.0	32.7	16.3	15.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	0.0	1.3	0.0	0.0	8.5	0.1	0.1	6.0	0.3	0.6
Delay (s)	30.3	30.3	0.0	33.1	30.7	0.0	36.1	10.4	0.1	38.7	16.6	16.2
Level of Service	C	C	A	C	C	A	D	B	A	D	B	B
Approach Delay (s)		19.2			26.8			15.1			17.9	
Approach LOS		B			C			B			B	

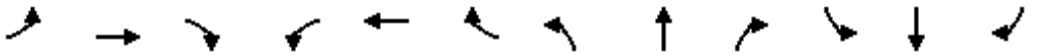
Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	75.4	Sum of lost time (s)	11.6
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



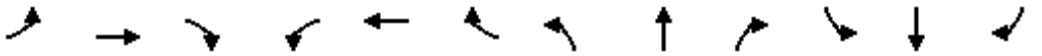
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	2	1	17	2	35	51	1429	124	182	799	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0		3.0	0.6	4.0	4.0	0.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1741	1583	1770	1598		1770	3539	1583	1770	4932	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00	0.17	1.00	
Satd. Flow (perm)	1681	1741	1583	1770	1598		1770	3539	1583	310	4932	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	2	1	18	2	37	54	1504	131	192	841	212
RTOR Reduction (vph)	0	0	1	0	35	0	0	0	21	0	19	0
Lane Group Flow (vph)	2	3	0	18	4	0	54	1504	110	192	1034	0
Turn Type	Split		Perm	Split			Prot		Perm	Perm		
Protected Phases	4	4		8	8		5	2			6	
Permitted Phases			4						2	6		
Actuated Green, G (s)	3.8	3.8	3.8	6.7	6.7		7.6	106.6	106.6	95.0	95.0	
Effective Green, g (s)	4.8	3.8	4.8	6.7	6.7		8.6	110.0	106.6	95.0	98.4	
Actuated g/C Ratio	0.04	0.03	0.04	0.05	0.05		0.07	0.85	0.82	0.73	0.76	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	62	51	58	91	82		117	2992	1297	226	3730	
v/s Ratio Prot	0.00	c0.00		c0.01	0.00		0.03	c0.42			0.21	
v/s Ratio Perm			0.00						0.07	c0.62		
v/c Ratio	0.03	0.06	0.00	0.20	0.05		0.46	0.50	0.08	0.85	0.28	
Uniform Delay, d1	60.4	61.4	60.3	59.1	58.7		58.5	2.7	2.3	12.5	4.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.5	0.0	1.1	0.2		2.9	0.1	0.0	24.6	0.0	
Delay (s)	60.6	61.9	60.3	60.2	58.9		61.4	2.8	2.3	37.0	4.9	
Level of Service	E	E	E	E	E		E	A	A	D	A	
Approach Delay (s)		61.2			59.3			4.7			9.9	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.1	Sum of lost time (s)	13.6
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



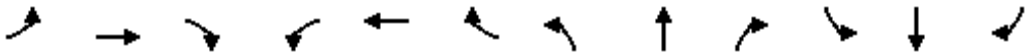
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	7	53	0	1	64	17	1795	0	275	556	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	0.95		1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88	0.85		0.87		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1562	1504		1615		1770	3539		1770	3539	
Flt Permitted	0.71	1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1328	1562	1504		1615		1770	3539		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	7	56	0	1	67	18	1889	0	289	585	0
RTOR Reduction (vph)	0	23	28	0	61	0	0	0	0	0	0	0
Lane Group Flow (vph)	2	9	3	0	7	0	18	1889	0	289	585	0
Turn Type	Perm		Perm				Prot			Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4									6
Actuated Green, G (s)	8.1	8.1	8.1		8.1		2.8	55.4		18.2	70.8	
Effective Green, g (s)	8.1	8.1	8.1		8.1		2.8	55.4		18.2	70.8	
Actuated g/C Ratio	0.08	0.08	0.08		0.08		0.03	0.57		0.19	0.73	
Clearance Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	111	131	126		135		51	2028		333	2591	
v/s Ratio Prot		c0.01			0.00		0.01	c0.53		c0.16	0.17	
v/s Ratio Perm	0.00		0.00									
v/c Ratio	0.02	0.07	0.02		0.05		0.35	0.93		0.87	0.23	
Uniform Delay, d1	40.7	40.8	40.7		40.8		46.1	18.9		38.1	4.2	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.2	0.1		0.2		4.2	8.4		20.5	0.0	
Delay (s)	40.7	41.1	40.7		40.9		50.2	27.3		58.6	4.2	
Level of Service	D	D	D		D		D	C		E	A	
Approach Delay (s)		40.9			40.9			27.5			22.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	96.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	9	18	42	1	2	8	1463	339	33	643	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	2.6		3.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786	1583	1681	1689	1583	1770	4942		1770	5077	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1786	1583	1681	1689	1583	1770	4942		1770	5077	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	9	19	44	1	2	8	1540	357	35	677	7
RTOR Reduction (vph)	0	0	17	0	0	2	0	32	0	0	1	0
Lane Group Flow (vph)	0	63	2	22	23	0	8	1865	0	35	683	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4						
Actuated Green, G (s)		5.2	5.2	6.4	6.4	6.4	0.9	36.3		1.3	36.7	
Effective Green, g (s)		6.2	6.2	7.4	7.4	7.4	1.9	39.7		2.3	40.1	
Actuated g/C Ratio		0.09	0.09	0.11	0.11	0.11	0.03	0.59		0.03	0.60	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2	0.2	2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)		165	146	185	186	174	50	2920		61	3030	
v/s Ratio Prot		c0.04		0.01	c0.01		0.00	c0.38		c0.02	0.13	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.38	0.01	0.12	0.12	0.00	0.16	0.64		0.57	0.23	
Uniform Delay, d1		28.7	27.7	27.0	27.0	26.6	31.9	9.0		32.0	6.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0	0.1	0.1	0.0	0.5	0.5		7.9	0.1	
Delay (s)		29.2	27.7	27.1	27.1	26.6	32.4	9.6		39.8	6.4	
Level of Service		C	C	C	C	C	C	A		D	A	
Approach Delay (s)		28.9			27.1			9.6			8.0	
Approach LOS		C			C			A			A	

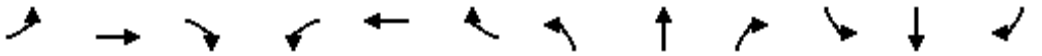
Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	67.2	Sum of lost time (s)	11.6
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	117	6	177	73	16	55	123	1620	17	11	1125	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1778	1550		1789	1583	1770	5075		1770	5068	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1778	1550		1789	1583	1770	5075		1770	5068	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	123	6	186	77	17	58	129	1705	18	12	1184	22
RTOR Reduction (vph)	0	0	151	0	0	53	0	1	0	0	2	0
Lane Group Flow (vph)	0	129	35	0	94	5	129	1722	0	12	1204	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		9.7	9.7		3.1	3.1	6.5	30.4		0.5	24.4	
Effective Green, g (s)		12.0	12.0		5.4	5.4	7.5	33.4		1.5	27.4	
Actuated g/C Ratio		0.19	0.19		0.09	0.09	0.12	0.53		0.02	0.43	
Clearance Time (s)		5.3	5.3		4.0	4.0	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		339	295		153	136	211	2691		42	2204	
v/s Ratio Prot		c0.07			c0.05		c0.07	c0.34		0.01	0.24	
v/s Ratio Perm			0.02			0.00						
v/c Ratio		0.38	0.12		0.61	0.04	0.61	0.64		0.29	0.55	
Uniform Delay, d1		22.3	21.1		27.8	26.4	26.4	10.5		30.2	13.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.1		5.1	0.0	3.7	0.7		1.4	0.5	
Delay (s)		22.5	21.2		32.9	26.5	30.0	11.2		31.6	13.7	
Level of Service		C	C		C	C	C	B		C	B	
Approach Delay (s)		21.7			30.4			12.6			13.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	7.7
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

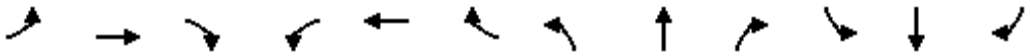
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	654	167	175	201	132	76	1471	201	158	1011	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1535	1770	5085	1534	3433	5085	1560	3433	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1535	1770	5085	1534	3433	5085	1560	3433	5085	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	255	688	176	184	212	139	80	1548	212	166	1064	140
RTOR Reduction (vph)	0	0	115	0	0	99	0	0	0	0	0	0
Lane Group Flow (vph)	255	688	61	184	212	40	80	1548	212	166	1064	140
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	13.3	29.2	29.2	15.9	31.8	31.8	5.6	47.1	120.0	8.4	49.6	120.0
Effective Green, g (s)	14.3	32.2	32.2	16.9	34.8	34.8	6.6	50.1	120.0	9.4	52.6	120.0
Actuated g/C Ratio	0.12	0.27	0.27	0.14	0.29	0.29	0.05	0.42	1.00	0.08	0.44	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	409	950	412	249	1475	445	189	2123	1560	269	2229	1560
v/s Ratio Prot	0.07	c0.19		c0.10	0.04		0.02	c0.30		c0.05	0.21	
v/s Ratio Perm			0.04			0.03			c0.14			0.09
v/c Ratio	0.62	0.72	0.15	0.74	0.14	0.09	0.42	0.73	0.14	0.62	0.48	0.09
Uniform Delay, d1	50.3	39.9	33.5	49.4	31.6	31.1	54.9	29.3	0.0	53.6	23.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	2.9	0.2	9.5	0.1	0.1	0.6	1.5	0.2	2.9	0.7	0.1
Delay (s)	52.4	42.7	33.7	58.9	31.6	31.2	55.4	30.7	0.2	56.5	24.7	0.1
Level of Service	D	D	C	E	C	C	E	C	A	E	C	A
Approach Delay (s)		43.5			40.9			28.3			26.0	
Approach LOS		D			D			C			C	

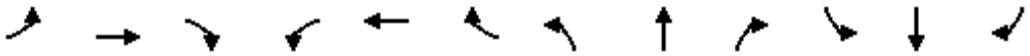
Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	0	39	44	2	21	24	1711	20	10	1382	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0	4.7	3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.91	
Frt		0.94			0.96		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1703			1727		1770	3539	1583	1770	5081	
Flt Permitted		0.80			0.73		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1409			1299		1770	3539	1583	1770	5081	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	0	41	46	2	22	25	1801	21	11	1455	9
RTOR Reduction (vph)	0	27	0	0	15	0	0	0	3	0	1	0
Lane Group Flow (vph)	0	65	0	0	55	0	25	1801	18	11	1463	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		11.2			11.2		12.6	94.5	94.5	0.6	82.5	
Effective Green, g (s)		12.2			12.2		13.6	97.2	95.5	1.6	85.2	
Actuated g/C Ratio		0.10			0.10		0.11	0.81	0.80	0.01	0.71	
Clearance Time (s)		4.0			4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8	3.8	2.0	3.8	
Lane Grp Cap (vph)		143			132		201	2867	1260	24	3608	
v/s Ratio Prot							0.01	c0.51		0.01	c0.29	
v/s Ratio Perm		c0.05			0.04				0.01			
v/c Ratio		0.45			0.41		0.12	0.63	0.01	0.46	0.41	
Uniform Delay, d1		50.8			50.6		47.8	4.4	2.5	58.8	7.1	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.3			2.1		0.1	1.1	0.0	5.0	0.1	
Delay (s)		53.1			52.7		47.9	5.5	2.6	63.7	7.2	
Level of Service		D			D		D	A	A	E	A	
Approach Delay (s)		53.1			52.7			6.0			7.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



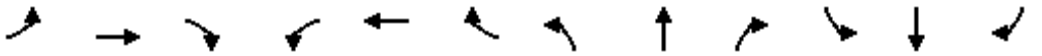
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	270	226	109	50	51	125	1760	48	139	2098	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5073	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5073	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	284	238	115	53	54	132	1853	51	146	2208	33
RTOR Reduction (vph)	0	0	103	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	104	284	135	115	53	54	132	1853	51	146	2240	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	14.3	17.8	17.8	6.8	10.3	120.0	8.0	67.4	120.0	8.3	67.7	
Effective Green, g (s)	15.3	20.8	20.8	7.8	13.3	120.0	9.0	70.4	120.0	9.3	70.7	
Actuated g/C Ratio	0.13	0.17	0.17	0.06	0.11	1.00	0.08	0.59	1.00	0.08	0.59	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	226	613	268	223	392	1562	257	2983	1562	266	2989	
v/s Ratio Prot	c0.06	0.08		c0.03	0.01		0.04	0.36		c0.04	c0.44	
v/s Ratio Perm			c0.09			c0.03			0.03			
v/c Ratio	0.46	0.46	0.51	0.52	0.14	0.03	0.51	0.62	0.03	0.55	0.75	
Uniform Delay, d1	48.5	44.6	44.9	54.3	48.2	0.0	53.4	16.1	0.0	53.3	18.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.7	1.9	0.8	0.2	0.0	0.7	0.4	0.0	1.2	1.8	
Delay (s)	49.1	45.3	46.9	55.1	48.4	0.0	54.1	16.6	0.0	54.6	19.9	
Level of Service	D	D	D	E	D	A	D	B	A	D	B	
Approach Delay (s)		46.5			40.1			18.6			22.0	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	169	278	1737	91	210	2271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	3.0	2.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	178	293	1828	96	221	2391
RTOR Reduction (vph)	0	0	0	29	0	0
Lane Group Flow (vph)	178	293	1828	67	221	2391
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	13.3	67.7	28.3	28.3	10.1	44.4
Effective Green, g (s)	14.3	67.7	30.3	30.3	11.1	46.4
Actuated g/C Ratio	0.21	1.00	0.45	0.45	0.16	0.69
Clearance Time (s)	6.0		6.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	374	1583	2276	708	290	3485
v/s Ratio Prot	c0.10		c0.36		c0.12	0.47
v/s Ratio Perm		0.19		0.04		
v/c Ratio	0.48	0.19	0.80	0.10	0.76	0.69
Uniform Delay, d1	23.4	0.0	16.1	10.8	27.0	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.3	2.2	0.1	10.2	0.6
Delay (s)	24.4	0.3	18.3	10.9	37.2	6.9
Level of Service	C	A	B	B	D	A
Approach Delay (s)	9.4		17.9			9.5
Approach LOS	A		B			A

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

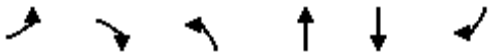


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	6	9	95	2	181	40	699	360	461	1037	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	0.85	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1863	1583	3433	1510	1504	1770	3539	1583	3433	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1863	1583	3433	1510	1504	1770	3539	1583	3433	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	6	9	100	2	191	42	736	379	485	1092	0
RTOR Reduction (vph)	0	0	9	0	87	87	0	0	207	0	0	0
Lane Group Flow (vph)	0	6	0	100	11	8	42	736	172	485	1092	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		1.3	1.3	6.7	6.7	6.7	5.0	34.1	34.1	16.9	46.0	
Effective Green, g (s)		1.3	1.3	6.7	6.7	6.7	5.0	34.1	34.1	16.9	46.0	
Actuated g/C Ratio		0.02	0.02	0.09	0.09	0.09	0.07	0.45	0.45	0.23	0.61	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		32	27	307	135	134	118	1609	720	774	2171	
v/s Ratio Prot		c0.00		c0.03	0.01		0.02	0.21		c0.14	c0.31	
v/s Ratio Perm			0.00			0.01			0.11			
v/c Ratio		0.19	0.01	0.33	0.08	0.06	0.36	0.46	0.24	0.63	0.50	
Uniform Delay, d1		36.3	36.2	32.0	31.3	31.3	33.5	14.1	12.5	26.2	8.1	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.8	0.1	0.6	0.2	0.2	1.8	0.9	0.8	1.6	0.8	
Delay (s)		39.2	36.3	32.7	31.6	31.5	35.3	15.0	13.3	27.8	8.9	
Level of Service		D	D	C	C	C	D	B	B	C	A	
Approach Delay (s)		37.4			31.9			15.2			14.7	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

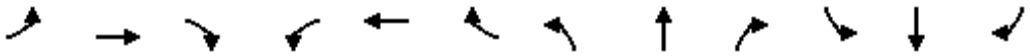
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	97	48	539	169	51	552
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	102	51	567	178	54	581
RTOR Reduction (vph)	0	40	0	81	0	0
Lane Group Flow (vph)	102	11	567	97	54	581
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.0	9.0	23.0	23.0	1.9	28.9
Effective Green, g (s)	10.5	10.5	26.0	26.0	2.9	31.9
Actuated g/C Ratio	0.22	0.22	0.54	0.54	0.06	0.67
Clearance Time (s)	4.0	4.0	6.0	6.0	4.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	388	347	1921	859	107	2357
v/s Ratio Prot	c0.06		c0.16		c0.03	0.16
v/s Ratio Perm		0.01		0.06		
v/c Ratio	0.26	0.03	0.30	0.11	0.50	0.25
Uniform Delay, d1	15.5	14.7	6.0	5.3	21.8	3.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	0.2	0.1	1.4	0.1
Delay (s)	15.9	14.7	6.1	5.4	23.2	3.3
Level of Service	B	B	A	A	C	A
Approach Delay (s)	15.5		6.0			5.0
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	47.9	Sum of lost time (s)	8.5
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	164	429	1195	729	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00
Frt		0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)		1583	1770	3539	3539	1583
Flt Permitted		1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)		1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	173	452	1258	767	18
RTOR Reduction (vph)	0	154	0	0	0	13
Lane Group Flow (vph)	0	19	452	1258	767	5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)		5.9	17.4	38.7	16.3	16.3
Effective Green, g (s)		5.9	17.4	38.7	16.3	16.3
Actuated g/C Ratio		0.11	0.32	0.71	0.30	0.30
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		171	564	2508	1057	473
v/s Ratio Prot			c0.26	0.36	c0.22	
v/s Ratio Perm		c0.01				0.00
v/c Ratio		0.11	0.80	0.50	0.73	0.01
Uniform Delay, d1		22.0	17.0	3.6	17.1	13.5
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.3	8.0	0.2	2.5	0.0
Delay (s)		22.3	25.1	3.8	19.7	13.5
Level of Service		C	C	A	B	B
Approach Delay (s)	22.3			9.4	19.5	
Approach LOS	C			A	B	

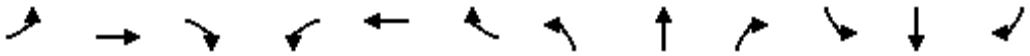
Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	9	10	53	1	189	6	1254	93	91	608	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1736			1776	1557	1770	3496		1770	3513	
Flt Permitted		0.95			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1671			1402	1557	1770	3496		1770	3513	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	9	11	56	1	199	6	1320	98	96	640	28
RTOR Reduction (vph)	0	9	0	0	0	148	0	6	0	0	3	0
Lane Group Flow (vph)	0	17	0	0	57	51	6	1412	0	96	665	0
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						
Actuated Green, G (s)		10.9			10.9	10.9	1.2	33.0		3.9	35.7	
Effective Green, g (s)		11.9			11.9	11.9	2.2	36.0		4.9	38.7	
Actuated g/C Ratio		0.19			0.19	0.19	0.04	0.59		0.08	0.63	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		323			271	301	63	2046		141	2211	
v/s Ratio Prot							0.00	c0.40		c0.05	c0.19	
v/s Ratio Perm		0.01			c0.04	0.03						
v/c Ratio		0.05			0.21	0.17	0.10	0.69		0.68	0.30	
Uniform Delay, d1		20.2			20.8	20.7	28.7	8.9		27.5	5.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			0.1	0.1	0.2	1.2		10.3	0.1	
Delay (s)		20.2			21.0	20.8	28.9	10.0		37.8	5.3	
Level of Service		C			C	C	C	B		D	A	
Approach Delay (s)		20.2			20.8			10.1			9.4	
Approach LOS		C			C			B			A	

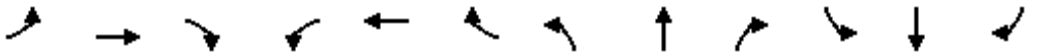
Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.5	Sum of lost time (s)	11.4
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1	47	14	1	15	32	1210	64	26	614	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1775	1531		1779	1465	1770	3539	1544	1770	3520	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1775	1531		1779	1465	1770	3539	1544	1770	3520	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	1	49	15	1	16	34	1274	67	27	646	20
RTOR Reduction (vph)	0	0	44	0	0	15	0	0	14	0	2	0
Lane Group Flow (vph)	0	85	5	0	16	1	34	1274	53	27	664	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		8.4	8.4		2.4	2.4	3.8	59.4	59.4	2.1	57.7	
Effective Green, g (s)		9.4	9.4		3.4	3.4	4.8	62.4	60.4	3.1	60.7	
Actuated g/C Ratio		0.10	0.10		0.04	0.04	0.05	0.69	0.67	0.03	0.67	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		185	160		67	55	94	2454	1036	61	2374	
v/s Ratio Prot		c0.05			c0.01		0.02	c0.36		c0.02	0.19	
v/s Ratio Perm			0.00			0.00			0.03			
v/c Ratio		0.46	0.03		0.24	0.01	0.36	0.52	0.05	0.44	0.28	
Uniform Delay, d1		37.9	36.2		42.0	41.7	41.1	6.6	5.0	42.6	5.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.7	0.0		0.7	0.0	0.9	0.4	0.0	1.9	0.3	
Delay (s)		38.6	36.2		42.7	41.7	42.0	7.0	5.1	44.5	6.2	
Level of Service		D	D		D	D	D	A	A	D	A	
Approach Delay (s)		37.7			42.2			7.8			7.7	
Approach LOS		D			D			A			A	

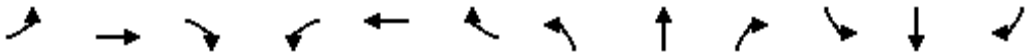
Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	497	0	704	11	3	1	291	801	0	1	528	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1793		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	523	0	741	12	3	1	306	843	0	1	556	147
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	78
Lane Group Flow (vph)	261	262	741	12	3	0	306	843	0	1	556	69
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	18.4	18.4	90.0	4.2	4.2		11.5	48.3		1.4	40.2	40.2
Effective Green, g (s)	20.4	20.4	90.0	6.2	6.2		13.5	50.3		3.4	42.2	42.2
Actuated g/C Ratio	0.23	0.23	1.00	0.07	0.07		0.15	0.56		0.04	0.47	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.9		2.0	4.3	4.3
Lane Grp Cap (vph)	381	381	1478	122	124		515	1978		67	1659	693
v/s Ratio Prot	0.16	c0.16		0.01	0.00		c0.09	0.24		0.00	0.16	
v/s Ratio Perm			c0.50									0.05
v/c Ratio	0.69	0.69	0.50	0.10	0.02		0.59	0.43		0.01	0.34	0.10
Uniform Delay, d1	31.9	31.9	0.0	39.3	39.1		35.7	11.5		41.7	15.1	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.0	4.1	1.2	0.1	0.0		1.2	0.7		0.0	0.2	0.1
Delay (s)	35.9	36.0	1.2	39.4	39.1		36.9	12.2		41.7	15.3	13.4
Level of Service	D	D	A	D	D		D	B		D	B	B
Approach Delay (s)		15.6			39.3			18.8			14.9	
Approach LOS		B			D			B			B	

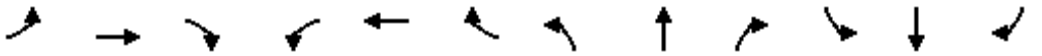
Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	2.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	1	13	0	1	25	30	737	0	22	727	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	3.0		4.0	3.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1602			1863	1583	1770	3539		1770	3498	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1602			1863	1583	1770	3539		1770	3498	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	1	14	0	1	26	32	776	0	23	765	64
RTOR Reduction (vph)	0	12	0	0	0	24	0	0	0	0	4	0
Lane Group Flow (vph)	89	3	0	0	1	2	32	776	0	23	825	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	8.1	8.1			3.7	3.7	2.5	33.0		1.1	31.6	
Effective Green, g (s)	9.1	9.1			4.7	4.7	3.5	35.0		2.1	33.6	
Actuated g/C Ratio	0.14	0.14			0.07	0.07	0.05	0.53		0.03	0.51	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	244	221			133	113	94	1880		56	1784	
v/s Ratio Prot	c0.05	0.00			0.00		c0.02	0.22		0.01	c0.24	
v/s Ratio Perm						c0.00						
v/c Ratio	0.36	0.01			0.01	0.02	0.34	0.41		0.41	0.46	
Uniform Delay, d1	25.8	24.5			28.4	28.5	30.1	9.3		31.3	10.4	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.0			0.0	0.1	2.2	0.1		4.8	0.2	
Delay (s)	26.7	24.5			28.5	28.5	32.2	9.4		36.1	10.5	
Level of Service	C	C			C	C	C	A		D	B	
Approach Delay (s)		26.4			28.5			10.3			11.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

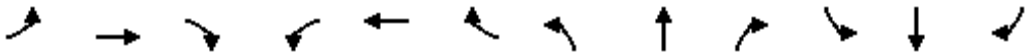


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	0	36	40	1	48	64	445	5	25	390	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583	1770	1589		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1583	1770	1589		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	0	38	42	1	51	67	468	5	26	411	99
RTOR Reduction (vph)	0	0	33	0	45	0	0	0	3	0	0	61
Lane Group Flow (vph)	36	36	5	42	7	0	67	468	2	26	411	38
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	8.2	8.2	8.2	6.8	6.8		4.1	25.8	25.8	1.0	22.7	22.7
Effective Green, g (s)	8.2	8.2	8.2	6.8	6.8		4.1	25.8	25.8	1.0	22.7	22.7
Actuated g/C Ratio	0.14	0.14	0.14	0.12	0.12		0.07	0.44	0.44	0.02	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	233	233	220	204	183		123	1545	691	30	1359	608
v/s Ratio Prot	c0.02	0.02		c0.02	0.00		c0.04	c0.13		0.01	0.12	
v/s Ratio Perm			0.00						0.00			0.02
v/c Ratio	0.15	0.15	0.02	0.21	0.04		0.54	0.30	0.00	0.87	0.30	0.06
Uniform Delay, d1	22.4	22.4	22.0	23.7	23.2		26.6	10.8	9.4	29.0	12.7	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0	0.2	0.0		2.6	0.1	0.0	105.7	0.2	0.1
Delay (s)	22.5	22.5	22.0	23.9	23.3		29.2	11.0	9.4	134.6	12.9	11.5
Level of Service	C	C	C	C	C		C	B	A	F	B	B
Approach Delay (s)		22.3			23.5			13.2			18.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	17.3
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

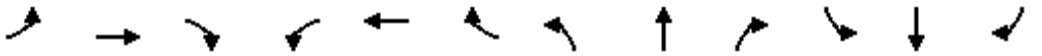
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	44	30	5	60	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	46	32	5	63	26
RTOR Reduction (vph)	0	40	0	4	0	0
Lane Group Flow (vph)	4	6	32	1	63	26
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	3.2	3.2	3.3	3.3	1.8	10.1
Effective Green, g (s)	3.2	3.2	3.3	3.3	1.8	10.1
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.08	0.43
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	243	217	264	224	137	808
v/s Ratio Prot	0.00		c0.02		c0.04	0.01
v/s Ratio Perm		c0.00		0.00		
v/c Ratio	0.02	0.03	0.12	0.00	0.46	0.03
Uniform Delay, d1	8.7	8.7	8.7	8.6	10.3	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	0.2	0.0	2.4	0.0
Delay (s)	8.7	8.8	8.9	8.6	12.7	3.8
Level of Service	A	A	A	A	B	A
Approach Delay (s)	8.8		8.9			10.1
Approach LOS	A		A			B

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	23.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	24.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	368	40	42	455	11	39	8	36	6	46	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1711	1583		1809	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1711	1583		1809	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	387	42	44	479	12	41	8	38	6	48	12
RTOR Reduction (vph)	0	0	21	0	0	6	0	0	34	0	10	0
Lane Group Flow (vph)	3	387	21	44	479	6	24	25	4	0	56	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	0.6	22.7	22.7	2.1	24.2	24.2	3.8	3.8	3.8		3.7	
Effective Green, g (s)	2.6	24.7	24.7	3.1	26.2	26.2	4.8	4.8	4.8		5.7	
Actuated g/C Ratio	0.05	0.49	0.49	0.06	0.52	0.52	0.10	0.10	0.10		0.11	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	92	1748	782	110	1854	829	161	164	152		206	
v/s Ratio Prot	0.00	0.11		c0.02	c0.14		0.01	c0.01			c0.03	
v/s Ratio Perm			0.01			0.00			0.00			
v/c Ratio	0.03	0.22	0.03	0.40	0.26	0.01	0.15	0.15	0.02		0.27	
Uniform Delay, d1	22.5	7.2	6.5	22.6	6.6	5.7	20.7	20.7	20.5		20.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.9	0.1	0.0	0.2	0.2	0.0		0.3	
Delay (s)	22.6	7.3	6.5	23.4	6.7	5.7	20.9	20.9	20.5		20.5	
Level of Service	C	A	A	C	A	A	C	C	C		C	
Approach Delay (s)		7.3			8.0			20.7			20.5	
Approach LOS		A			A			C			C	

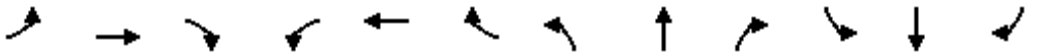
Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	350	120	68	366	7	70	9	29	14	37	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1703	1478	1770	1863	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1703	1478	1770	1863	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	368	126	72	385	7	74	9	31	15	39	80
RTOR Reduction (vph)	0	0	66	0	0	3	0	0	29	0	0	70
Lane Group Flow (vph)	26	368	60	72	385	4	41	42	2	15	39	10
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	0.4	18.3	18.3	1.5	19.4	19.4	2.0	2.0	2.0	3.8	3.8	3.8
Effective Green, g (s)	1.4	21.0	21.0	2.5	22.1	22.1	3.0	3.0	3.0	4.8	5.7	5.7
Actuated g/C Ratio	0.03	0.48	0.48	0.06	0.50	0.50	0.07	0.07	0.07	0.11	0.13	0.13
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	56	1693	707	101	1782	744	115	116	101	194	242	192
v/s Ratio Prot	0.01	0.10		c0.04	c0.11		0.02	c0.02		0.01	c0.02	
v/s Ratio Perm			0.04			0.00			0.00			0.01
v/c Ratio	0.46	0.22	0.09	0.71	0.22	0.00	0.36	0.36	0.02	0.08	0.16	0.05
Uniform Delay, d1	20.9	6.7	6.2	20.3	6.1	5.4	19.5	19.5	19.1	17.6	17.0	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.1	0.1	17.9	0.1	0.0	0.7	0.7	0.0	0.2	0.4	0.2
Delay (s)	23.1	6.8	6.3	38.2	6.2	5.4	20.2	20.2	19.1	17.8	17.4	16.9
Level of Service	C	A	A	D	A	A	C	C	B	B	B	B
Approach Delay (s)		7.5			11.1			19.9			17.1	
Approach LOS		A			B			B			B	

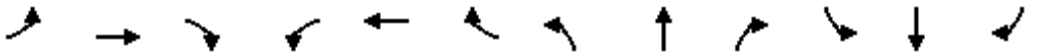
Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	8.7
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



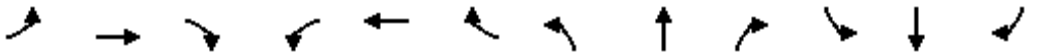
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	292	58	30	357	3	53	15	4	0	7	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1793	1583		1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1793	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	307	61	32	376	3	56	16	4	0	7	28
RTOR Reduction (vph)	0	0	29	0	0	1	0	0	4	0	0	27
Lane Group Flow (vph)	64	307	32	32	376	2	0	72	0	0	7	1
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	1.3	20.8	20.8	0.4	19.9	19.9		3.7	3.7		1.1	1.1
Effective Green, g (s)	2.3	22.8	22.8	1.4	21.9	21.9		4.7	4.7		2.1	2.1
Actuated g/C Ratio	0.05	0.53	0.53	0.03	0.51	0.51		0.11	0.11		0.05	0.05
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3		3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	95	1876	839	58	1802	806		196	173		91	77
v/s Ratio Prot	c0.04	0.09		0.02	c0.11			c0.04			c0.00	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.67	0.16	0.04	0.55	0.21	0.00		0.37	0.00		0.08	0.02
Uniform Delay, d1	20.0	5.2	4.8	20.5	5.8	5.2		17.8	17.1		19.5	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	13.8	0.1	0.0	6.3	0.1	0.0		1.4	0.0		0.1	0.0
Delay (s)	33.8	5.3	4.9	26.8	5.9	5.2		19.2	17.1		19.7	19.5
Level of Service	C	A	A	C	A	A		B	B		B	B
Approach Delay (s)		9.4			7.5			19.0			19.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	43.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	164	136	7	291	109	83	12	4	28	63	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1706	1583		1835	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1706	1583		1835	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	28	173	143	7	306	115	87	13	4	29	66	8
RTOR Reduction (vph)	0	0	60	0	0	68	0	0	3	0	0	7
Lane Group Flow (vph)	28	173	83	7	306	47	50	50	1	0	95	1
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	0.5	16.9	24.6	0.3	16.7	16.7	7.7	7.7	7.7		3.9	3.9
Effective Green, g (s)	1.5	18.9	26.6	1.3	18.7	18.7	8.7	8.7	8.7		4.9	4.9
Actuated g/C Ratio	0.03	0.41	0.58	0.03	0.41	0.41	0.19	0.19	0.19		0.11	0.11
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	58	1460	919	50	1445	646	319	324	301		196	169
v/s Ratio Prot	c0.02	0.05	0.02	0.00	c0.09		c0.03	0.03			c0.05	
v/s Ratio Perm			0.04			0.03			0.00			0.00
v/c Ratio	0.48	0.12	0.09	0.14	0.21	0.07	0.16	0.15	0.00		0.48	0.01
Uniform Delay, d1	21.8	8.3	4.2	21.7	8.8	8.3	15.5	15.5	15.0		19.3	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.3	0.1	0.1	0.5	0.1	0.1	0.3	0.3	0.0		0.7	0.0
Delay (s)	24.1	8.4	4.3	22.2	8.9	8.3	15.8	15.7	15.0		19.9	18.3
Level of Service	C	A	A	C	A	A	B	B	B		B	B
Approach Delay (s)		8.0			9.0			15.7			19.8	
Approach LOS		A			A			B			B	

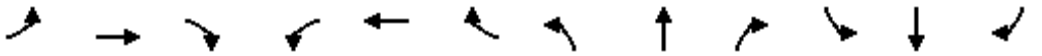
Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	35	84	43	12	5	23	703	71	39	1130	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1641		3433	1778		1676	4984	1414	1745	5187	1472
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1641		3433	1778		1676	4984	1414	1745	5187	1472
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	117	37	88	45	13	5	24	740	75	41	1189	96
RTOR Reduction (vph)	0	75	0	0	5	0	0	0	37	0	0	46
Lane Group Flow (vph)	117	50	0	45	13	0	24	740	38	41	1189	50
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	11.0	9.1		5.6	5.0		1.7	30.8	30.8	2.5	31.6	31.6
Effective Green, g (s)	12.0	10.1		6.6	6.0		2.7	34.2	34.2	3.5	35.0	35.0
Actuated g/C Ratio	0.18	0.15		0.10	0.09		0.04	0.51	0.51	0.05	0.52	0.52
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	314	246		337	159		67	2533	719	91	2698	766
v/s Ratio Prot	c0.07	0.03		c0.01	0.01		0.01	0.15		c0.02	c0.23	
v/s Ratio Perm									0.03			0.03
v/c Ratio	0.37	0.20		0.13	0.08		0.36	0.29	0.05	0.45	0.44	0.07
Uniform Delay, d1	24.3	25.1		27.7	28.1		31.5	9.6	8.4	31.0	10.1	8.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3		0.1	0.1		1.2	0.1	0.1	1.3	0.2	0.1
Delay (s)	24.6	25.4		27.8	28.2		32.7	9.7	8.4	32.3	10.3	8.1
Level of Service	C	C		C	C		C	A	A	C	B	A
Approach Delay (s)		25.0			27.9			10.2			10.8	
Approach LOS		C			C			B			B	

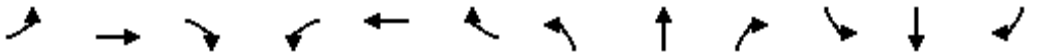
Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



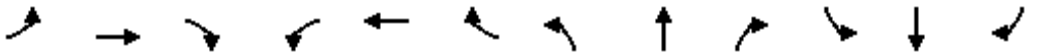
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	102	96	164	244	10	112	766	86	27	1190	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	1851		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	1851		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	107	101	173	257	11	118	806	91	28	1253	63
RTOR Reduction (vph)	0	0	87	0	1	0	0	0	34	0	0	25
Lane Group Flow (vph)	31	107	14	173	267	0	118	806	57	28	1253	38
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	5.0	21.1	21.1	11.9	28.0		9.5	94.6	94.6	3.8	87.8	87.8
Effective Green, g (s)	5.0	21.1	21.1	11.9	28.0		9.5	94.6	94.6	3.8	87.8	87.8
Actuated g/C Ratio	0.03	0.14	0.14	0.08	0.19		0.06	0.63	0.63	0.03	0.59	0.59
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3	5.3	4.0	6.4	6.4
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	5.6	5.6	2.0	4.3	4.3
Lane Grp Cap (vph)	59	498	223	272	346		217	3207	998	87	2976	927
v/s Ratio Prot	0.02	0.03		c0.05	c0.14		c0.03	0.16		0.01	c0.25	
v/s Ratio Perm			0.01						0.04			0.02
v/c Ratio	0.53	0.21	0.06	0.64	0.77		0.54	0.25	0.06	0.32	0.42	0.04
Uniform Delay, d1	71.3	57.1	55.9	67.0	58.0		68.1	12.2	10.6	71.8	17.1	13.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.50	0.32	0.04	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.3	0.2	3.6	10.7		1.4	0.2	0.1	0.8	0.2	0.0
Delay (s)	75.2	57.4	56.0	70.5	68.7		103.5	4.1	0.6	72.6	17.3	13.2
Level of Service	E	E	E	E	E		F	A	A	E	B	B
Approach Delay (s)		59.1			69.4			15.4			18.2	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



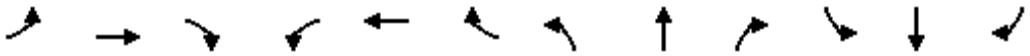
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	31	129	177	47	59	107	929	275	108	1362	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.3	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1762	1583	1610	3161		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1762	1583	1610	3161		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	33	136	186	49	62	113	978	289	114	1434	55
RTOR Reduction (vph)	0	0	128	0	35	0	0	0	74	0	0	19
Lane Group Flow (vph)	22	36	8	100	162	0	113	978	215	114	1434	36
Turn Type	Split		Perm	Split			Prot		pm+ov	Prot		Perm
Protected Phases	8	8		7	7		5	2	7	1	6	
Permitted Phases			8						2			6
Actuated Green, G (s)	8.8	8.8	8.8	16.1	16.1		10.3	95.4	111.5	10.1	95.2	95.2
Effective Green, g (s)	8.8	8.8	8.8	16.1	16.1		10.3	95.4	111.5	10.1	95.2	95.2
Actuated g/C Ratio	0.06	0.06	0.06	0.11	0.11		0.07	0.64	0.74	0.07	0.63	0.63
Clearance Time (s)	5.3	5.3	5.3	5.3	5.3		5.0	5.0	5.3	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	4.3	4.3
Lane Grp Cap (vph)	99	103	93	173	339		236	3234	1233	231	3227	1005
v/s Ratio Prot	0.01	c0.02		c0.06	0.05		c0.03	0.19	0.02	0.03	c0.28	
v/s Ratio Perm			0.01						0.12			0.02
v/c Ratio	0.22	0.35	0.09	0.58	0.48		0.48	0.30	0.17	0.49	0.44	0.04
Uniform Delay, d1	67.3	67.8	66.8	63.7	63.0		67.3	12.3	5.7	67.5	13.9	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.82	0.74	0.88	0.50	0.26
Incremental Delay, d2	1.1	2.1	0.4	4.6	1.1		1.5	0.2	0.1	1.6	0.1	0.0
Delay (s)	68.5	69.9	67.2	68.3	64.1		66.5	10.3	4.3	60.8	7.2	2.7
Level of Service	E	E	E	E	E		E	B	A	E	A	A
Approach Delay (s)		67.8			65.5			13.6			10.8	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



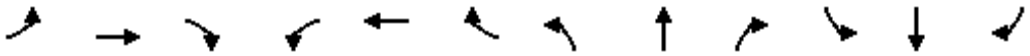
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	276	0	0	537	375	774	0	0	1538	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0			4.0	3.0	4.0			4.0	4.0
Lane Util. Factor			1.00			1.00	0.97	0.91			0.91	1.00
Frt			0.86			0.86	1.00	1.00			1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1611			1611	3433	5085			5085	1583
Flt Permitted			1.00			1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1611			1611	3433	5085			5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	291	0	0	565	395	815	0	0	1619	185
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	50
Lane Group Flow (vph)	0	0	291	0	0	565	395	815	0	0	1619	135
Turn Type			Free			Free	Prot					Perm
Protected Phases							5	2			6	
Permitted Phases			Free			Free						6
Actuated Green, G (s)			75.0			75.0	13.8	75.0			52.2	52.2
Effective Green, g (s)			75.0			75.0	14.8	75.0			53.2	53.2
Actuated g/C Ratio			1.00			1.00	0.20	1.00			0.71	0.71
Clearance Time (s)							4.0	5.0			5.0	5.0
Vehicle Extension (s)							3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			1611			1611	677	5085			3607	1123
v/s Ratio Prot							c0.12	0.16			c0.32	
v/s Ratio Perm			0.18			0.35						0.09
v/c Ratio			0.18			0.35	0.58	0.16			0.45	0.12
Uniform Delay, d1			0.0			0.0	27.3	0.0			4.6	3.5
Progression Factor			1.00			1.00	0.94	1.00			0.86	1.67
Incremental Delay, d2			0.2			0.6	1.3	0.1			0.4	0.2
Delay (s)			0.2			0.6	26.9	0.1			4.4	6.0
Level of Service			A			A	C	A			A	A
Approach Delay (s)		0.2			0.6			8.8			4.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



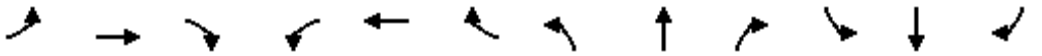
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	1237	0	0	215	0	952	184	535	1304	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.3			3.0		4.7	4.7	4.7	4.7	
Lane Util. Factor			1.00			1.00		0.91	1.00	0.97	0.91	
Frt			0.86			0.86		1.00	0.85	1.00	1.00	
Flt Protected			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1611			1611		5085	1583	3433	5085	
Flt Permitted			1.00			1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1611			1611		5085	1583	3433	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	1302	0	0	226	0	1002	194	563	1373	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	0	0	1302	0	0	226	0	1002	181	563	1373	0
Turn Type			custom			Free			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases			5			Free			2			
Actuated Green, G (s)			103.7			150.0		104.3	104.3	34.3	35.3	
Effective Green, g (s)			103.7			150.0		105.3	105.3	35.3	36.3	
Actuated g/C Ratio			0.69			1.00		0.70	0.70	0.24	0.24	
Clearance Time (s)			5.3					5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)			1114			1611		3570	1111	808	1231	
v/s Ratio Prot								0.20		0.16	c0.27	
v/s Ratio Perm			c0.81			c0.14			0.11			
v/c Ratio			1.17			0.14		0.28	0.16	0.70	1.12	
Uniform Delay, d1			23.1			0.0		8.3	7.5	52.5	56.9	
Progression Factor			1.00			1.00		0.99	0.85	0.70	0.78	
Incremental Delay, d2			85.8			0.2		0.2	0.3	2.4	62.9	
Delay (s)			109.0			0.2		8.4	6.7	39.1	107.4	
Level of Service			F			A		A	A	D	F	
Approach Delay (s)		109.0			0.2			8.1			87.5	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM Average Control Delay	68.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	5.3
Intersection Capacity Utilization	110.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



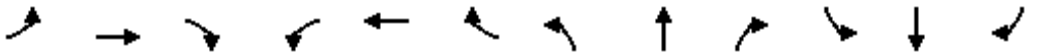
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	1	9	8	9	17	43	0	4	13	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.95			0.95		1.00	1.00		1.00	0.92	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750			1745		1770	3539		1770	1710	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1779			1776		1770	3539		1770	1710	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	1	1	9	8	9	18	45	0	4	14	17
RTOR Reduction (vph)	0	1	0	0	9	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	2	0	0	17	0	18	45	0	4	23	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		0.7			0.7		0.7	19.2		0.7	19.2	
Effective Green, g (s)		0.7			0.7		0.7	19.2		0.7	19.2	
Actuated g/C Ratio		0.02			0.02		0.02	0.51		0.02	0.51	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		33			33		33	1822		33	880	
v/s Ratio Prot							c0.01	0.01		0.00	c0.01	
v/s Ratio Perm		c0.00			c0.01							
v/c Ratio		0.06			0.52		0.55	0.02		0.12	0.03	
Uniform Delay, d1		18.0			18.1		18.1	4.4		18.0	4.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			6.7		9.5	0.0		0.6	0.0	
Delay (s)		18.3			24.8		27.6	4.5		18.6	4.5	
Level of Service		B			C		C	A		B	A	
Approach Delay (s)		18.3			24.8			11.1			6.1	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	37.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



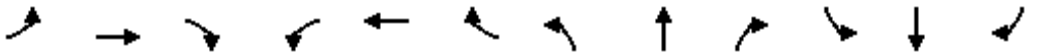
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	9	8	57	10	64	13	984	90	297	1965	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.4	3.4	3.0	2.5	3.2	3.0	2.5	3.2	3.2
Lane Util. Factor	0.86	0.86	1.00	0.86	0.86	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3044	3089	1583	3044	3104	1583	3335	4940	1538	3335	4940	1489
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3044	3089	1583	3044	3104	1583	3335	4940	1538	3335	4940	1489
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	9	8	60	11	67	14	1036	95	313	2068	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	52	35	8	40	31	67	14	1036	95	313	2068	44
Confl. Peds. (#/hr)												10
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	7.3	7.3	150.0	5.8	5.8	150.0	2.3	99.9	150.0	18.4	116.0	116.0
Effective Green, g (s)	8.8	8.8	150.0	7.3	7.3	150.0	3.8	102.4	150.0	19.9	118.5	118.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.05	1.00	0.03	0.68	1.00	0.13	0.79	0.79
Clearance Time (s)	4.0	4.0		4.9	4.9		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.9	3.9		2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	179	181	1583	148	151	1583	84	3372	1538	442	3903	1176
v/s Ratio Prot	c0.02	0.01		c0.01	0.01		0.00	0.21		c0.09	c0.42	
v/s Ratio Perm			0.01			0.04			0.06			0.03
v/c Ratio	0.29	0.19	0.01	0.27	0.21	0.04	0.17	0.31	0.06	0.71	0.53	0.04
Uniform Delay, d1	67.6	67.2	0.0	68.8	68.6	0.0	71.6	9.6	0.0	62.3	5.7	3.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	0.11	1.00	0.95	0.45	0.20
Incremental Delay, d2	0.9	0.5	0.0	1.3	0.9	0.1	0.3	0.1	0.1	0.4	0.0	0.0
Delay (s)	68.5	67.7	0.0	70.1	69.5	0.1	78.5	1.1	0.1	59.7	2.6	0.7
Level of Service	E	E	A	E	E	A	E	A	A	E	A	A
Approach Delay (s)		62.5			35.9			1.9			9.9	
Approach LOS		E			D			A			A	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1	118	5	2	4	42	1470	1	5	1557	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1775	1583		1799	1583	1770	3539		1770	3539	1583
Flt Permitted		0.95	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1775	1583		1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	181	1	124	5	2	4	44	1547	1	5	1639	164
RTOR Reduction (vph)	0	0	101	0	0	4	0	0	0	0	0	45
Lane Group Flow (vph)	0	182	23	0	7	0	44	1548	0	5	1639	119
Turn Type	Split		Perm	Perm		Perm	Prot			Prot		Perm
Protected Phases	4	4			3		5	2		1	6	
Permitted Phases			4	3		3						6
Actuated Green, G (s)		12.5	12.5		1.4	1.4	2.9	39.4		0.8	37.3	37.3
Effective Green, g (s)		13.5	13.5		2.4	2.4	5.9	41.4		1.8	40.3	40.3
Actuated g/C Ratio		0.18	0.18		0.03	0.03	0.08	0.57		0.02	0.55	0.55
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		328	293		61	52	143	2007		44	1954	874
v/s Ratio Prot		c0.10					c0.02	0.44		0.00	c0.46	
v/s Ratio Perm			0.01		c0.00	0.00						0.08
v/c Ratio		0.55	0.08		0.11	0.00	0.31	0.77		0.11	0.84	0.14
Uniform Delay, d1		27.0	24.6		34.3	34.1	31.6	12.2		34.8	13.6	7.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		1.2	0.0		0.3	0.0	0.4	2.0		0.4	3.5	0.1
Delay (s)		28.2	24.6		34.6	34.1	32.1	14.2		35.2	17.2	8.0
Level of Service		C	C		C	C	C	B		D	B	A
Approach Delay (s)		26.7			34.4			14.7			16.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	10.9
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

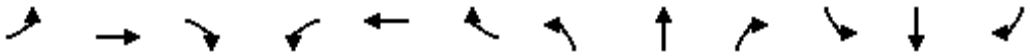


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	14	372	3	6	18	81	1206	8	7	1387	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	0.86		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1594		1770	1863	1583	3433	3536		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1594		1770	1863	1583	3433	3536		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	321	15	392	3	6	19	85	1269	8	7	1460	334
RTOR Reduction (vph)	0	118	0	0	0	19	0	0	0	0	0	95
Lane Group Flow (vph)	321	289	0	3	6	0	85	1277	0	7	1460	239
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						6
Actuated Green, G (s)	18.4	18.4		1.0	1.0	1.0	2.3	41.3		0.5	39.5	39.5
Effective Green, g (s)	19.4	19.4		2.0	2.0	2.0	3.3	43.8		1.5	42.0	42.0
Actuated g/C Ratio	0.25	0.25		0.03	0.03	0.03	0.04	0.56		0.02	0.53	0.53
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0		2.0	2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	846	393		45	47	40	144	1968		34	1889	845
v/s Ratio Prot	0.09	c0.18		0.00	c0.00		c0.02	0.36		0.00	c0.41	
v/s Ratio Perm						0.00						0.15
v/c Ratio	0.38	0.73		0.07	0.13	0.01	0.59	0.65		0.21	0.77	0.28
Uniform Delay, d1	24.6	27.3		37.4	37.5	37.4	37.0	12.1		38.0	14.6	10.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	7.0		0.2	0.4	0.0	4.3	1.0		1.1	2.4	0.4
Delay (s)	24.9	34.3		37.7	37.9	37.4	41.3	13.2		39.1	17.0	10.5
Level of Service	C	C		D	D	D	D	B		D	B	B
Approach Delay (s)		30.1			37.6			14.9			15.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	78.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

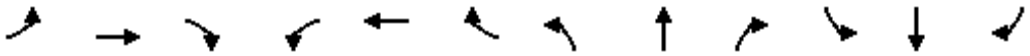
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	141	473	865	408	946	822
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	4.3
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	148	498	911	429	996	865
RTOR Reduction (vph)	0	22	0	243	0	0
Lane Group Flow (vph)	148	476	911	186	996	865
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	7.9	24.0	24.4	24.4	16.1	44.5
Effective Green, g (s)	8.9	28.6	26.7	26.7	18.4	45.5
Actuated g/C Ratio	0.14	0.46	0.43	0.43	0.30	0.74
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	5.3
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	495	777	1531	685	1024	2610
v/s Ratio Prot	0.04	c0.18	c0.26		c0.29	0.24
v/s Ratio Perm		0.12		0.12		
v/c Ratio	0.30	0.61	0.60	0.27	0.97	0.33
Uniform Delay, d1	23.6	12.4	13.4	11.2	21.4	2.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.0	0.7	0.3	21.5	0.1
Delay (s)	23.7	13.4	14.1	11.5	42.9	2.9
Level of Service	C	B	B	B	D	A
Approach Delay (s)	15.8		13.3			24.3
Approach LOS	B		B			C

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	4.7
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	9	18	36	20	45	13	1054	0	46	776	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.94		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1669			1720		1770	3539		1770	3484	
Flt Permitted	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1669			1720		1770	3539		1770	3484	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	295	9	19	38	21	47	14	1109	0	48	817	95
RTOR Reduction (vph)	0	8	0	0	45	0	0	0	0	0	11	0
Lane Group Flow (vph)	162	153	0	0	61	0	14	1109	0	48	901	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	10.3	10.3			3.1		0.5	26.4		1.7	27.2	
Effective Green, g (s)	10.3	10.3			3.1		0.5	26.4		1.7	27.2	
Actuated g/C Ratio	0.18	0.18			0.05		0.01	0.45		0.03	0.47	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Vehicle Extension (s)	2.0	2.0			2.0		2.0	4.2		2.0	3.2	
Lane Grp Cap (vph)	296	294			91		15	1600		52	1623	
v/s Ratio Prot	c0.10	0.09			c0.04		0.01	c0.31		c0.03	0.26	
v/s Ratio Perm												
v/c Ratio	0.55	0.52			0.68		0.93	0.69		0.92	0.56	
Uniform Delay, d1	21.9	21.8			27.2		28.9	12.8		28.3	11.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.6			14.5		195.4	1.5		95.0	0.4	
Delay (s)	23.0	22.5			41.6		224.3	14.2		123.3	11.7	
Level of Service	C	C			D		F	B		F	B	
Approach Delay (s)		22.7			41.6			16.9			17.2	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	16.9
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

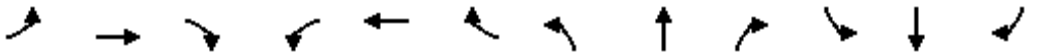


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	10	27	25	1	7	40	1065	23	8	803	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1777	1583	1770	3528		1770	3522	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1777	1583	1770	3528		1770	3522	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	11	28	26	1	7	42	1121	24	8	845	28
RTOR Reduction (vph)	0	0	25	0	0	7	0	1	0	0	2	0
Lane Group Flow (vph)	0	91	3	0	27	0	42	1144	0	8	871	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		7.3	7.3		2.2	2.2	4.7	33.7		0.6	29.6	
Effective Green, g (s)		7.3	7.3		2.2	2.2	4.7	33.7		0.6	29.6	
Actuated g/C Ratio		0.12	0.12		0.04	0.04	0.08	0.56		0.01	0.49	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)		215	190		64	57	137	1959		17	1717	
v/s Ratio Prot		c0.05			c0.02		0.02	c0.32		0.00	c0.25	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.42	0.02		0.42	0.00	0.31	0.58		0.47	0.51	
Uniform Delay, d1		24.7	23.5		28.6	28.2	26.5	8.9		29.9	10.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		1.6	0.0	0.5	0.6		7.3	0.4	
Delay (s)		25.2	23.6		30.3	28.2	26.9	9.4		37.2	10.9	
Level of Service		C	C		C	C	C	A		D	B	
Approach Delay (s)		24.8			29.8			10.1			11.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.7	Sum of lost time (s)	17.8
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

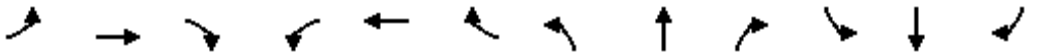
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	53	147	321	8	372	580
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	155	338	8	392	611
RTOR Reduction (vph)	0	121	0	6	0	0
Lane Group Flow (vph)	56	34	338	2	392	611
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.0	9.0	10.1	10.1	17.4	31.5
Effective Green, g (s)	11.0	11.0	12.8	12.8	19.4	34.2
Actuated g/C Ratio	0.22	0.22	0.25	0.25	0.39	0.68
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	752	347	1297	404	684	3464
v/s Ratio Prot	0.02		c0.07		c0.22	0.12
v/s Ratio Perm		c0.02		0.00		
v/c Ratio	0.07	0.10	0.26	0.01	0.57	0.18
Uniform Delay, d1	15.6	15.6	14.9	13.9	12.1	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.2	0.0	0.7	0.0
Delay (s)	15.6	15.7	15.1	14.0	12.9	2.9
Level of Service	B	B	B	B	B	A
Approach Delay (s)	15.7		15.1			6.8
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	50.2	Sum of lost time (s)	7.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	447	54	204	368	93	18	3	161	90	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	5003		1770	5085	1583		1786	1583	1681	1690	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	5003		1770	5085	1583		1786	1583	1681	1690	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	471	57	215	387	98	19	3	169	95	3	16
RTOR Reduction (vph)	0	16	0	0	0	59	0	0	139	0	0	14
Lane Group Flow (vph)	36	512	0	215	387	39	0	22	30	49	49	2
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	5.9	18.6		12.4	25.1	25.1		11.0	11.0	8.9	8.9	8.9
Effective Green, g (s)	6.9	20.9		13.4	27.4	27.4		12.0	12.0	9.9	9.9	9.9
Actuated g/C Ratio	0.10	0.31		0.20	0.40	0.40		0.18	0.18	0.15	0.15	0.15
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	179	1533		348	2043	636		314	279	244	245	230
v/s Ratio Prot	0.02	c0.10		c0.12	0.08			0.01		c0.03	0.03	
v/s Ratio Perm						0.02			c0.02			0.00
v/c Ratio	0.20	0.33		0.62	0.19	0.06		0.07	0.11	0.20	0.20	0.01
Uniform Delay, d1	28.1	18.3		25.1	13.2	12.5		23.4	23.6	25.7	25.7	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3		2.3	0.1	0.1		0.0	0.1	0.1	0.1	0.0
Delay (s)	28.3	18.5		27.4	13.3	12.6		23.5	23.7	25.8	25.8	25.0
Level of Service	C	B		C	B	B		C	C	C	C	C
Approach Delay (s)		19.2			17.5			23.6			25.7	
Approach LOS		B			B			C			C	

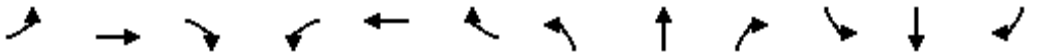
Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	218	763	283	65	217	77	371	429	35	80	332	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	229	803	298	68	228	81	391	452	37	84	349	49
RTOR Reduction (vph)	0	0	188	0	0	58	0	0	28	0	0	38
Lane Group Flow (vph)	229	803	110	68	228	23	391	452	9	84	349	11
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	10.4	23.5	23.5	4.3	17.0	17.0	9.3	16.5	16.5	6.3	13.5	13.5
Effective Green, g (s)	11.4	25.5	25.5	5.3	19.7	19.7	10.3	18.8	17.5	7.3	15.8	15.8
Actuated g/C Ratio	0.17	0.37	0.37	0.08	0.29	0.29	0.15	0.27	0.25	0.11	0.23	0.23
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	293	1312	587	136	1013	453	514	1390	403	377	1209	376
v/s Ratio Prot	c0.13	c0.23		0.04	0.06		c0.11	c0.09		0.02	0.07	
v/s Ratio Perm			0.07			0.01			0.01			0.01
v/c Ratio	0.78	0.61	0.19	0.50	0.23	0.05	0.76	0.33	0.02	0.22	0.29	0.03
Uniform Delay, d1	27.5	17.6	14.6	30.5	18.7	17.8	28.1	19.9	19.2	28.2	21.9	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.8	1.2	0.3	1.1	0.2	0.1	5.9	0.2	0.0	0.1	0.2	0.1
Delay (s)	39.3	18.8	15.0	31.5	18.9	17.9	34.0	20.2	19.3	28.3	22.1	20.6
Level of Service	D	B	B	C	B	B	C	C	B	C	C	C
Approach Delay (s)		21.5			21.0			26.3			23.0	
Approach LOS		C			C			C			C	

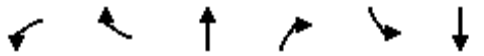
Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



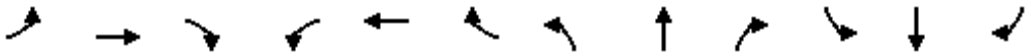
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	2	13	25	2	136	49	786	41	134	459	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.91	1.00
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1785	1583		1807	1600	1770	3736		1832	5790	1639
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1785	1583		1807	1600	1770	3736		1832	5790	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	2	14	26	2	143	52	827	43	141	483	22
RTOR Reduction (vph)	0	0	13	0	0	107	0	4	0	0	0	10
Lane Group Flow (vph)	0	15	1	0	28	36	52	866	0	141	483	12
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		2.5	2.5		3.7	11.6	1.6	22.7		7.9	29.0	29.0
Effective Green, g (s)		2.5	2.5		3.7	13.6	1.6	25.0		8.9	31.3	29.0
Actuated g/C Ratio		0.05	0.05		0.07	0.25	0.03	0.46		0.16	0.58	0.54
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		82	73		124	491	52	1726		301	3350	879
v/s Ratio Prot		c0.01			c0.02	0.01	c0.03	c0.23		c0.08	0.08	
v/s Ratio Perm			0.00			0.01						0.01
v/c Ratio		0.18	0.01		0.23	0.07	1.00	0.50		0.47	0.14	0.01
Uniform Delay, d1		24.8	24.6		23.8	15.4	26.2	10.2		20.5	5.2	5.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4	0.0		0.3	0.0	124.8	0.5		0.4	0.0	0.0
Delay (s)		25.2	24.6		24.2	15.5	151.1	10.7		20.9	5.3	5.9
Level of Service		C	C		C	B	F	B		C	A	A
Approach Delay (s)		24.9			16.9			18.6			8.7	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



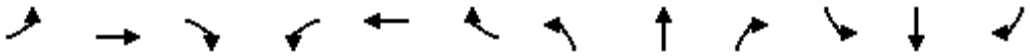
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	183	798	1	18	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	2.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3539		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3539		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	193	840	1	19	466
RTOR Reduction (vph)	0	151	0	0	0	0
Lane Group Flow (vph)	2	42	841	0	19	466
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	8.0	8.0	19.7		0.9	24.5
Effective Green, g (s)	9.0	9.0	21.7		1.9	26.5
Actuated g/C Ratio	0.22	0.22	0.52		0.05	0.64
Clearance Time (s)	4.0	4.0	4.8		4.0	4.9
Vehicle Extension (s)	2.0	2.0	3.9		2.0	2.9
Lane Grp Cap (vph)	385	344	1855		81	2265
v/s Ratio Prot	0.00		c0.24		0.01	c0.13
v/s Ratio Perm		c0.03				
v/c Ratio	0.01	0.12	0.45		0.23	0.21
Uniform Delay, d1	12.7	13.0	6.1		19.0	3.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.1	0.2		0.5	0.0
Delay (s)	12.7	13.1	6.4		19.6	3.1
Level of Service	B	B	A		B	A
Approach Delay (s)	13.1		6.4			3.8
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	41.4	Sum of lost time (s)	8.7
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	5	0	11	0	1472	27	23	1237	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		3.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3530		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3530		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	5	0	12	0	1549	28	24	1302	0
RTOR Reduction (vph)	0	0	0	0	0	12	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	5	0	0	0	1576	0	24	1302	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				1.3		1.3		51.4		0.9	56.3	
Effective Green, g (s)				2.3		2.3		53.4		1.9	58.3	
Actuated g/C Ratio				0.03		0.03		0.72		0.03	0.79	
Clearance Time (s)				4.0		4.0		4.9		4.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				55		49		2547		45	2788	
v/s Ratio Prot				c0.00				c0.45		0.01	c0.37	
v/s Ratio Perm						0.00						
v/c Ratio				0.09		0.01		0.62		0.53	0.47	
Uniform Delay, d1				34.8		34.7		5.2		35.6	2.6	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.3		0.0		0.7		6.0	0.3	
Delay (s)				35.1		34.8		5.9		41.6	2.9	
Level of Service				D		C		A		D	A	
Approach Delay (s)		0.0			34.9			5.9			3.6	
Approach LOS		A			C			A			A	

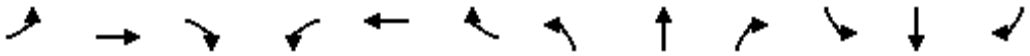
Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	24	31	60	27	54	34	1673	40	84	1182	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1645		1770	3523		1770	3522	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1645		1770	3523		1770	3522	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	25	33	63	28	57	36	1761	42	88	1244	31
RTOR Reduction (vph)	0	0	30	0	51	0	0	2	0	0	2	0
Lane Group Flow (vph)	51	25	3	63	34	0	36	1801	0	88	1273	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3									
Actuated Green, G (s)	6.1	6.1	6.1	7.7	7.7		3.9	47.0		5.3	48.8	
Effective Green, g (s)	7.1	7.1	7.1	8.7	8.7		4.9	49.0		6.3	50.8	
Actuated g/C Ratio	0.09	0.09	0.09	0.10	0.10		0.06	0.59		0.08	0.61	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	151	159	135	185	172		104	2070		134	2145	
v/s Ratio Prot	c0.03	0.01		c0.04	0.02		0.02	c0.51		c0.05	0.36	
v/s Ratio Perm			0.00									
v/c Ratio	0.34	0.16	0.02	0.34	0.20		0.35	0.87		0.66	0.59	
Uniform Delay, d1	35.9	35.4	35.0	34.7	34.2		37.7	14.5		37.5	10.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.4	0.1	0.9	0.5		0.7	4.5		8.5	0.5	
Delay (s)	37.0	35.8	35.0	35.6	34.6		38.4	19.0		46.0	10.5	
Level of Service	D	D	D	D	C		D	B		D	B	
Approach Delay (s)		36.1			35.0			19.4			12.8	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	83.4	Sum of lost time (s)	12.3
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

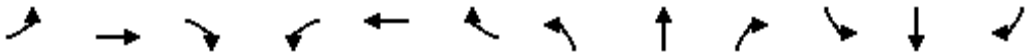
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	23	5	60	18	21	11	2517	16	12	1624	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.97		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2026			1984		1770	4983		1770	4962	
Flt Permitted		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2026			1984		1770	4983		1770	4962	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	24	5	63	19	22	12	2649	17	13	1709	58
RTOR Reduction (vph)	0	4	0	0	17	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	77	0	0	87	0	12	2665	0	13	1762	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split			Split			Prot			Prot		
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)		3.2			5.8		0.6	32.7		0.6	32.7	
Effective Green, g (s)		4.2			6.8		1.6	35.4		1.6	35.4	
Actuated g/C Ratio		0.07			0.11		0.03	0.59		0.03	0.59	
Clearance Time (s)		4.0			4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0		2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		142			225		47	2940		47	2928	
v/s Ratio Prot		c0.04			c0.04		0.01	c0.53		c0.01	0.36	
v/s Ratio Perm												
v/c Ratio		0.54			0.39		0.26	0.91		0.28	0.60	
Uniform Delay, d1		27.0			24.7		28.6	10.8		28.6	7.8	
Progression Factor		1.00			1.00		1.24	0.66		1.24	0.64	
Incremental Delay, d2		2.3			0.4		0.8	4.1		0.9	0.3	
Delay (s)		29.3			25.1		36.2	11.2		36.4	5.3	
Level of Service		C			C		D	B		D	A	
Approach Delay (s)		29.3			25.1			11.3			5.6	
Approach LOS		C			C			B			A	

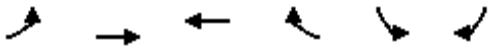
Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	0	21	65	0	18	3	2506	92	4	1644	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00		0.97	1.00		0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1532	1770		1532	1770	5053		1770	5083	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1532	1770		1532	1770	5053		1770	5083	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	0	22	68	0	19	3	2638	97	4	1731	5
RTOR Reduction (vph)	0	0	20	0	0	18	0	5	0	0	0	0
Lane Group Flow (vph)	46	0	2	68	0	1	3	2730	0	4	1736	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	3.7		3.7	3.7		3.7	0.6	39.0		0.6	39.0	
Effective Green, g (s)	4.7		4.7	4.7		4.7	1.6	40.5		2.6	40.5	
Actuated g/C Ratio	0.08		0.08	0.08		0.08	0.03	0.68		0.04	0.68	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	139		120	139		120	47	3411		77	3431	
v/s Ratio Prot	0.03			c0.04			0.00	c0.54		c0.00	0.34	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.33		0.01	0.49		0.01	0.06	0.80		0.05	0.51	
Uniform Delay, d1	26.2		25.5	26.5		25.5	28.5	6.9		27.5	4.8	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.24	0.69	
Incremental Delay, d2	0.5		0.0	1.0		0.0	0.2	2.1		0.1	0.1	
Delay (s)	26.7		25.5	27.5		25.5	28.7	9.0		34.2	3.5	
Level of Service	C		C	C		C	C	A		C	A	
Approach Delay (s)		26.3			27.1			9.0			3.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

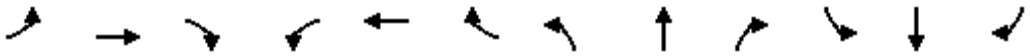


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	9	163	239	67	27	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	3539	3539	1583	1770	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1770	3539	3539	1583	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	172	252	71	28	0
RTOR Reduction (vph)	0	0	0	26	0	0
Lane Group Flow (vph)	9	172	252	45	28	0
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.6	31.4	26.8	26.8	2.3	
Effective Green, g (s)	1.6	32.4	27.8	27.8	3.3	
Actuated g/C Ratio	0.04	0.73	0.63	0.63	0.07	
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	
Lane Grp Cap (vph)	64	2588	2221	993	132	
v/s Ratio Prot	c0.01	0.05	c0.07		c0.02	
v/s Ratio Perm				0.03		
v/c Ratio	0.14	0.07	0.11	0.04	0.21	
Uniform Delay, d1	20.7	1.7	3.3	3.2	19.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.0	0.0	0.0	0.3	
Delay (s)	21.1	1.7	3.3	3.2	19.6	
Level of Service	C	A	A	A	B	
Approach Delay (s)		2.7	3.3		19.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	44.3	Sum of lost time (s)	11.6
Intersection Capacity Utilization	18.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

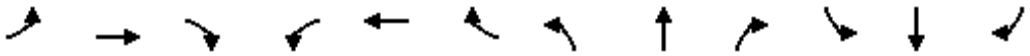
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	355	308	80	185	37	256	549	86	49	215	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4936	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4936	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	49	374	324	84	195	39	269	578	91	52	226	55
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	40	0
Lane Group Flow (vph)	49	374	324	84	195	39	269	578	91	52	241	0
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			
Actuated Green, G (s)	3.2	14.5	66.3	5.3	17.0	66.3	11.5	23.8	66.3	3.7	16.0	
Effective Green, g (s)	4.2	17.2	66.3	6.3	19.7	66.3	12.5	26.1	66.3	4.7	18.3	
Actuated g/C Ratio	0.06	0.26	1.00	0.10	0.30	1.00	0.19	0.39	1.00	0.07	0.28	
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	112	918	1583	168	1052	1583	334	1393	1583	125	1362	
v/s Ratio Prot	0.03	c0.11		c0.05	0.06		c0.15	c0.16		0.03	0.05	
v/s Ratio Perm			c0.20			0.02			0.06			
v/c Ratio	0.44	0.41	0.20	0.50	0.19	0.02	0.81	0.41	0.06	0.42	0.18	
Uniform Delay, d1	29.9	20.3	0.0	28.5	17.3	0.0	25.7	14.6	0.0	29.5	18.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.5	0.3	0.9	0.2	0.0	12.5	0.4	0.1	0.8	0.1	
Delay (s)	30.9	20.8	0.3	29.4	17.5	0.0	38.2	15.0	0.1	30.3	18.4	
Level of Service	C	C	A	C	B	A	D	B	A	C	B	
Approach Delay (s)		12.6			18.5			20.2			20.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	41	31	47	11	38	19	1288	62	49	347	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1791	1583	1770	3515		1770	3528	
Flt Permitted		0.93	1.00		0.73	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1734	1583		1363	1583	1770	3515		1770	3528	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	43	33	49	12	40	20	1356	65	52	365	8
RTOR Reduction (vph)	0	0	28	0	0	34	0	5	0	0	2	0
Lane Group Flow (vph)	0	54	5	0	61	6	20	1416	0	52	371	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		6.7	6.7		6.7	6.7	0.6	35.4		3.3	38.1	
Effective Green, g (s)		8.3	8.3		8.3	8.3	1.6	38.1		4.3	40.8	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.03	0.64		0.07	0.68	
Clearance Time (s)		4.9	4.9		4.9	4.9	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		240	219		189	219	47	2232		127	2399	
v/s Ratio Prot							0.01	c0.40		c0.03	0.11	
v/s Ratio Perm		0.03	0.00		c0.04	0.00						
v/c Ratio		0.23	0.02		0.32	0.03	0.43	0.63		0.41	0.15	
Uniform Delay, d1		23.0	22.3		23.3	22.4	28.7	6.7		26.6	3.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		0.7	0.0	2.2	0.7		0.8	0.1	
Delay (s)		23.3	22.4		24.0	22.4	31.0	7.3		27.4	3.6	
Level of Service		C	C		C	C	C	A		C	A	
Approach Delay (s)		23.0			23.4			7.7			6.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

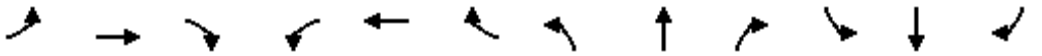


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	4	2	21	1	22	6	1240	31	20	348	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1583		1778	1583	1770	3526		1770	3532	
Flt Permitted		0.88	1.00		0.79	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1634	1583		1471	1583	1770	3526		1770	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	4	2	22	1	23	6	1305	33	21	366	5
RTOR Reduction (vph)	0	0	2	0	0	20	0	1	0	0	1	0
Lane Group Flow (vph)	0	11	0	0	23	3	6	1337	0	21	370	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4		4						
Actuated Green, G (s)		9.9	9.9		9.9	9.9	0.6	64.4		2.0	65.8	
Effective Green, g (s)		10.9	10.9		10.9	10.9	1.6	67.4		3.0	68.8	
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.02	0.75		0.03	0.76	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)		198	192		178	192	31	2641		59	2700	
v/s Ratio Prot							0.00	c0.38		c0.01	0.10	
v/s Ratio Perm		0.01	0.00		c0.02	0.00						
v/c Ratio		0.06	0.00		0.13	0.01	0.19	0.51		0.36	0.14	
Uniform Delay, d1		35.0	34.8		35.3	34.8	43.6	4.6		42.6	2.8	
Progression Factor		1.00	1.00		1.00	1.00	0.75	0.26		1.00	1.00	
Incremental Delay, d2		0.0	0.0		0.1	0.0	1.0	0.2		1.3	0.1	
Delay (s)		35.0	34.8		35.4	34.8	33.8	1.4		43.9	2.9	
Level of Service		D	C		D	C	C	A		D	A	
Approach Delay (s)		35.0			35.1			1.5			5.1	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	3.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

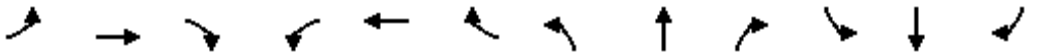
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	28	104	1161	43	34	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3520		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3520		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	109	1222	45	36	353
RTOR Reduction (vph)	0	96	2	0	0	0
Lane Group Flow (vph)	29	13	1265	0	36	353
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	10.1	10.1	62.6		3.6	70.2
Effective Green, g (s)	11.1	11.1	65.6		4.6	73.2
Actuated g/C Ratio	0.12	0.12	0.73		0.05	0.81
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	218	195	2566		90	2878
v/s Ratio Prot	c0.02		c0.36		c0.02	0.10
v/s Ratio Perm		0.01				
v/c Ratio	0.13	0.07	0.49		0.40	0.12
Uniform Delay, d1	35.2	34.9	5.2		41.4	1.7
Progression Factor	1.00	1.00	1.00		1.14	0.81
Incremental Delay, d2	0.1	0.1	0.2		1.1	0.1
Delay (s)	35.3	34.9	5.3		48.4	1.5
Level of Service	D	C	A		D	A
Approach Delay (s)	35.0		5.3			5.8
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



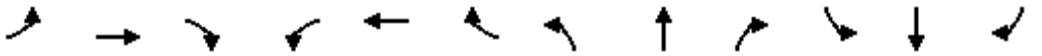
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	0	200	0	1	0	203	692	1	0	512	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5			3.0		3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00	0.98			1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85			1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400	1542			1863		1660	3417	1544		3491	1500
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400	1542			1863		1660	3417	1544		3491	1500
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	136	0	211	0	1	0	214	728	1	0	539	214
RTOR Reduction (vph)	0	161	0	0	0	0	0	0	0	0	0	145
Lane Group Flow (vph)	136	50	0	0	1	0	214	728	1	0	539	69
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	10.4	10.4			1.1		8.6	26.7	26.7		14.1	14.1
Effective Green, g (s)	12.9	12.9			2.1		9.6	30.1	30.1		17.5	17.5
Actuated g/C Ratio	0.24	0.24			0.04		0.18	0.55	0.55		0.32	0.32
Clearance Time (s)	6.0	6.0			4.0		4.0	6.4	6.4		6.4	6.4
Vehicle Extension (s)	4.1	4.1			2.0		2.0	4.3	4.3		4.3	4.3
Lane Grp Cap (vph)	803	364			72		292	1884	851		1119	481
v/s Ratio Prot	c0.04	0.03			c0.00		c0.13	0.21			c0.15	
v/s Ratio Perm									0.00			0.05
v/c Ratio	0.17	0.14			0.01		0.73	0.39	0.00		0.48	0.14
Uniform Delay, d1	16.6	16.5			25.3		21.3	7.0	5.5		14.9	13.2
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.2			0.0		7.9	0.2	0.0		0.5	0.2
Delay (s)	16.7	16.7			25.3		29.2	7.2	5.5		15.4	13.4
Level of Service	B	B			C		C	A	A		B	B
Approach Delay (s)		16.7			25.3			12.2			14.9	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



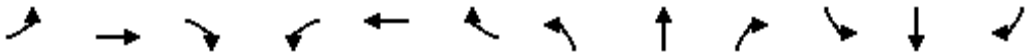
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	0	130	2	0	2	47	845	0	7	683	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4		4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539		1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1770	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	60	0	137	2	0	2	49	889	0	7	719	15
RTOR Reduction (vph)	0	0	115	0	0	2	0	0	0	0	0	8
Lane Group Flow (vph)	0	60	22	0	2	0	49	889	0	7	719	7
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)		8.1	8.1		2.6	2.6	2.5	26.5		0.7	24.7	24.7
Effective Green, g (s)		8.1	9.1		2.6	2.6	3.5	27.5		0.7	25.7	25.7
Actuated g/C Ratio		0.14	0.16		0.05	0.05	0.06	0.49		0.01	0.46	0.46
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)		255	256		82	73	110	1729		22	1615	723
v/s Ratio Prot		c0.03			c0.00		c0.03	c0.25		0.00	0.20	
v/s Ratio Perm			0.01			0.00						0.00
v/c Ratio		0.24	0.09		0.02	0.00	0.45	0.51		0.32	0.45	0.01
Uniform Delay, d1		21.4	20.1		25.6	25.6	25.5	9.8		27.6	10.4	8.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2	0.1		0.0	0.0	1.0	0.4		3.0	0.3	0.0
Delay (s)		21.5	20.1		25.7	25.6	26.5	10.2		30.6	10.7	8.4
Level of Service		C	C		C	C	C	B		C	B	A
Approach Delay (s)		20.5			25.6			11.1			10.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	11.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



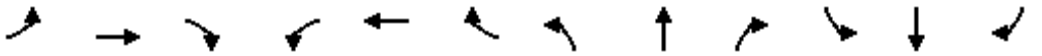
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	1	276	13	1	7	459	826	32	21	680	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1610	3070		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1610	3070		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	1	291	14	1	7	483	869	34	22	716	102
RTOR Reduction (vph)	0	0	237	0	7	0	0	0	15	0	0	74
Lane Group Flow (vph)	39	39	54	8	7	0	483	869	19	22	716	28
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.0	11.0	11.0	2.8	2.8		21.2	37.0	37.0	1.9	17.3	17.3
Effective Green, g (s)	13.7	13.7	13.7	3.8	3.8		22.2	40.4	40.4	2.9	20.7	20.7
Actuated g/C Ratio	0.18	0.18	0.18	0.05	0.05		0.30	0.55	0.55	0.04	0.28	0.28
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	311	312	293	83	157		530	1929	863	69	1421	442
v/s Ratio Prot	0.02	0.02		c0.00	0.00		c0.27	c0.25		0.01	0.14	
v/s Ratio Perm			c0.03						0.01			0.02
v/c Ratio	0.13	0.12	0.18	0.10	0.05		0.91	0.45	0.02	0.32	0.50	0.06
Uniform Delay, d1	25.2	25.2	25.5	33.5	33.4		25.0	10.2	7.8	34.6	22.4	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.5	0.8	0.2		19.6	0.3	0.0	1.0	0.4	0.1
Delay (s)	25.5	25.5	26.0	34.3	33.6		44.6	10.5	7.8	35.6	22.8	19.7
Level of Service	C	C	C	C	C		D	B	A	D	C	B
Approach Delay (s)		25.9			33.9			22.3			22.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	10.7
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	2	132	45	3	22	152	1448	90	74	918	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1688	1583		1779	1583	1770	5041		1770	5013	
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1688	1583		1779	1583	1770	5041		1770	5013	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	139	2	139	47	3	23	160	1524	95	78	966	101
RTOR Reduction (vph)	0	0	123	0	0	21	0	4	0	0	8	0
Lane Group Flow (vph)	71	70	16	0	50	2	160	1615	0	78	1059	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)	13.0	13.0	13.0		10.8	10.8	14.5	71.0		7.5	64.0	
Effective Green, g (s)	14.0	14.0	14.0		11.8	11.8	15.5	74.0		8.5	67.0	
Actuated g/C Ratio	0.12	0.12	0.12		0.10	0.10	0.13	0.62		0.07	0.56	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3		2.0	5.3	
Lane Grp Cap (vph)	196	197	185		175	156	229	3109		125	2799	
v/s Ratio Prot	c0.04	0.04			c0.03		c0.09	c0.32		c0.04	0.21	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.36	0.36	0.09		0.29	0.01	0.70	0.52		0.62	0.38	
Uniform Delay, d1	48.9	48.8	47.3		50.2	48.8	50.0	13.0		54.2	14.8	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4	0.1		0.3	0.0	7.3	0.6		6.8	0.2	
Delay (s)	49.3	49.2	47.4		50.5	48.9	57.3	13.6		61.0	15.0	
Level of Service	D	D	D		D	D	E	B		E	B	
Approach Delay (s)		48.3			50.0			17.5			18.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

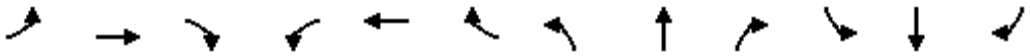


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	345	66	296	50	128	90	119	1689	19	28	1059	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.91	0.91			0.95		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.90			0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3030			3330		3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.73			0.78		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	2243			2609		3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	363	69	312	53	135	95	125	1778	20	29	1115	181
RTOR Reduction (vph)	0	113	0	0	58	0	0	0	8	0	0	98
Lane Group Flow (vph)	261	370	0	0	225	0	125	1778	12	29	1115	83
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	23.1	44.3			17.2		8.0	54.6	54.6	5.4	52.0	52.0
Effective Green, g (s)	24.1	47.0			19.9		9.0	57.6	57.6	6.4	55.0	55.0
Actuated g/C Ratio	0.20	0.39			0.17		0.08	0.48	0.48	0.05	0.46	0.46
Clearance Time (s)	4.0	5.7			5.7		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3			4.3		2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	323	1048			433		257	2441	760	94	2331	726
v/s Ratio Prot	c0.16	0.08					c0.04	c0.35		0.02	0.22	
v/s Ratio Perm		0.06			c0.09				0.01			0.05
v/c Ratio	0.81	0.35			1.38dr		0.49	0.73	0.02	0.31	0.48	0.11
Uniform Delay, d1	45.7	25.8			45.7		53.3	24.9	16.3	54.7	22.5	18.6
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.0	0.3			1.7		0.5	1.9	0.0	0.7	0.3	0.1
Delay (s)	58.8	26.1			47.4		53.8	26.9	16.4	55.4	22.8	18.7
Level of Service	E	C			D		D	C	B	E	C	B
Approach Delay (s)		37.6			47.4			28.5			23.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

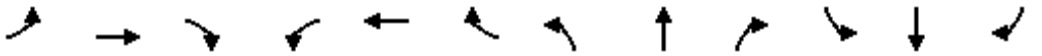
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	206	15	27	356	8	28	3	28	7	2	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.94			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	3503		1770	3528			1703			1709	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (perm)	1770	3503		1770	3528			1703			1709	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	217	16	28	375	8	29	3	29	7	2	8
RTOR Reduction (vph)	0	4	0	0	1	0	0	25	0	0	8	0
Lane Group Flow (vph)	1	229	0	28	382	0	0	36	0	0	9	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.8	22.3		0.8	22.3			6.3			1.0	
Effective Green, g (s)	1.8	25.0		1.8	25.0			7.3			2.0	
Actuated g/C Ratio	0.04	0.52		0.04	0.52			0.15			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	66	1821		66	1834			258			71	
v/s Ratio Prot	0.00	0.07		c0.02	c0.11			c0.02			c0.01	
v/s Ratio Perm												
v/c Ratio	0.02	0.13		0.42	0.21			0.14			0.13	
Uniform Delay, d1	22.3	5.9		22.6	6.2			17.7			22.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.1		1.6	0.1			0.1			0.3	
Delay (s)	22.3	6.0		24.2	6.3			17.8			22.5	
Level of Service	C	A		C	A			B			C	
Approach Delay (s)		6.1			7.5			17.8			22.5	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	228	6	20	488	18	9	2	9	43	0	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1711			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1711			1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	97	240	6	21	514	19	9	2	9	45	0	174
RTOR Reduction (vph)	0	0	3	0	0	12	0	9	0	0	0	135
Lane Group Flow (vph)	97	240	3	21	514	7	0	11	0	0	45	39
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	6.6	25.7	25.7	0.9	20.0	20.0		1.1			11.0	11.0
Effective Green, g (s)	7.6	28.7	28.7	1.9	23.0	23.0		2.1			13.0	13.0
Actuated g/C Ratio	0.13	0.49	0.49	0.03	0.39	0.39		0.04			0.22	0.22
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	230	1739	778	58	1394	623		62			394	352
v/s Ratio Prot	c0.05	0.07		0.01	c0.15			c0.01			c0.03	
v/s Ratio Perm			0.00			0.00						0.02
v/c Ratio	0.42	0.14	0.00	0.36	0.37	0.01		0.18			0.11	0.11
Uniform Delay, d1	23.4	8.1	7.6	27.7	12.6	10.8		27.3			18.1	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.5	0.0	0.0	1.4	0.2	0.0		0.5			0.0	0.1
Delay (s)	23.8	8.1	7.6	29.1	12.7	10.8		27.8			18.2	18.1
Level of Service	C	A	A	C	B	B		C			B	B
Approach Delay (s)		12.6			13.3			27.8			18.1	
Approach LOS		B			B			C			B	

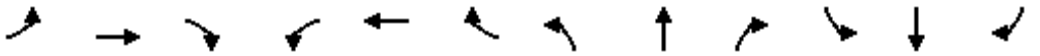
Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	12.7
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	186	11	52	315	6	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	196	12	55	332	6	58
RTOR Reduction (vph)	0	10	0	0	0	44
Lane Group Flow (vph)	196	2	55	332	6	15
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	5.5	5.5	2.3	12.8	7.6	7.6
Effective Green, g (s)	5.5	5.5	2.3	12.8	7.6	7.6
Actuated g/C Ratio	0.18	0.18	0.08	0.42	0.25	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	640	286	134	1490	443	396
v/s Ratio Prot	0.06		0.03	c0.09	0.00	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.31	0.01	0.41	0.22	0.01	0.04
Uniform Delay, d1	10.8	10.2	13.4	5.6	8.6	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	2.0	0.1	0.0	0.0
Delay (s)	11.1	10.2	15.4	5.7	8.6	8.7
Level of Service	B	B	B	A	A	A
Approach Delay (s)	11.0			7.1	8.7	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	30.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

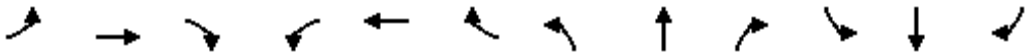
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	324	11	277	996	430	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	341	12	292	1048	453	271
RTOR Reduction (vph)	0	10	0	224	0	0
Lane Group Flow (vph)	341	2	292	824	453	271
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	15.1	15.1	59.0	59.0	30.0	94.0
Effective Green, g (s)	15.1	15.1	59.0	59.0	30.0	94.0
Actuated g/C Ratio	0.13	0.13	0.50	0.50	0.25	0.79
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	435	201	1753	784	446	2793
v/s Ratio Prot	c0.10		0.08		c0.26	0.08
v/s Ratio Perm		0.00		c0.52		
v/c Ratio	0.78	0.01	0.17	1.05	1.02	0.10
Uniform Delay, d1	50.4	45.5	16.5	30.0	44.5	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	0.0	0.0	46.4	46.6	0.0
Delay (s)	59.4	45.5	16.6	76.4	91.2	2.9
Level of Service	E	D	B	E	F	A
Approach Delay (s)	58.9		63.4			58.1
Approach LOS	E		E			E

Intersection Summary			
HCM Average Control Delay	61.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	119.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



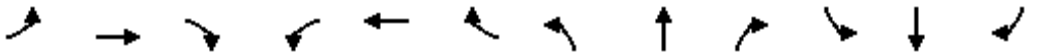
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	432	0	441	0	1657	217	0	829	768
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Lane Util. Factor				0.94		1.00		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				4990		1583		5085	1583		5085	1583
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				4990		1583		5085	1583		5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	455	0	464	0	1744	228	0	873	808
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	96	0	0	341
Lane Group Flow (vph)	0	0	0	455	0	447	0	1744	132	0	873	467
Turn Type				custom		custom			Perm			Perm
Protected Phases								2			6	
Permitted Phases				8		8			2			6
Actuated Green, G (s)				27.7		27.7		52.4	52.4		52.4	52.4
Effective Green, g (s)				27.7		27.7		52.4	52.4		52.4	52.4
Actuated g/C Ratio				0.31		0.31		0.58	0.58		0.58	0.58
Clearance Time (s)				5.3		5.3		5.3	5.3		5.3	5.3
Vehicle Extension (s)				2.0		2.0		3.8	3.8		3.9	3.9
Lane Grp Cap (vph)				1524		483		2938	915		2938	915
v/s Ratio Prot								c0.34			0.17	
v/s Ratio Perm				0.09		c0.28			0.08			0.29
v/c Ratio				0.30		0.93		0.59	0.14		0.30	0.51
Uniform Delay, d1				24.1		30.5		12.3	8.8		9.8	11.5
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.0		23.5		0.4	0.1		0.1	0.6
Delay (s)				24.1		54.0		12.7	8.9		9.8	12.1
Level of Service				C		D		B	A		A	B
Approach Delay (s)		0.0			39.2			12.2			10.9	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.7	Sum of lost time (s)	10.6
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



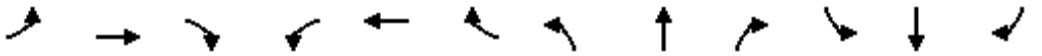
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	357	113	17	0	162	0	1673	64	56	952	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3	4.0		4.0		4.9	4.9	4.0	4.9	
Lane Util. Factor		0.95	1.00	0.97		1.00		0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	3433		1583		3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	3433		1583		3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	376	119	18	0	171	0	1761	67	59	1002	0
RTOR Reduction (vph)	0	0	101	0	0	0	0	0	7	0	0	0
Lane Group Flow (vph)	0	376	18	18	0	171	0	1761	60	59	1002	0
Turn Type			Perm	Prot		custom			Perm	Prot		
Protected Phases		4		3		3 1		2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		18.3	18.3	12.9		20.5		64.0	64.0	7.6	75.6	
Effective Green, g (s)		18.3	18.3	12.9		20.5		64.0	64.0	7.6	75.6	
Actuated g/C Ratio		0.15	0.15	0.11		0.17		0.53	0.53	0.06	0.62	
Clearance Time (s)		5.3	5.3	4.0				4.9	4.9	4.0	4.9	
Vehicle Extension (s)		2.8	2.8	2.0				3.6	3.6	2.0	3.6	
Lane Grp Cap (vph)		535	239	366		268		1872	837	111	2211	
v/s Ratio Prot		c0.11		0.01		c0.11		c0.50		0.03	0.28	
v/s Ratio Perm			0.01						0.04			
v/c Ratio		0.70	0.08	0.05		0.64		0.94	0.07	0.53	0.45	
Uniform Delay, d1		48.8	44.1	48.5		46.8		26.7	14.0	55.0	11.9	
Progression Factor		1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		4.0	0.1	0.0		3.6		10.1	0.0	2.4	0.2	
Delay (s)		52.8	44.2	48.6		50.4		36.8	14.0	57.4	12.1	
Level of Service		D	D	D		D		D	B	E	B	
Approach Delay (s)		50.7			50.3			36.0			14.6	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	121.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



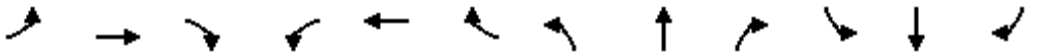
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	544	4	2	176	185	8	64	2	489	14	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1853	1583		1776	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1853	1583		1776	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	573	4	2	185	195	8	67	2	515	15	111
RTOR Reduction (vph)	0	0	3	0	0	149	0	0	2	0	0	35
Lane Group Flow (vph)	68	573	1	2	185	46	0	75	0	0	530	76
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	3.0	13.9	13.9	0.5	11.4	11.4		4.8	4.8		23.3	23.3
Effective Green, g (s)	4.0	16.9	16.9	1.5	14.4	14.4		5.8	5.8		24.3	24.3
Actuated g/C Ratio	0.07	0.28	0.28	0.02	0.24	0.24		0.10	0.10		0.40	0.40
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	117	989	442	44	842	377		178	152		713	636
v/s Ratio Prot	c0.04	c0.16		0.00	0.05			c0.04			c0.30	
v/s Ratio Perm			0.00			0.03			0.00			0.05
v/c Ratio	0.58	0.58	0.00	0.05	0.22	0.12		0.42	0.00		0.74	0.12
Uniform Delay, d1	27.4	18.7	15.7	28.8	18.5	18.1		25.8	24.7		15.4	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	4.7	0.9	0.0	0.2	0.2	0.2		0.6	0.0		3.7	0.0
Delay (s)	32.1	19.6	15.7	29.0	18.7	18.3		26.4	24.7		19.1	11.4
Level of Service	C	B	B	C	B	B		C	C		B	B
Approach Delay (s)		20.9			18.5			26.3			17.8	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



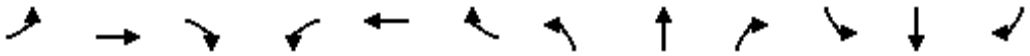
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	1024	13	74	349	52	12	92	92	113	49	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	1078	14	78	367	55	13	97	97	119	52	19
RTOR Reduction (vph)	0	0	9	0	0	32	0	0	80	0	0	14
Lane Group Flow (vph)	47	1078	5	78	367	23	13	97	17	119	52	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.5	29.7	29.7	6.6	31.8	31.8	1.2	13.2	13.2	7.3	19.3	19.3
Effective Green, g (s)	4.5	29.7	29.7	6.6	31.8	31.8	1.2	13.2	13.2	7.3	19.3	19.3
Actuated g/C Ratio	0.06	0.39	0.39	0.09	0.41	0.41	0.02	0.17	0.17	0.10	0.25	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	104	1369	612	152	1465	655	28	320	272	168	468	398
v/s Ratio Prot	0.03	c0.30		c0.04	0.10		0.01	c0.05		c0.07	0.03	
v/s Ratio Perm			0.00			0.01			0.01			0.00
v/c Ratio	0.45	0.79	0.01	0.51	0.25	0.03	0.46	0.30	0.06	0.71	0.11	0.01
Uniform Delay, d1	35.0	20.8	14.5	33.6	14.7	13.4	37.5	27.8	26.6	33.7	22.1	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	3.1	0.0	2.9	0.1	0.0	11.7	0.5	0.1	12.8	0.1	0.0
Delay (s)	38.1	23.8	14.5	36.5	14.8	13.4	49.2	28.3	26.7	46.5	22.2	21.6
Level of Service	D	C	B	D	B	B	D	C	C	D	C	C
Approach Delay (s)		24.3			18.0			28.9			37.4	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



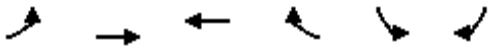
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	576	627	72	41	153	147	46	410	127	131	293	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	606	660	76	43	161	155	48	432	134	138	308	173
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	606	660	76	43	161	155	48	432	134	138	308	173
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	16.7	24.5	68.8	4.2	12.0	68.8	4.2	13.2	68.8	7.2	16.5	68.8
Effective Green, g (s)	17.7	27.5	68.8	5.2	15.0	68.8	5.2	15.9	68.8	8.2	19.2	68.8
Actuated g/C Ratio	0.26	0.40	1.00	0.08	0.22	1.00	0.08	0.23	1.00	0.12	0.28	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	883	1415	1583	259	772	1583	259	818	1583	409	988	1583
v/s Ratio Prot	c0.18	c0.19		0.01	0.05		0.01	c0.12		0.04	c0.09	
v/s Ratio Perm			0.05			0.10			0.08			0.11
v/c Ratio	0.69	0.47	0.05	0.17	0.21	0.10	0.19	0.53	0.08	0.34	0.31	0.11
Uniform Delay, d1	23.0	15.2	0.0	29.8	22.0	0.0	29.8	23.2	0.0	27.8	19.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.4	0.1	0.1	0.2	0.1	0.1	0.8	0.1	0.2	0.3	0.1
Delay (s)	24.8	15.7	0.1	29.9	22.3	0.1	29.9	24.0	0.1	28.0	19.9	0.1
Level of Service	C	B	A	C	C	A	C	C	A	C	B	A
Approach Delay (s)		18.9			13.6			19.3			16.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



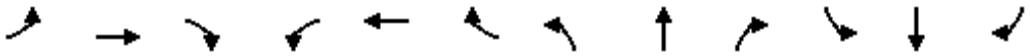
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	750	43	145	163	19	69	189	83	182	132	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3511		1770	3484		1770	1778		1770	1752	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3511		1770	3484		1770	1778		1770	1752	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	122	789	45	153	172	20	73	199	87	192	139	91
RTOR Reduction (vph)	0	5	0	0	10	0	0	20	0	0	29	0
Lane Group Flow (vph)	122	829	0	153	182	0	73	266	0	192	201	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.9	22.6		6.1	21.8		6.2	19.0		9.1	21.9	
Effective Green, g (s)	7.9	25.3		7.1	24.5		7.2	21.3		10.1	24.2	
Actuated g/C Ratio	0.10	0.34		0.09	0.32		0.10	0.28		0.13	0.32	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	185	1178		167	1132		169	502		237	562	
v/s Ratio Prot	0.07	c0.24		c0.09	0.05		0.04	c0.15		c0.11	c0.11	
v/s Ratio Perm												
v/c Ratio	0.66	0.70		0.92	0.16		0.43	0.53		0.81	0.36	
Uniform Delay, d1	32.5	21.8		33.9	18.1		32.2	22.8		31.7	19.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.3	2.0		45.0	0.1		0.6	1.3		17.7	0.5	
Delay (s)	38.8	23.8		78.9	18.2		32.8	24.1		49.4	20.2	
Level of Service	D	C		E	B		C	C		D	C	
Approach Delay (s)		25.7			45.1			25.9			33.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	75.4	Sum of lost time (s)	11.2
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



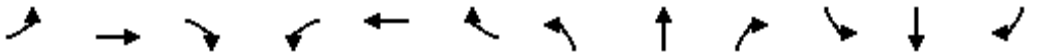
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	8	1027	331	17	79	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		2.0	2.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3513		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3513		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	1081	348	18	83	14
RTOR Reduction (vph)	0	0	3	0	0	12
Lane Group Flow (vph)	8	1081	363	0	83	2
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	1.2	33.4	28.2		6.7	6.7
Effective Green, g (s)	2.2	36.1	30.9		7.7	7.7
Actuated g/C Ratio	0.05	0.74	0.63		0.16	0.16
Clearance Time (s)	4.0	5.7	5.7		3.0	3.0
Vehicle Extension (s)	2.0	3.8	3.8		2.0	2.0
Lane Grp Cap (vph)	80	2618	2224		279	250
v/s Ratio Prot	0.00	c0.31	0.10		c0.05	
v/s Ratio Perm						0.00
v/c Ratio	0.10	0.41	0.16		0.30	0.01
Uniform Delay, d1	22.4	2.4	3.7		18.2	17.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.1	0.0		0.2	0.0
Delay (s)	22.6	2.5	3.7		18.4	17.3
Level of Service	C	A	A		B	B
Approach Delay (s)		2.7	3.7		18.2	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	5.0
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



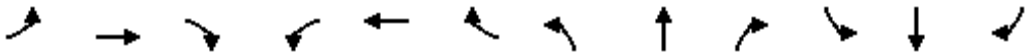
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1075	51	130	289	0	116	0	116	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7	4.7	2.0	2.7			2.0	2.0			
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00			
Frt		1.00	0.85	1.00	1.00			1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3539	1583	1770	3539			1770	1583			
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (perm)		3539	1583	1770	3539			1770	1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1132	54	137	304	0	122	0	122	0	0	0
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	94	0	0	0
Lane Group Flow (vph)	0	1132	27	137	304	0	0	122	28	0	0	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2						3			
Actuated Green, G (s)		27.2	27.2	5.1	36.3			11.0	11.0			
Effective Green, g (s)		30.2	28.2	7.1	39.3			13.0	13.0			
Actuated g/C Ratio		0.53	0.49	0.12	0.69			0.23	0.23			
Clearance Time (s)		5.7	5.7	4.0	5.7			4.0	4.0			
Vehicle Extension (s)		3.8	3.8	2.0	3.7			2.0	2.0			
Lane Grp Cap (vph)		1875	783	220	2440			404	361			
v/s Ratio Prot		c0.32		c0.08	0.09			c0.07				
v/s Ratio Perm			0.02						0.02			
v/c Ratio		0.60	0.03	0.62	0.12			0.30	0.08			
Uniform Delay, d1		9.3	7.4	23.7	3.0			18.2	17.3			
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.6	0.0	3.9	0.0			0.2	0.0			
Delay (s)		9.9	7.4	27.6	3.0			18.4	17.3			
Level of Service		A	A	C	A			B	B			
Approach Delay (s)		9.8			10.7			17.9			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	6.7
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



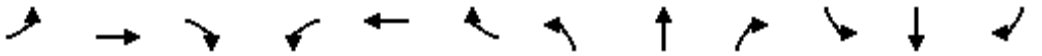
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1027	18	64	390	3	37	9	130	44	14	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3530		1770	3535			1790	1583		1795	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78	1.00		0.79	1.00
Satd. Flow (perm)	1770	3530		1770	3535			1451	1583		1470	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	1081	19	67	411	3	39	9	137	46	15	17
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	110	0	0	14
Lane Group Flow (vph)	11	1099	0	67	414	0	0	48	27	0	61	3
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	0.9	26.0		2.6	27.7			9.0	9.0		9.0	9.0
Effective Green, g (s)	1.9	28.7		3.6	30.4			10.0	10.0		10.0	10.0
Actuated g/C Ratio	0.04	0.56		0.07	0.59			0.19	0.19		0.19	0.19
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	66	1975		124	2095			283	309		287	309
v/s Ratio Prot	0.01	c0.31		c0.04	0.12							
v/s Ratio Perm								0.03	0.02		c0.04	0.00
v/c Ratio	0.17	0.56		0.54	0.20			0.17	0.09		0.21	0.01
Uniform Delay, d1	23.9	7.2		23.1	4.8			17.2	16.9		17.3	16.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.4		2.6	0.1			0.1	0.0		0.1	0.0
Delay (s)	24.4	7.6		25.6	4.9			17.3	17.0		17.5	16.7
Level of Service	C	A		C	A			B	B		B	B
Approach Delay (s)		7.8			7.8			17.0			17.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	51.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



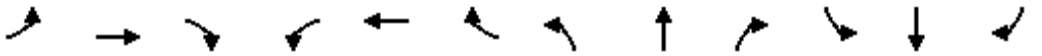
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	764	8	15	296	122	9	0	20	71	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.96			0.91		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	3534		1770	3385			1662		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (perm)	1770	3534		1770	3385			1662		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	200	804	8	16	312	128	9	0	21	75	0	35
RTOR Reduction (vph)	0	0	0	0	42	0	0	20	0	0	31	0
Lane Group Flow (vph)	200	812	0	16	398	0	0	10	0	75	4	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	11.5	31.4		0.9	20.8			2.3		6.0	6.0	
Effective Green, g (s)	12.5	34.1		1.9	23.5			3.3		7.0	7.0	
Actuated g/C Ratio	0.21	0.58		0.03	0.40			0.06		0.12	0.12	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	380	2067		58	1364			94		213	190	
v/s Ratio Prot	c0.11	c0.23		0.01	0.12			c0.01		c0.04	0.00	
v/s Ratio Perm												
v/c Ratio	0.53	0.39		0.28	0.29			0.11		0.35	0.02	
Uniform Delay, d1	20.3	6.5		27.5	11.8			26.1		23.6	22.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.2		0.9	0.2			0.4		0.4	0.0	
Delay (s)	20.9	6.7		28.5	11.9			26.5		23.9	22.6	
Level of Service	C	A		C	B			C		C	C	
Approach Delay (s)		9.5			12.5			26.5			23.5	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



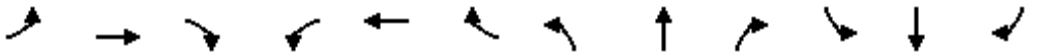
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1	9	103	3	44	22	994	118	6	925	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	1	9	108	3	46	23	1046	124	6	974	17
RTOR Reduction (vph)	0	0	8	0	0	38	0	0	66	0	0	9
Lane Group Flow (vph)	6	1	1	108	3	8	23	1046	58	6	974	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	3.5	3.5	7.2	10.3	10.3	0.5	27.2	27.2	0.4	27.1	27.1
Effective Green, g (s)	0.4	3.5	3.5	7.2	10.3	10.3	0.5	27.2	27.2	0.4	27.1	27.1
Actuated g/C Ratio	0.01	0.06	0.06	0.12	0.18	0.18	0.01	0.47	0.47	0.01	0.46	0.46
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	12	112	95	219	329	280	15	2372	739	12	2364	736
v/s Ratio Prot	0.00	0.00		c0.06	0.00		c0.01	c0.21		0.00	0.19	
v/s Ratio Perm			0.00			c0.01			0.04			0.00
v/c Ratio	0.50	0.01	0.01	0.49	0.01	0.03	1.53	0.44	0.08	0.50	0.41	0.01
Uniform Delay, d1	28.9	25.8	25.8	23.8	19.8	19.9	28.9	10.4	8.6	28.9	10.3	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.2	0.0	0.0	1.7	0.0	0.0	431.8	0.1	0.0	29.2	0.1	0.0
Delay (s)	58.1	25.8	25.8	25.6	19.8	19.9	460.7	10.6	8.7	58.1	10.4	8.4
Level of Service	E	C	C	C	B	B	F	B	A	E	B	A
Approach Delay (s)		37.9			23.8			19.1			10.7	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



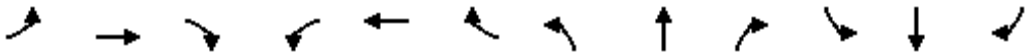
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	32	67	261	7	30	22	1082	128	15	1015	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	34	71	275	7	32	23	1139	135	16	1068	7
RTOR Reduction (vph)	0	0	62	0	0	22	0	0	83	0	0	4
Lane Group Flow (vph)	22	34	9	275	7	10	23	1139	52	16	1068	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.3	8.6	8.6	15.2	22.5	22.5	1.3	27.0	27.0	0.5	26.2	26.2
Effective Green, g (s)	1.3	8.6	8.6	15.2	22.5	22.5	1.3	27.0	27.0	0.5	26.2	26.2
Actuated g/C Ratio	0.02	0.12	0.12	0.21	0.32	0.32	0.02	0.38	0.38	0.01	0.37	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	32	225	191	377	588	500	32	1926	599	12	1869	582
v/s Ratio Prot	0.01	c0.02		c0.16	0.00		c0.01	c0.22		0.01	0.21	
v/s Ratio Perm			0.01			0.01			0.03			0.00
v/c Ratio	0.69	0.15	0.04	0.73	0.01	0.02	0.72	0.59	0.09	1.33	0.57	0.00
Uniform Delay, d1	34.8	28.1	27.7	26.1	16.8	16.8	34.8	17.7	14.2	35.4	18.1	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.1	0.3	0.1	6.9	0.0	0.0	55.4	0.5	0.1	384.2	0.4	0.0
Delay (s)	81.9	28.4	27.8	33.1	16.8	16.8	90.2	18.2	14.3	419.6	18.5	14.3
Level of Service	F	C	C	C	B	B	F	B	B	F	B	B
Approach Delay (s)		37.3			31.0			19.1			24.3	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	9	101	114	4	15	29	1138	39	52	1340	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	9	106	120	4	16	31	1198	41	55	1411	16
RTOR Reduction (vph)	0	0	94	0	0	14	0	0	23	0	0	8
Lane Group Flow (vph)	58	9	12	120	4	2	31	1198	18	55	1411	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.3	8.1	8.1	6.9	8.7	8.7	1.4	29.6	29.6	3.8	32.0	32.0
Effective Green, g (s)	6.3	8.1	8.1	6.9	8.7	8.7	1.4	29.6	29.6	3.8	32.0	32.0
Actuated g/C Ratio	0.09	0.12	0.12	0.10	0.13	0.13	0.02	0.43	0.43	0.06	0.47	0.47
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	162	220	187	178	236	200	36	2191	682	98	2369	737
v/s Ratio Prot	0.03	0.00		c0.07	0.00		0.02	0.24		c0.03	c0.28	
v/s Ratio Perm			c0.01			0.00			0.01			0.01
v/c Ratio	0.36	0.04	0.07	0.67	0.02	0.01	0.86	0.55	0.03	0.56	0.60	0.01
Uniform Delay, d1	29.3	26.9	26.9	29.8	26.3	26.2	33.6	14.6	11.3	31.6	13.6	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1	0.2	9.7	0.0	0.0	95.3	0.3	0.0	7.2	0.4	0.0
Delay (s)	30.7	26.9	27.1	39.5	26.3	26.3	128.8	14.8	11.3	38.8	14.0	9.9
Level of Service	C	C	C	D	C	C	F	B	B	D	B	A
Approach Delay (s)		28.3			37.6			17.5			14.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	47	76	19	67	5	28	52	19	7	99	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1549	1770	1842		1770	1778		1770	1726	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1549	1770	1842		1770	1778		1770	1726	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	49	80	20	71	5	29	55	20	7	104	79
RTOR Reduction (vph)	0	0	63	0	3	0	0	15	0	0	33	0
Lane Group Flow (vph)	68	49	17	20	73	0	29	60	0	7	150	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	2.4	7.7	7.7	0.7	6.0		0.8	9.9		0.5	9.6	
Effective Green, g (s)	2.4	7.7	7.7	0.7	6.0		0.8	9.9		0.5	9.6	
Actuated g/C Ratio	0.07	0.21	0.21	0.02	0.16		0.02	0.27		0.01	0.26	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	115	390	324	34	300		38	478		24	450	
v/s Ratio Prot	c0.04	0.03		0.01	c0.04		c0.02	0.03		0.00	c0.09	
v/s Ratio Perm			0.01									
v/c Ratio	0.59	0.13	0.05	0.59	0.24		0.76	0.13		0.29	0.33	
Uniform Delay, d1	16.7	11.8	11.6	17.9	13.4		17.9	10.2		18.0	11.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.9	0.1	0.1	23.4	0.4		60.7	0.1		6.7	0.4	
Delay (s)	24.6	12.0	11.7	41.3	13.8		78.6	10.3		24.6	11.4	
Level of Service	C	B	B	D	B		E	B		C	B	
Approach Delay (s)		16.2			19.6			29.3			11.9	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	36.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		

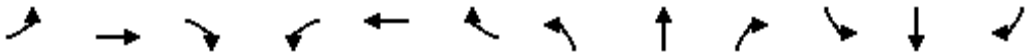
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	27	461	657	22	72	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	28	485	692	23	76	349
RTOR Reduction (vph)	0	233	0	13	0	0
Lane Group Flow (vph)	28	252	692	10	76	349
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	13.6	13.6	27.6	27.6	4.3	36.9
Effective Green, g (s)	13.6	13.6	27.6	27.6	4.3	36.9
Actuated g/C Ratio	0.22	0.22	0.46	0.46	0.07	0.61
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	398	356	850	722	126	1136
v/s Ratio Prot	0.02		c0.37		c0.04	0.19
v/s Ratio Perm		c0.16		0.01		
v/c Ratio	0.07	0.71	0.81	0.01	0.60	0.31
Uniform Delay, d1	18.5	21.6	14.2	9.0	27.3	5.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	6.3	6.0	0.0	7.9	0.2
Delay (s)	18.5	27.9	20.3	9.0	35.2	5.8
Level of Service	B	C	C	A	D	A
Approach Delay (s)	27.4		19.9			11.1
Approach LOS	C		B			B

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	6	2	615	17	5	527
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.41	1.00
Satd. Flow (perm)	1770	1583	1863	1583	758	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	2	647	18	5	555
RTOR Reduction (vph)	0	2	0	8	0	0
Lane Group Flow (vph)	6	0	647	10	5	555
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	0.6	0.6	13.2	13.2	13.2	13.2
Effective Green, g (s)	0.6	0.6	13.2	13.2	13.2	13.2
Actuated g/C Ratio	0.03	0.03	0.58	0.58	0.58	0.58
Clearance Time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	42	1079	916	439	1079
v/s Ratio Prot	c0.00		c0.35			0.30
v/s Ratio Perm		0.00		0.01	0.01	
v/c Ratio	0.13	0.00	0.60	0.01	0.01	0.51
Uniform Delay, d1	10.8	10.8	3.1	2.0	2.0	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0	0.9	0.0	0.0	0.4
Delay (s)	12.1	10.8	4.0	2.0	2.0	3.3
Level of Service	B	B	A	A	A	A
Approach Delay (s)	11.8		3.9			3.3
Approach LOS	B		A			A

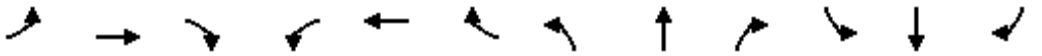
Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	22.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	467	16	39	203	7	19	3	14	11	8	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1549	1770	3539	1549	1770	1613		1770	1722	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1549	1770	3539	1549	1770	1613		1770	1722	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	492	17	41	214	7	20	3	15	12	8	7
RTOR Reduction (vph)	0	0	10	0	0	4	0	14	0	0	7	0
Lane Group Flow (vph)	5	492	7	41	214	3	20	4	0	12	8	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	0.3	12.3	12.3	0.5	12.5	12.5	0.4	2.2		0.3	2.1	
Effective Green, g (s)	0.3	12.3	12.3	0.5	12.5	12.5	0.4	2.2		0.3	2.1	
Actuated g/C Ratio	0.01	0.39	0.39	0.02	0.40	0.40	0.01	0.07		0.01	0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	17	1391	609	28	1413	619	23	113		17	116	
v/s Ratio Prot	0.00	c0.14		c0.02	0.06		c0.01	0.00		0.01	c0.00	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.29	0.35	0.01	1.46	0.15	0.00	0.87	0.04		0.71	0.07	
Uniform Delay, d1	15.4	6.7	5.8	15.4	6.0	5.7	15.4	13.6		15.5	13.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.4	0.2	0.0	335.3	0.1	0.0	127.6	0.1		84.0	0.3	
Delay (s)	24.8	6.9	5.8	350.7	6.1	5.7	143.0	13.7		99.4	14.0	
Level of Service	C	A	A	F	A	A	F	B		F	B	
Approach Delay (s)		7.0			60.0			81.7			51.9	
Approach LOS		A			E			F			D	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	31.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

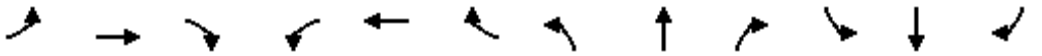


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	9	6	116	10	39	3	511	274	104	341	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	9	6	122	11	41	3	538	288	109	359	13
RTOR Reduction (vph)	0	0	6	0	0	35	0	0	180	0	0	7
Lane Group Flow (vph)	6	9	0	122	11	6	3	538	108	109	359	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	3.9	3.9	5.8	8.9	8.9	0.8	21.2	21.2	5.7	26.1	26.1
Effective Green, g (s)	0.8	3.9	3.9	5.8	8.9	8.9	0.8	21.2	21.2	5.7	26.1	26.1
Actuated g/C Ratio	0.01	0.07	0.07	0.10	0.16	0.16	0.01	0.37	0.37	0.10	0.46	0.46
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	49	128	109	352	293	249	49	1905	593	346	2345	730
v/s Ratio Prot	0.00	c0.00		c0.04	c0.01		0.00	c0.11		c0.03	c0.07	
v/s Ratio Perm			0.00			0.00			0.07			0.00
v/c Ratio	0.12	0.07	0.00	0.35	0.04	0.03	0.06	0.28	0.18	0.32	0.15	0.01
Uniform Delay, d1	27.6	24.7	24.5	23.6	20.2	20.2	27.5	12.4	11.9	23.6	8.8	8.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.2	0.0	0.6	0.1	0.0	0.5	0.1	0.1	0.5	0.0	0.0
Delay (s)	28.7	24.9	24.6	24.2	20.3	20.2	28.1	12.5	12.0	24.2	8.9	8.3
Level of Service	C	C	C	C	C	C	C	B	B	C	A	A
Approach Delay (s)		25.9			23.0			12.4			12.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	56.6	Sum of lost time (s)	30.0
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

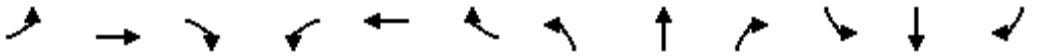
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	347	10	12	136	14	15	14	21	5	8	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	365	11	13	143	15	16	15	22	5	8	4
RTOR Reduction (vph)	0	0	8	0	0	11	0	0	20	0	0	3
Lane Group Flow (vph)	9	365	3	13	143	4	16	15	2	5	8	1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.6	11.5	11.5	0.7	11.6	11.6	3.2	3.2	3.2	8.2	8.2	8.2
Effective Green, g (s)	0.6	11.5	11.5	0.7	11.6	11.6	3.2	3.2	3.2	8.2	8.2	8.2
Actuated g/C Ratio	0.01	0.26	0.26	0.02	0.27	0.27	0.07	0.07	0.07	0.19	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	24	933	417	28	941	421	129	136	116	332	350	297
v/s Ratio Prot	0.01	c0.10		c0.01	0.04		c0.01	0.01		0.00	c0.00	
v/s Ratio Perm			0.00			0.00			0.00			0.00
v/c Ratio	0.38	0.39	0.01	0.46	0.15	0.01	0.12	0.11	0.01	0.02	0.02	0.00
Uniform Delay, d1	21.3	13.2	11.8	21.3	12.2	11.8	18.9	18.9	18.7	14.4	14.4	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.6	0.3	0.0	11.7	0.1	0.0	0.4	0.4	0.0	0.0	0.0	0.0
Delay (s)	30.9	13.4	11.8	33.0	12.3	11.8	19.3	19.2	18.8	14.4	14.5	14.4
Level of Service	C	B	B	C	B	B	B	B	B	B	B	B
Approach Delay (s)		13.8			13.8			19.1			14.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



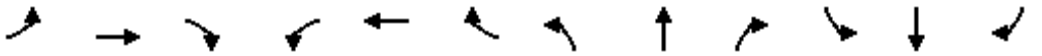
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	10	20	16	10	44	30	644	10	79	530	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	11	21	17	11	46	32	678	11	83	558	32
RTOR Reduction (vph)	0	0	19	0	0	42	0	0	6	0	0	17
Lane Group Flow (vph)	32	11	2	17	11	4	32	678	5	83	558	15
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.2	6.3	6.3	1.0	5.1	5.1	2.2	23.5	23.5	4.5	25.8	25.8
Effective Green, g (s)	2.2	6.3	6.3	1.0	5.1	5.1	2.2	23.5	23.5	4.5	25.8	25.8
Actuated g/C Ratio	0.04	0.11	0.11	0.02	0.09	0.09	0.04	0.42	0.42	0.08	0.47	0.47
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	70	212	180	32	172	146	70	2161	673	144	2372	739
v/s Ratio Prot	c0.02	c0.01		0.01	0.01		0.02	c0.13		c0.05	0.11	
v/s Ratio Perm			0.00			0.00			0.00			0.01
v/c Ratio	0.46	0.05	0.01	0.53	0.06	0.03	0.46	0.31	0.01	0.58	0.24	0.02
Uniform Delay, d1	26.0	21.8	21.7	26.9	22.9	22.8	26.0	10.5	9.2	24.5	8.8	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	0.1	0.0	15.9	0.2	0.1	4.7	0.1	0.0	5.5	0.1	0.0
Delay (s)	30.6	21.9	21.8	42.8	23.1	22.9	30.6	10.6	9.2	30.0	8.9	8.0
Level of Service	C	C	C	D	C	C	C	B	A	C	A	A
Approach Delay (s)		26.2			27.5			11.5			11.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	55.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



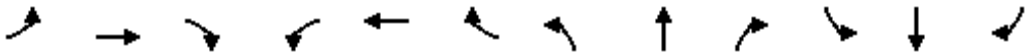
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	121	22	173	34	7	15	6	314	15	7	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	127	23	182	36	7	16	6	331	16	7	26
RTOR Reduction (vph)	0	0	18	0	0	4	0	0	266	0	0	21
Lane Group Flow (vph)	20	127	5	182	36	3	16	6	65	16	7	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	10.4	10.4	7.8	17.4	17.4	0.8	9.5	9.5	0.8	9.5	9.5
Effective Green, g (s)	0.8	10.4	10.4	7.8	17.4	17.4	0.8	9.5	9.5	0.8	9.5	9.5
Actuated g/C Ratio	0.02	0.21	0.21	0.16	0.36	0.36	0.02	0.20	0.20	0.02	0.20	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	29	759	339	285	1270	568	29	365	310	29	365	310
v/s Ratio Prot	0.01	c0.04		c0.10	0.01		c0.01	0.00		0.01	0.00	
v/s Ratio Perm			0.00			0.00			c0.04			0.00
v/c Ratio	0.69	0.17	0.01	0.64	0.03	0.00	0.55	0.02	0.21	0.55	0.02	0.02
Uniform Delay, d1	23.7	15.5	15.0	19.0	10.1	10.0	23.7	15.7	16.4	23.7	15.7	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	51.3	0.1	0.0	4.6	0.0	0.0	20.8	0.0	0.3	20.8	0.0	0.0
Delay (s)	75.0	15.6	15.0	23.7	10.1	10.0	44.4	15.7	16.7	44.4	15.8	15.8
Level of Service	E	B	B	C	B	A	D	B	B	D	B	B
Approach Delay (s)		22.5			21.1			17.9			25.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	25	200	200	6	0	66	736	268	0	528	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00	0.97	1.00		0.97	0.91	1.00		0.91	
Frt		1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1863	1583	3433	1863		3433	5085	1583		5085	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (perm)		1863	1583	3433	1863		3433	5085	1583		5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	26	211	211	6	0	69	775	282	0	556	0
RTOR Reduction (vph)	0	0	180	0	0	0	0	0	164	0	0	0
Lane Group Flow (vph)	0	26	31	211	6	0	69	775	118	0	556	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		8.2	8.2	8.8	22.0		3.8	23.0	23.0		14.2	
Effective Green, g (s)		8.2	8.2	8.8	22.0		3.8	23.0	23.0		14.2	
Actuated g/C Ratio		0.15	0.15	0.16	0.40		0.07	0.42	0.42		0.26	
Clearance Time (s)		5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		278	236	549	745		237	2126	662		1313	
v/s Ratio Prot		0.01		c0.06	0.00		0.02	c0.15			0.11	
v/s Ratio Perm			c0.02						0.07			
v/c Ratio		0.09	0.13	0.38	0.01		0.29	0.36	0.18		0.42	
Uniform Delay, d1		20.2	20.3	20.7	9.9		24.3	11.0	10.1		17.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.1	0.3	0.4	0.0		0.7	0.1	0.1		0.2	
Delay (s)		20.3	20.6	21.1	9.9		25.0	11.1	10.2		17.2	
Level of Service		C	C	C	A		C	B	B		B	
Approach Delay (s)		20.5			20.8			11.7			17.2	
Approach LOS		C			C			B			B	

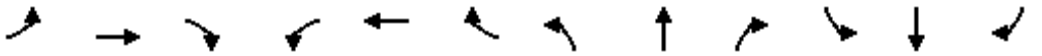
Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	212	0	11	803	9	0	0	3	2	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.86		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1770	3533			1590		1770	1562	
Flt Permitted	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539		1770	3533			1590		1770	1562	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	223	0	12	845	9	0	0	3	2	0	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	11	0
Lane Group Flow (vph)	20	223	0	12	854	0	0	0	0	2	0	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Perm			Split		
Protected Phases	7	4		3	8			2		6	6	
Permitted Phases							2					
Actuated Green, G (s)	0.3	22.1		0.3	22.1			1.7		1.7	1.7	
Effective Green, g (s)	0.3	22.1		0.3	22.1			1.7		1.7	1.7	
Actuated g/C Ratio	0.01	0.53		0.01	0.53			0.04		0.04	0.04	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	13	1871		13	1868			65		72	64	
v/s Ratio Prot	c0.01	0.06		0.01	c0.24			c0.00		c0.00	0.00	
v/s Ratio Perm												
v/c Ratio	1.54	0.12		0.92	0.46			0.00		0.03	0.01	
Uniform Delay, d1	20.8	5.0		20.7	6.1			19.2		19.3	19.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	453.6	0.0		207.3	0.2			0.0		0.2	0.0	
Delay (s)	474.4	5.0		228.0	6.3			19.2		19.4	19.3	
Level of Service	F	A		F	A			B		B	B	
Approach Delay (s)		43.6			9.4			19.2			19.3	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	41.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		

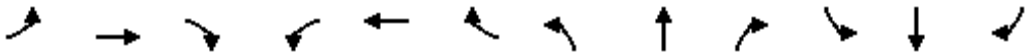
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	5	40	45	7	69	60	120	16	16	72	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1549	1770	1863	1549	1770	1863	1549	1770	1863	1549
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1549	1770	1863	1549	1770	1863	1549	1770	1863	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	5	42	47	7	73	63	126	17	17	76	103
RTOR Reduction (vph)	0	0	35	0	0	62	0	0	12	0	0	75
Lane Group Flow (vph)	76	5	7	47	7	11	63	126	5	17	76	28
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.4	6.1	6.1	1.4	5.1	5.1	1.9	11.0	11.0	0.4	9.5	9.5
Effective Green, g (s)	2.4	6.1	6.1	1.4	5.1	5.1	1.9	11.0	11.0	0.4	9.5	9.5
Actuated g/C Ratio	0.07	0.17	0.17	0.04	0.15	0.15	0.05	0.32	0.32	0.01	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	326	271	71	272	226	96	587	488	20	507	422
v/s Ratio Prot	c0.04	0.00		0.03	0.00		c0.04	c0.07		0.01	0.04	
v/s Ratio Perm			0.00			c0.01			0.00			0.02
v/c Ratio	0.62	0.02	0.03	0.66	0.03	0.05	0.66	0.21	0.01	0.85	0.15	0.07
Uniform Delay, d1	15.8	11.9	11.9	16.5	12.8	12.8	16.2	8.8	8.2	17.2	9.6	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.5	0.0	0.0	20.8	0.0	0.1	15.0	0.2	0.0	129.8	0.1	0.1
Delay (s)	25.3	11.9	12.0	37.3	12.8	12.9	31.2	9.0	8.2	147.0	9.8	9.5
Level of Service	C	B	B	D	B	B	C	A	A	F	A	A
Approach Delay (s)		20.2			21.9			15.7			21.5	
Approach LOS		C			C			B			C	

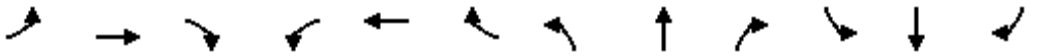
Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	34.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



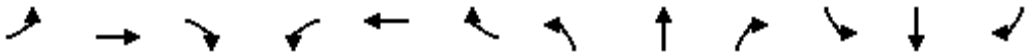
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	60	29	145	24	17	54	718	273	28	220	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0		3.0	4.3	4.3	3.0	3.2	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1857	1583		1771		1770	1863	1583	1770	3530	
Flt Permitted		1.00	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1857	1583		1771		1770	1863	1583	1770	3530	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	63	31	153	25	18	57	756	287	29	232	4
RTOR Reduction (vph)	0	0	28	0	5	0	0	0	137	0	1	0
Lane Group Flow (vph)	0	67	3	0	191	0	57	756	150	29	235	0
Turn Type	Split		Perm	Split			Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			
Actuated Green, G (s)		6.4	6.4		15.3		3.4	37.0	37.0	2.0	36.7	
Effective Green, g (s)		7.4	7.4		16.3		4.4	38.0	38.0	3.0	37.7	
Actuated g/C Ratio		0.09	0.09		0.21		0.06	0.49	0.49	0.04	0.48	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.3	5.3	4.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		176	150		370		100	908	771	68	1706	
v/s Ratio Prot		c0.04			c0.11		c0.03	c0.41		0.02	0.07	
v/s Ratio Perm			0.00						0.09			
v/c Ratio		0.38	0.02		0.52		0.57	0.83	0.19	0.43	0.14	
Uniform Delay, d1		33.1	32.0		27.4		35.9	17.3	11.3	36.7	11.2	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.0		0.5		4.4	6.3	0.0	1.6	0.0	
Delay (s)		33.7	32.0		27.9		40.3	23.6	11.4	38.2	11.2	
Level of Service		C	C		C		D	C	B	D	B	
Approach Delay (s)		33.1			27.9			21.3			14.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	78.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



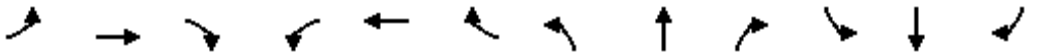
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	296	302	1	50	72	3	0	354	318	0	196	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	0.95	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1681	1761		1770	3519			1863	1583		1863	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1681	1761		1770	3519			1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	312	318	1	53	76	3	0	373	335	0	206	259
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	244	0	0	0
Lane Group Flow (vph)	281	350	0	53	76	0	0	373	91	0	206	259
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	17.0	17.0		5.9	5.9			17.8	17.8		9.8	69.1
Effective Green, g (s)	18.0	18.0		6.9	6.9			18.8	18.8		10.8	69.1
Actuated g/C Ratio	0.26	0.26		0.10	0.10			0.27	0.27		0.16	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			5.0	5.0		5.0	
Lane Grp Cap (vph)	438	459		177	351			507	431		291	1583
v/s Ratio Prot	0.17	c0.20		c0.03	0.02			c0.20			c0.11	
v/s Ratio Perm									0.06			0.16
v/c Ratio	0.64	0.76		0.30	0.22			0.74	0.21		0.71	0.16
Uniform Delay, d1	22.7	23.6		28.9	28.6			22.9	19.4		27.7	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.8	7.0		0.7	0.2			6.6	0.5		9.5	0.2
Delay (s)	25.5	30.6		29.6	28.8			29.5	19.9		37.2	0.2
Level of Service	C	C		C	C			C	B		D	A
Approach Delay (s)		28.3			29.1			25.0			16.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	14.6
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



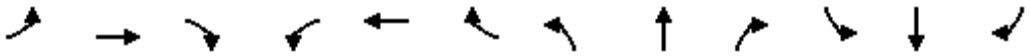
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	441	187	38	300	33	148	12	38	3	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00		0.99			0.96	1.00		0.99	
Satd. Flow (prot)		1860	1583		1831			1781	1583		1785	
Flt Permitted		0.99	1.00		0.94			0.72	1.00		0.97	
Satd. Flow (perm)		1842	1583		1723			1348	1583		1733	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	464	197	40	316	35	156	13	40	3	16	7
RTOR Reduction (vph)	0	0	79	0	5	0	0	0	30	0	5	0
Lane Group Flow (vph)	0	477	118	0	386	0	0	169	10	0	21	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		21.2	21.2		21.2			8.6	8.6		8.6	
Effective Green, g (s)		22.2	22.2		22.2			9.6	9.6		9.6	
Actuated g/C Ratio		0.58	0.58		0.58			0.25	0.25		0.25	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1076	925		1007			341	400		438	
v/s Ratio Prot												
v/s Ratio Perm		c0.26	0.07		0.22			c0.13	0.01		0.01	
v/c Ratio		0.44	0.13		0.38			0.50	0.03		0.05	
Uniform Delay, d1		4.4	3.5		4.2			12.1	10.7		10.7	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.2	0.0		0.2			0.4	0.0		0.0	
Delay (s)		4.7	3.6		4.4			12.5	10.7		10.8	
Level of Service		A	A		A			B	B		B	
Approach Delay (s)		4.4			4.4			12.2			10.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	38.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



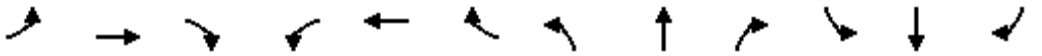
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	545	11	34	419	117	14	40	45	39	27	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.2		3.2	3.2		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.97		1.00	0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	1857		1770	1802		1770	1715			1809	1583
Flt Permitted	0.40	1.00		0.38	1.00		0.71	1.00			0.79	1.00
Satd. Flow (perm)	738	1857		711	1802		1326	1715			1479	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	574	12	36	441	123	15	42	47	41	28	28
RTOR Reduction (vph)	0	1	0	0	14	0	0	38	0	0	0	23
Lane Group Flow (vph)	100	585	0	36	550	0	15	51	0	0	69	5
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		4
Actuated Green, G (s)	23.2	23.2		23.2	23.2		6.4	6.4			6.4	6.4
Effective Green, g (s)	24.2	24.2		24.2	24.2		7.4	7.4			7.4	7.4
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.20	0.20			0.20	0.20
Clearance Time (s)	4.2	4.2		4.2	4.2		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	472	1189		455	1154		260	336			290	310
v/s Ratio Prot		c0.31			0.31			0.03				
v/s Ratio Perm	0.14			0.05			0.01				c0.05	0.00
v/c Ratio	0.21	0.49		0.08	0.48		0.06	0.15			0.24	0.02
Uniform Delay, d1	2.8	3.6		2.6	3.5		12.4	12.6			12.8	12.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.2	0.2		0.1	0.2		0.0	0.1			0.2	0.0
Delay (s)	3.0	3.8		2.6	3.7		12.4	12.7			13.0	12.3
Level of Service	A	A		A	A		B	B			B	B
Approach Delay (s)		3.7			3.7			12.6			12.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	37.8	Sum of lost time (s)	6.2
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



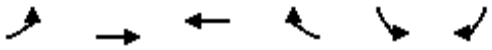
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	343	27	180	338	8	44	57	460	13	22	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0	3.0		3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.99	
Satd. Flow (prot)	1770	1843		1770	1857			1823	1583		1738	
Flt Permitted	0.95	1.00		0.95	1.00			0.86	1.00		0.93	
Satd. Flow (perm)	1770	1843		1770	1857			1600	1583		1635	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	361	28	189	356	8	46	60	484	14	23	27
RTOR Reduction (vph)	0	5	0	0	2	0	0	0	368	0	21	0
Lane Group Flow (vph)	78	384	0	189	362	0	0	106	116	0	43	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		
Actuated Green, G (s)	2.6	14.5		5.7	17.6			8.0	8.0		8.0	
Effective Green, g (s)	3.6	15.5		6.7	18.6			9.0	9.0		9.0	
Actuated g/C Ratio	0.09	0.38		0.17	0.46			0.22	0.22		0.22	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0	4.0		4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)	158	707		294	855			356	353		364	
v/s Ratio Prot	0.04	c0.21		c0.11	0.20							
v/s Ratio Perm								0.07	c0.07		0.03	
v/c Ratio	0.49	0.54		0.64	0.42			0.30	0.33		0.12	
Uniform Delay, d1	17.5	9.7		15.7	7.3			13.1	13.2		12.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.9	0.7		3.6	0.3			0.2	0.2		0.1	
Delay (s)	18.4	10.4		19.3	7.6			13.2	13.4		12.6	
Level of Service	B	B		B	A			B	B		B	
Approach Delay (s)		11.7			11.6			13.3			12.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	40.4	Sum of lost time (s)	9.2
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	90	399	91	63	4	247	736	20	29	883	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.6	3.9	3.0	1.6	2.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	95	420	96	66	4	260	775	21	31	929	31
RTOR Reduction (vph)	0	0	339	0	0	3	0	0	12	0	0	19
Lane Group Flow (vph)	95	95	81	96	66	1	260	775	9	31	929	12
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	15.3	15.3	15.3	10.4	10.4	10.4	11.4	36.7	36.7	5.6	32.9	32.9
Effective Green, g (s)	16.3	16.3	16.3	11.4	11.4	11.4	12.4	39.0	37.7	6.6	35.2	33.9
Actuated g/C Ratio	0.19	0.19	0.19	0.13	0.13	0.13	0.15	0.46	0.44	0.08	0.41	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.9	4.9	4.0	3.9	3.9
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	340	358	304	238	250	213	501	1626	703	138	1467	632
v/s Ratio Prot	c0.05	0.05		c0.05	0.04		c0.08	0.22		0.02	c0.26	
v/s Ratio Perm			0.05			0.00			0.01			0.01
v/c Ratio	0.28	0.27	0.27	0.40	0.26	0.00	0.52	0.48	0.01	0.22	0.63	0.02
Uniform Delay, d1	29.3	29.2	29.2	33.6	33.0	31.8	33.5	15.9	13.2	36.7	19.7	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.2	0.4	0.2	0.0	0.4	0.3	0.0	0.3	1.0	0.0
Delay (s)	29.4	29.3	29.4	34.0	33.2	31.8	33.9	16.2	13.2	37.1	20.7	15.5
Level of Service	C	C	C	C	C	C	C	B	B	D	C	B
Approach Delay (s)		29.4			33.7			20.5			21.1	
Approach LOS		C			C			C			C	

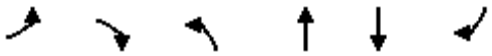
Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	9.6
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	354	402	310	203	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	3539	1863	1547	3438	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1770	3539	1863	1547	3438	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	373	423	326	214	2
RTOR Reduction (vph)	0	0	0	184	2	0
Lane Group Flow (vph)	1	373	423	142	214	0
Confl. Peds. (#/hr)				4		4
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	0.4	19.6	15.2	15.2	7.3	
Effective Green, g (s)	0.4	19.6	15.2	15.2	7.3	
Actuated g/C Ratio	0.01	0.56	0.44	0.44	0.21	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	20	1988	811	674	719	
v/s Ratio Prot	0.00	c0.11	c0.23		c0.06	
v/s Ratio Perm				0.09		
v/c Ratio	0.05	0.19	0.52	0.21	0.30	
Uniform Delay, d1	17.1	3.7	7.2	6.1	11.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.0	0.6	0.2	0.2	
Delay (s)	18.1	3.8	7.8	6.3	11.9	
Level of Service	B	A	A	A	B	
Approach Delay (s)		3.8	7.1		11.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	34.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

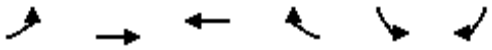
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	443	648	323	22	1	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.96	1.00	1.00
Satd. Flow (prot)	1770	1546	1681	1695	1863	1561
Flt Permitted	0.95	1.00	0.95	0.59	1.00	1.00
Satd. Flow (perm)	1770	1546	1681	1044	1863	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	466	682	340	23	1	23
RTOR Reduction (vph)	0	406	0	0	0	21
Lane Group Flow (vph)	466	276	180	183	1	2
Confl. Peds. (#/hr)		2				2
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	21.7	21.7	14.1	23.9	5.8	5.8
Effective Green, g (s)	21.7	21.7	14.1	23.9	5.8	5.8
Actuated g/C Ratio	0.40	0.40	0.26	0.45	0.11	0.11
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	717	626	442	637	202	169
v/s Ratio Prot			c0.11	0.08	0.00	
v/s Ratio Perm	c0.26	0.18		c0.05		0.00
v/c Ratio	0.65	0.44	0.41	0.29	0.00	0.01
Uniform Delay, d1	12.9	11.6	16.3	9.4	21.3	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.5	0.6	0.3	0.0	0.0
Delay (s)	14.9	12.1	16.9	9.7	21.3	21.4
Level of Service	B	B	B	A	C	C
Approach Delay (s)	13.2			13.3	21.4	
Approach LOS	B			B	C	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

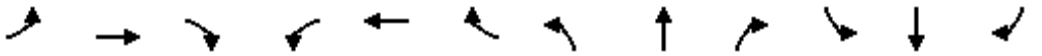
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	66	202	421	99	37	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1548	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1548	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	213	443	104	39	25
RTOR Reduction (vph)	0	0	0	81	0	13
Lane Group Flow (vph)	69	213	443	23	39	12
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.2	18.0	10.8	10.8	22.8	22.8
Effective Green, g (s)	3.2	18.0	10.8	10.8	22.8	22.8
Actuated g/C Ratio	0.07	0.37	0.22	0.22	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	116	1876	1125	343	827	730
v/s Ratio Prot	c0.04	0.04	c0.09		c0.02	
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.59	0.11	0.39	0.07	0.05	0.02
Uniform Delay, d1	22.2	10.1	16.2	15.0	7.1	7.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9	0.0	0.2	0.1	0.1	0.0
Delay (s)	30.1	10.2	16.4	15.1	7.2	7.0
Level of Service	C	B	B	B	A	A
Approach Delay (s)		15.1	16.2		7.1	
Approach LOS		B	B		A	

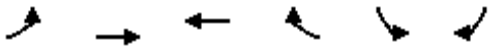
Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	156	15	773	406	408	39	971	287	220	840	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.91	0.88	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	1770	5085	2787	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	164	16	814	427	429	41	1022	302	232	884	101
RTOR Reduction (vph)	0	0	14	0	0	194	0	0	207	0	0	61
Lane Group Flow (vph)	77	164	2	814	427	235	41	1022	95	232	884	40
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.2	12.3	12.3	23.3	28.4	28.4	4.7	29.1	29.1	12.2	36.6	36.6
Effective Green, g (s)	7.2	12.3	12.3	23.3	28.4	28.4	4.7	29.1	29.1	12.2	36.6	36.6
Actuated g/C Ratio	0.08	0.13	0.13	0.25	0.31	0.31	0.05	0.31	0.31	0.13	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	137	673	210	861	1555	484	90	1593	873	232	2003	624
v/s Ratio Prot	0.04	0.03		c0.24	0.08		0.02	c0.20		c0.13	0.17	
v/s Ratio Perm			0.00			c0.15			0.03			0.03
v/c Ratio	0.56	0.24	0.01	0.95	0.27	0.49	0.46	0.64	0.11	1.00	0.44	0.06
Uniform Delay, d1	41.3	36.1	35.0	34.2	24.4	26.3	42.9	27.4	22.7	40.4	20.7	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	0.2	0.0	18.6	0.1	0.8	3.6	0.9	0.1	59.1	0.2	0.0
Delay (s)	46.5	36.3	35.0	52.8	24.5	27.1	46.5	28.3	22.7	99.4	20.8	17.5
Level of Service	D	D	D	D	C	C	D	C	C	F	C	B
Approach Delay (s)		39.3			39.0			27.6			35.5	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	92.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	26	637	1396	24	118	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1547	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1547	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	671	1469	25	124	80
RTOR Reduction (vph)	0	0	0	15	0	50
Lane Group Flow (vph)	27	671	1469	10	124	30
Confl. Peds. (#/hr)				2		2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.4	27.3	21.9	21.9	21.2	21.2
Effective Green, g (s)	1.4	27.3	21.9	21.9	21.2	21.2
Actuated g/C Ratio	0.02	0.48	0.39	0.39	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	44	2457	1971	600	664	586
v/s Ratio Prot	c0.02	0.13	c0.29		c0.07	
v/s Ratio Perm				0.01		0.02
v/c Ratio	0.61	0.27	0.75	0.02	0.19	0.05
Uniform Delay, d1	27.3	8.7	14.9	10.7	11.9	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.8	0.1	1.6	0.0	0.6	0.2
Delay (s)	50.0	8.8	16.5	10.7	12.5	11.4
Level of Service	D	A	B	B	B	B
Approach Delay (s)		10.3	16.4		12.1	
Approach LOS		B	B		B	

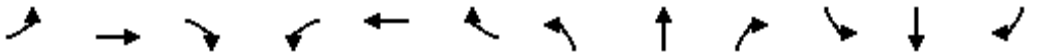
Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	744	11	19	1428	13	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1547	1770	5085	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1547	1770	5085	1770	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	783	12	20	1503	14	1
RTOR Reduction (vph)	0	7	0	0	0	1
Lane Group Flow (vph)	783	5	20	1503	14	0
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	24.1	24.1	0.7	28.8	22.1	22.1
Effective Green, g (s)	24.1	24.1	0.7	28.8	22.1	22.1
Actuated g/C Ratio	0.41	0.41	0.01	0.49	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2081	633	21	2486	664	586
v/s Ratio Prot	0.15		0.01	c0.30	c0.01	
v/s Ratio Perm		0.00				0.00
v/c Ratio	0.38	0.01	0.95	0.60	0.02	0.00
Uniform Delay, d1	12.2	10.3	29.1	10.9	11.6	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	173.4	0.4	0.1	0.0
Delay (s)	12.3	10.3	202.5	11.3	11.6	11.5
Level of Service	B	B	F	B	B	B
Approach Delay (s)	12.2			13.8	11.6	
Approach LOS	B			B	B	

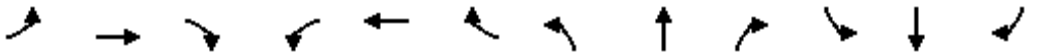
Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	580	63	129	1323	260	69	79	72	120	72	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	125	611	66	136	1393	274	73	83	76	126	76	76
RTOR Reduction (vph)	0	0	42	0	0	157	0	0	64	0	0	62
Lane Group Flow (vph)	125	611	24	136	1393	117	73	83	12	126	76	14
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.9	29.6	29.6	10.5	31.2	31.2	5.5	13.2	13.2	7.1	14.8	14.8
Effective Green, g (s)	8.9	29.6	29.6	10.5	31.2	31.2	5.5	13.2	13.2	7.1	14.8	14.8
Actuated g/C Ratio	0.11	0.37	0.37	0.13	0.39	0.39	0.07	0.16	0.16	0.09	0.18	0.18
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	196	1872	583	231	1973	614	121	306	260	156	343	291
v/s Ratio Prot	0.07	0.12		c0.08	c0.27		0.04	c0.04		c0.07	0.04	
v/s Ratio Perm			0.02			0.07			0.01			0.01
v/c Ratio	0.64	0.33	0.04	0.59	0.71	0.19	0.60	0.27	0.05	0.81	0.22	0.05
Uniform Delay, d1	34.2	18.2	16.3	32.9	20.7	16.3	36.4	29.4	28.3	36.0	27.9	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	0.1	0.0	3.8	1.2	0.2	8.2	0.5	0.1	25.5	0.3	0.1
Delay (s)	40.9	18.3	16.3	36.7	21.9	16.4	44.6	29.9	28.4	61.4	28.2	27.1
Level of Service	D	B	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		21.7			22.2			34.0			43.0	
Approach LOS		C			C			C			D	

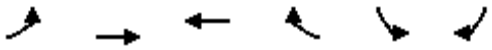
Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	141	570	34	501	1433	247	63	974	352	114	1079	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.0	3.0	3.0	5.0	3.0	2.6	5.0	3.0	2.6	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1552	3433	5085	1553	3433	3539	1557	3433	3539	1557
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1552	3433	5085	1553	3433	3539	1557	3433	3539	1557
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	148	600	36	527	1508	260	66	1025	371	120	1136	162
RTOR Reduction (vph)	0	0	29	0	0	158	0	0	237	0	0	91
Lane Group Flow (vph)	148	600	7	527	1508	102	66	1025	134	120	1136	71
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.4	18.3	18.3	25.1	34.0	34.0	7.2	33.8	33.8	9.0	35.6	35.6
Effective Green, g (s)	10.4	21.3	19.3	26.1	37.0	35.0	8.2	37.2	34.8	10.0	39.0	36.6
Actuated g/C Ratio	0.10	0.20	0.18	0.25	0.35	0.33	0.08	0.35	0.33	0.09	0.37	0.34
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1	4.1	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	336	1020	282	844	1772	512	265	1240	510	323	1300	537
v/s Ratio Prot	0.04	0.12		c0.15	c0.30		0.02	c0.29		0.03	c0.32	
v/s Ratio Perm			0.00			0.07			0.09			0.05
v/c Ratio	0.44	0.59	0.02	0.62	0.85	0.20	0.25	0.83	0.26	0.37	0.87	0.13
Uniform Delay, d1	45.2	38.5	35.7	35.7	32.0	25.6	46.1	31.6	26.3	45.2	31.3	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.1	0.0	1.0	4.3	0.3	0.2	5.2	0.5	0.3	7.3	0.2
Delay (s)	45.5	39.5	35.8	36.7	36.4	25.8	46.3	36.7	26.8	45.4	38.6	24.1
Level of Service	D	D	D	D	D	C	D	D	C	D	D	C
Approach Delay (s)		40.5			35.3			34.6			37.5	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	36.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	106.2	Sum of lost time (s)	5.6
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

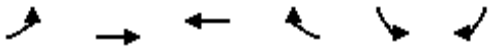


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	5	1026	2147	261	141	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1080	2260	275	148	4
RTOR Reduction (vph)	0	0	0	91	0	3
Lane Group Flow (vph)	5	1080	2260	184	148	1
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.0	49.1	44.1	44.1	13.8	13.8
Effective Green, g (s)	2.0	52.1	47.1	47.1	14.8	14.8
Actuated g/C Ratio	0.03	0.71	0.65	0.65	0.20	0.20
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	49	3634	3285	1023	359	321
v/s Ratio Prot	0.00	c0.21	c0.44		c0.08	
v/s Ratio Perm				0.12		0.00
v/c Ratio	0.10	0.30	0.69	0.18	0.41	0.00
Uniform Delay, d1	34.6	3.8	8.2	5.2	25.3	23.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.7	0.1	0.3	0.0
Delay (s)	34.9	3.8	8.9	5.3	25.5	23.2
Level of Service	C	A	A	A	C	C
Approach Delay (s)		4.0	8.5		25.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1182	20	217	2402	21	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1244	21	228	2528	22	137
RTOR Reduction (vph)	0	11	0	0	0	113
Lane Group Flow (vph)	1244	10	228	2528	22	24
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	29.9	29.9	11.5	45.4	10.8	10.8
Effective Green, g (s)	32.9	32.9	12.5	48.4	11.8	11.8
Actuated g/C Ratio	0.49	0.49	0.19	0.72	0.18	0.18
Clearance Time (s)	6.0	6.0	4.0	6.0	4.9	4.9
Vehicle Extension (s)	4.1	4.1	2.0	4.1	2.0	2.0
Lane Grp Cap (vph)	2493	776	330	3668	311	278
v/s Ratio Prot	0.24		0.13	c0.50	0.01	
v/s Ratio Perm		0.01				c0.02
v/c Ratio	0.50	0.01	0.69	0.69	0.07	0.09
Uniform Delay, d1	11.5	8.8	25.5	5.2	23.1	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	5.0	0.6	0.0	0.0
Delay (s)	11.8	8.8	30.5	5.8	23.1	23.2
Level of Service	B	A	C	A	C	C
Approach Delay (s)	11.7			7.8	23.2	
Approach LOS	B			A	C	

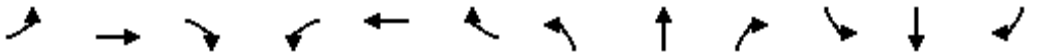
Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	6.9
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	38	1255	2590	342	203	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.9	3.9
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1534	1770	1557
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1534	1770	1557
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	1321	2726	360	214	29
RTOR Reduction (vph)	0	0	0	77	0	24
Lane Group Flow (vph)	40	1321	2726	283	214	5
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.4	68.5	61.1	61.1	17.2	17.2
Effective Green, g (s)	4.4	71.5	64.1	64.1	18.2	18.2
Actuated g/C Ratio	0.05	0.74	0.66	0.66	0.19	0.19
Clearance Time (s)	4.0	6.0	6.0	6.0	4.9	4.9
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	81	3764	3374	1018	333	293
v/s Ratio Prot	c0.02	0.26	c0.54		c0.12	
v/s Ratio Perm				0.18		0.00
v/c Ratio	0.49	0.35	0.81	0.28	0.64	0.02
Uniform Delay, d1	45.0	4.4	11.8	6.7	36.2	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.1	1.6	0.2	3.2	0.0
Delay (s)	46.7	4.5	13.4	6.9	39.4	31.9
Level of Service	D	A	B	A	D	C
Approach Delay (s)		5.7	12.6		38.5	
Approach LOS		A	B		D	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	9.9
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

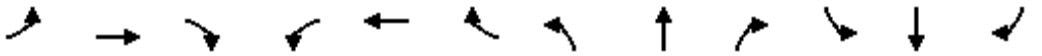


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	270	440	5	428	26	691	547	8	74	817	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	284	463	5	451	27	727	576	8	78	860	0
RTOR Reduction (vph)	0	0	380	0	0	20	0	0	4	0	0	0
Lane Group Flow (vph)	0	284	83	5	451	7	727	576	4	78	860	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		14.0	14.0	1.1	20.1	20.1	19.2	36.1	36.1	7.1	24.0	
Effective Green, g (s)		14.0	14.0	1.1	20.1	20.1	19.2	36.1	36.1	7.1	24.0	
Actuated g/C Ratio		0.18	0.18	0.01	0.26	0.26	0.25	0.46	0.46	0.09	0.31	
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		633	283	25	908	406	842	1632	730	160	1085	
v/s Ratio Prot		0.08		0.00	c0.13		c0.21	0.16		0.04	c0.24	
v/s Ratio Perm			0.05			0.00			0.00			
v/c Ratio		0.45	0.29	0.20	0.50	0.02	0.86	0.35	0.01	0.49	0.79	
Uniform Delay, d1		28.7	27.9	38.2	24.8	21.7	28.3	13.6	11.4	33.9	24.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.6	3.9	0.4	0.0	9.1	0.1	0.0	2.3	4.0	
Delay (s)		29.2	28.4	42.1	25.2	21.7	37.4	13.7	11.4	36.2	28.9	
Level of Service		C	C	D	C	C	D	B	B	D	C	
Approach Delay (s)		28.7			25.2			26.8			29.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

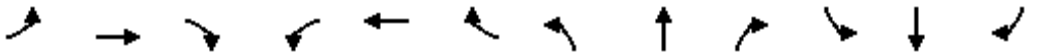
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	363	11	53	452	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3539	1583	1770	3539	1770	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (perm)	3539	1583	1770	3539	1770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	382	12	56	476	8	0
RTOR Reduction (vph)	0	8	0	0	0	0
Lane Group Flow (vph)	382	4	56	476	8	0
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	10.5	10.5	2.0	17.5	7.9	
Effective Green, g (s)	10.5	10.5	2.0	17.5	7.9	
Actuated g/C Ratio	0.30	0.30	0.06	0.49	0.22	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1050	470	100	1750	395	
v/s Ratio Prot	c0.11		0.03	c0.13		
v/s Ratio Perm		0.00			c0.00	
v/c Ratio	0.36	0.01	0.56	0.27	0.02	
Uniform Delay, d1	9.8	8.8	16.3	5.2	10.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.0	7.0	0.1	0.0	
Delay (s)	10.0	8.8	23.3	5.3	10.8	
Level of Service	B	A	C	A	B	
Approach Delay (s)	10.0			7.2	10.8	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	35.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



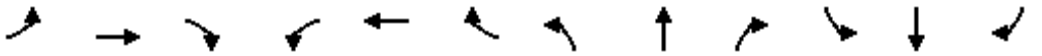
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	317	10	65	492	373	8	935	47	303	1294	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	129	334	11	68	518	393	8	984	49	319	1362	148
RTOR Reduction (vph)	0	0	8	0	0	131	0	0	29	0	0	77
Lane Group Flow (vph)	129	334	3	68	518	262	8	984	20	319	1362	71
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.1	25.4	25.4	3.1	23.4	23.4	0.7	33.4	33.4	10.8	43.5	43.5
Effective Green, g (s)	6.1	27.4	26.4	4.1	25.4	24.4	1.7	35.4	34.4	11.8	45.5	44.5
Actuated g/C Ratio	0.07	0.30	0.28	0.04	0.27	0.26	0.02	0.38	0.37	0.13	0.49	0.48
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	226	1503	451	152	970	417	63	1351	587	437	2496	760
v/s Ratio Prot	c0.04	0.07		0.02	0.15		0.00	c0.28		c0.09	0.27	
v/s Ratio Perm			0.00			c0.17			0.01			0.04
v/c Ratio	0.57	0.22	0.01	0.45	0.53	0.63	0.13	0.73	0.03	0.73	0.55	0.09
Uniform Delay, d1	42.0	24.6	23.8	43.2	28.6	30.1	44.8	24.5	18.6	38.9	16.4	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.1	0.0	2.1	0.6	2.9	0.9	2.0	0.0	6.0	0.2	0.1
Delay (s)	45.5	24.7	23.8	45.3	29.2	33.1	45.7	26.5	18.6	44.9	16.7	13.2
Level of Service	D	C	C	D	C	C	D	C	B	D	B	B
Approach Delay (s)		30.3			31.9			26.3			21.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



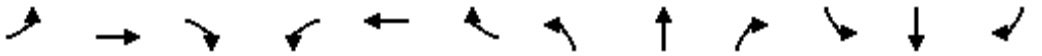
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	659	13	86	921	34	5	0	32	16	5	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.91	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539	1583	1770	1583		1770	1691	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539	1583	1770	1583		1770	1691	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	694	14	91	969	36	5	0	34	17	5	8
RTOR Reduction (vph)	0	0	9	0	0	17	0	27	0	0	7	0
Lane Group Flow (vph)	0	694	5	91	969	19	5	7	0	17	6	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		15.1	15.1	4.4	23.5	23.5	5.9	9.0		0.4	3.5	
Effective Green, g (s)		15.1	15.1	4.4	23.5	23.5	5.9	9.0		0.4	3.5	
Actuated g/C Ratio		0.34	0.34	0.10	0.52	0.52	0.13	0.20		0.01	0.08	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1190	532	173	1852	829	233	317		16	132	
v/s Ratio Prot		0.20		0.05	c0.27		c0.00	0.00		c0.01	c0.00	
v/s Ratio Perm			0.00			0.01						
v/c Ratio		0.58	0.01	0.53	0.52	0.02	0.02	0.02		1.06	0.04	
Uniform Delay, d1		12.3	9.9	19.3	7.0	5.2	17.0	14.4		22.2	19.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.0	2.9	0.3	0.0	0.2	0.0		246.4	0.1	
Delay (s)		13.0	9.9	22.1	7.3	5.2	17.2	14.4		268.7	19.3	
Level of Service		B	A	C	A	A	B	B		F	B	
Approach Delay (s)		13.0			8.5			14.8			160.6	
Approach LOS		B			A			B			F	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	44.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	635	15	231	1133	81	13	130	179	10	181	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	3.0	4.7	4.7	4.3	4.3	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	668	16	243	1193	85	14	137	188	11	191	115
RTOR Reduction (vph)	0	0	11	0	0	49	0	0	156	0	0	94
Lane Group Flow (vph)	52	668	5	243	1193	36	14	137	32	11	191	21
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	4.0	21.9	21.9	13.5	31.4	31.4	12.8	12.8	12.8	13.6	13.6	13.6
Effective Green, g (s)	5.0	22.9	22.9	14.5	32.4	32.4	13.8	13.8	13.8	14.6	14.6	14.6
Actuated g/C Ratio	0.06	0.28	0.28	0.18	0.40	0.40	0.17	0.17	0.17	0.18	0.18	0.18
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	5.3	5.3	5.3	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	110	1003	449	318	1419	635	302	318	270	320	337	286
v/s Ratio Prot	0.03	0.19		c0.14	c0.34		0.01	c0.07		0.01	c0.10	
v/s Ratio Perm			0.00			0.02			0.02			0.01
v/c Ratio	0.47	0.67	0.01	0.76	0.84	0.06	0.05	0.43	0.12	0.03	0.57	0.07
Uniform Delay, d1	36.6	25.6	20.8	31.5	21.9	14.8	28.0	30.0	28.4	27.3	30.2	27.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	2.0	0.0	9.4	5.1	0.1	0.0	0.3	0.1	0.0	1.3	0.0
Delay (s)	37.8	27.6	20.8	41.0	26.9	14.9	28.0	30.3	28.4	27.3	31.5	27.5
Level of Service	D	C	C	D	C	B	C	C	C	C	C	C
Approach Delay (s)		28.2			28.5			29.2			29.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.8	Sum of lost time (s)	10.3
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

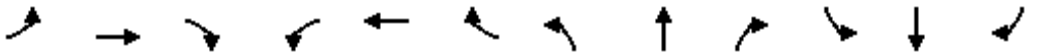


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	906	12	93	1302	53	15	17	14	34	37	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	5.7	4.0	4.7	4.7	4.9	4.9	4.9	3.9	4.9	3.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	954	13	98	1371	56	16	18	15	36	39	40
RTOR Reduction (vph)	0	0	6	0	0	17	0	0	14	0	0	36
Lane Group Flow (vph)	18	954	7	98	1371	39	16	18	1	36	39	4
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	0.6	38.8	38.8	6.2	44.4	44.4	5.0	5.0	5.0	6.7	6.7	6.7
Effective Green, g (s)	1.6	39.8	38.8	6.2	45.4	45.4	5.0	5.0	5.0	7.7	6.7	7.7
Actuated g/C Ratio	0.02	0.52	0.51	0.08	0.60	0.60	0.07	0.07	0.07	0.10	0.09	0.10
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.9	4.9	4.9	4.9	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	37	1848	806	144	2109	943	116	122	104	179	164	160
v/s Ratio Prot	0.01	0.27		c0.06	c0.39		0.01	c0.01		0.02	c0.02	
v/s Ratio Perm			0.00			0.02			0.00			0.00
v/c Ratio	0.49	0.52	0.01	0.68	0.65	0.04	0.14	0.15	0.01	0.20	0.24	0.03
Uniform Delay, d1	36.9	11.9	9.2	34.0	10.2	6.4	33.6	33.6	33.3	31.4	32.4	30.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.4	0.0	10.1	0.9	0.0	0.2	0.2	0.0	0.2	0.3	0.0
Delay (s)	40.5	12.3	9.2	44.1	11.0	6.4	33.8	33.8	33.3	31.6	32.6	30.9
Level of Service	D	B	A	D	B	A	C	C	C	C	C	C
Approach Delay (s)		12.8			13.0			33.6			31.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	76.2	Sum of lost time (s)	13.8
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

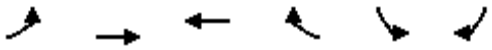
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	821	87	176	1324	113	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	864	92	185	1394	119	91
RTOR Reduction (vph)	0	56	0	0	0	75
Lane Group Flow (vph)	864	36	185	1394	119	16
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	22.0	22.0	8.9	35.9	9.8	9.8
Effective Green, g (s)	22.0	22.0	8.9	35.9	9.8	9.8
Actuated g/C Ratio	0.39	0.39	0.16	0.64	0.18	0.18
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1398	625	283	2281	311	279
v/s Ratio Prot	0.24		0.10	c0.39	c0.07	
v/s Ratio Perm		0.02				0.01
v/c Ratio	0.62	0.06	0.65	0.61	0.38	0.06
Uniform Delay, d1	13.5	10.4	22.0	5.8	20.3	19.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.0	5.3	0.5	0.8	0.1
Delay (s)	14.3	10.5	27.3	6.3	21.1	19.2
Level of Service	B	B	C	A	C	B
Approach Delay (s)	13.9			8.8	20.3	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



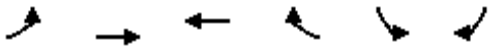
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	557	400	955	870	52	576	1090	536	67	1073	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.0	3.5		3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	0.97	0.95	1.00	0.94	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	4990	3509		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	4990	3509		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	586	421	1005	916	55	606	1147	564	71	1129	80
RTOR Reduction (vph)	0	0	236	0	3	0	0	0	307	0	0	57
Lane Group Flow (vph)	104	586	185	1005	968	0	606	1147	257	71	1129	23
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	10.0	20.9	20.9	25.3	35.9		22.3	47.1	47.1	6.3	31.1	31.1
Effective Green, g (s)	11.0	23.4	23.4	26.3	38.4		23.3	50.5	50.5	7.3	34.5	34.5
Actuated g/C Ratio	0.09	0.20	0.20	0.22	0.32		0.20	0.42	0.42	0.06	0.29	0.29
Clearance Time (s)	4.0	5.7	5.7	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.1		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	317	694	310	1100	1129		670	2152	670	210	1471	458
v/s Ratio Prot	0.03	0.17		c0.20	c0.28		c0.18	0.23		0.02	c0.22	
v/s Ratio Perm			0.12						0.16			0.01
v/c Ratio	0.33	0.84	0.60	0.91	0.86		0.90	0.53	0.38	0.34	0.77	0.05
Uniform Delay, d1	50.7	46.2	43.7	45.4	37.9		46.9	25.6	23.7	53.7	38.7	30.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	10.0	4.1	11.3	6.9		15.4	0.4	0.7	0.3	2.9	0.1
Delay (s)	50.9	56.2	47.8	56.6	44.8		62.3	26.1	24.4	54.0	41.6	30.7
Level of Service	D	E	D	E	D		E	C	C	D	D	C
Approach Delay (s)		52.5			50.8			35.1			41.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	43.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	119.3	Sum of lost time (s)	8.6
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



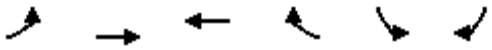
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	13	1134	1616	168	107	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7	3.0	2.5	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	1194	1701	177	113	8
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	14	1194	1701	177	113	8
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	1.2	53.8	48.9	73.4	9.6	73.4
Effective Green, g (s)	2.2	56.8	51.9	73.4	11.1	73.4
Actuated g/C Ratio	0.03	0.77	0.71	1.00	0.15	1.00
Clearance Time (s)	4.0	6.0	5.7		4.0	
Vehicle Extension (s)	2.0	4.1	4.5		2.0	
Lane Grp Cap (vph)	53	2739	2502	1583	268	1583
v/s Ratio Prot	0.01	c0.34	c0.48		c0.06	
v/s Ratio Perm				0.11		0.01
v/c Ratio	0.26	0.44	0.68	0.11	0.42	0.01
Uniform Delay, d1	34.8	2.8	6.1	0.0	28.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	0.9	0.1	0.4	0.0
Delay (s)	35.8	3.0	7.0	0.1	28.6	0.0
Level of Service	D	A	A	A	C	A
Approach Delay (s)		3.4	6.3		26.7	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	73.4	Sum of lost time (s)	8.2
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	1183	1808	16	48	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.98	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	3535		1755	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	3535		1755	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1245	1903	17	51	7
RTOR Reduction (vph)	0	0	0	0	6	0
Lane Group Flow (vph)	16	1245	1920	0	52	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.2	63.0	57.8		6.6	
Effective Green, g (s)	2.2	65.7	60.5		7.6	
Actuated g/C Ratio	0.03	0.83	0.76		0.10	
Clearance Time (s)	4.0	5.7	5.7		4.0	
Vehicle Extension (s)	2.0	4.5	4.5		2.0	
Lane Grp Cap (vph)	49	2932	2697		168	
v/s Ratio Prot	0.01	c0.35	c0.54		c0.03	
v/s Ratio Perm						
v/c Ratio	0.33	0.42	0.71		0.31	
Uniform Delay, d1	37.8	1.8	4.9		33.4	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.4	0.2	1.0		0.4	
Delay (s)	39.2	2.0	5.9		33.8	
Level of Service	D	A	A		C	
Approach Delay (s)		2.4	5.9		33.8	
Approach LOS		A	A		C	

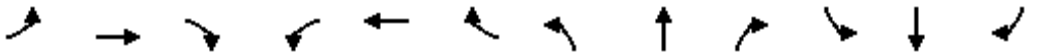
Intersection Summary			
HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	45	1279	1837	27	31	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	5.7	3.0	3.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1520	1770	1544
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1520	1770	1544
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	1346	1934	28	33	35
RTOR Reduction (vph)	0	0	0	8	0	31
Lane Group Flow (vph)	47	1346	1934	20	33	4
Confl. Peds. (#/hr)				10		10
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.8	67.6	59.8	59.8	8.5	8.5
Effective Green, g (s)	4.8	70.3	62.5	60.8	9.5	9.5
Actuated g/C Ratio	0.06	0.81	0.72	0.70	0.11	0.11
Clearance Time (s)	4.0	6.7	6.7	6.7	4.0	4.0
Vehicle Extension (s)	2.0	4.3	4.3	4.3	2.0	2.0
Lane Grp Cap (vph)	98	2866	2548	1065	194	169
v/s Ratio Prot	0.03	c0.38	c0.55		c0.02	
v/s Ratio Perm				0.01		0.00
v/c Ratio	0.48	0.47	0.76	0.02	0.17	0.02
Uniform Delay, d1	39.8	2.5	7.5	3.9	35.1	34.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.2	1.5	0.0	0.2	0.0
Delay (s)	41.1	2.7	9.0	4.0	35.2	34.5
Level of Service	D	A	A	A	D	C
Approach Delay (s)		4.0	8.9		34.9	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	996	148	612	1554	215	259	444	528	358	689	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	3.0	3.0	2.7	3.0	2.0	2.7	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3090	4577	1400	3090	4577	1400	3090	3185	1400	3090	3185	1400
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	1048	156	644	1636	226	273	467	556	377	725	200
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	73	1048	156	644	1636	226	273	467	556	377	725	200
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	4.8	30.5	120.0	29.8	55.5	120.0	12.1	22.9	120.0	18.4	28.2	120.0
Effective Green, g (s)	5.8	33.5	120.0	30.8	58.5	120.0	13.1	25.9	120.0	19.4	31.2	120.0
Actuated g/C Ratio	0.05	0.28	1.00	0.26	0.49	1.00	0.11	0.22	1.00	0.16	0.26	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		3.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	149	1278	1400	793	2231	1400	337	687	1400	500	828	1400
v/s Ratio Prot	0.02	c0.23		c0.21	0.36		c0.09	0.15		0.12	c0.23	
v/s Ratio Perm			0.11			0.16			0.40			0.14
v/c Ratio	0.49	0.82	0.11	0.81	0.73	0.16	0.81	0.68	0.40	0.75	0.88	0.14
Uniform Delay, d1	55.7	40.4	0.0	41.9	24.5	0.0	52.2	43.2	0.0	48.0	42.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	6.0	0.2	6.0	1.5	0.2	13.0	3.2	0.8	5.7	10.8	0.2
Delay (s)	56.6	46.4	0.2	47.9	26.0	0.2	65.2	46.4	0.8	53.7	53.4	0.2
Level of Service	E	D	A	D	C	A	E	D	A	D	D	A
Approach Delay (s)		41.3			29.3			30.8			45.3	
Approach LOS		D			C			C			D	

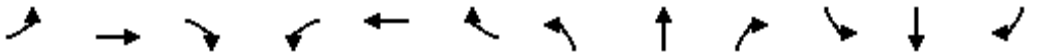
Intersection Summary			
HCM Average Control Delay	35.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1657	213	211	2538	11	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		4.0	3.7	1.7	1.7
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4969		1770	5085	1770	1542
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4969		1770	5085	1770	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1744	224	222	2672	12	247
RTOR Reduction (vph)	9	0	0	0	0	225
Lane Group Flow (vph)	1959	0	222	2672	12	22
Confl. Peds. (#/hr)		10				10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	78.9		18.8	101.7	9.6	9.6
Effective Green, g (s)	80.9		18.8	103.7	10.9	10.9
Actuated g/C Ratio	0.67		0.16	0.86	0.09	0.09
Clearance Time (s)	5.7		4.0	5.7	3.0	3.0
Vehicle Extension (s)	4.5		2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	3350		277	4394	161	140
v/s Ratio Prot	0.39		c0.13	c0.53	0.01	
v/s Ratio Perm						c0.01
v/c Ratio	0.58		0.80	0.61	0.07	0.16
Uniform Delay, d1	10.5		48.8	2.3	49.9	50.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		14.4	0.6	0.1	0.2
Delay (s)	11.3		63.2	3.0	50.0	50.5
Level of Service	B		E	A	D	D
Approach Delay (s)	11.3			7.6	50.5	
Approach LOS	B			A	D	

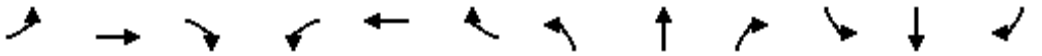
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



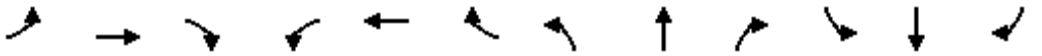
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	367	1402	77	746	1879	116	312	851	528	151	1435	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	6.0	5.7	4.0	6.0	6.0	4.0	4.0	6.4	4.0
Lane Util. Factor	0.97	0.91	1.00	0.94	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	4990	5085	1583	3433	5085	1583	3433	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	386	1476	81	785	1978	122	328	896	556	159	1511	439
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	386	1476	81	785	1978	122	328	896	556	159	1511	439
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.3	42.3	120.0	19.0	48.3	120.0	9.0	28.5	120.0	8.5	25.6	120.0
Effective Green, g (s)	13.3	42.3	120.0	19.0	48.3	120.0	9.0	28.5	120.0	8.5	25.6	120.0
Actuated g/C Ratio	0.11	0.35	1.00	0.16	0.40	1.00	0.08	0.24	1.00	0.07	0.21	1.00
Clearance Time (s)	5.7	5.7		6.0	5.7		6.0	6.0		4.0	6.4	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	3.7	
Lane Grp Cap (vph)	380	1792	1583	790	2047	1583	257	1208	1583	243	1367	1583
v/s Ratio Prot	c0.11	0.29		0.16	c0.39		c0.10	0.18		0.05	c0.24	
v/s Ratio Perm			0.05			0.08			c0.35			0.28
v/c Ratio	1.02	0.82	0.05	0.99	0.97	0.08	1.28	0.74	0.35	0.65	1.11	0.28
Uniform Delay, d1	53.4	35.4	0.0	50.4	35.1	0.0	55.5	42.3	0.0	54.3	47.2	0.0
Progression Factor	1.00	1.00	1.00	0.82	0.48	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	50.2	3.5	0.1	24.9	10.4	0.1	151.0	2.7	0.6	4.8	58.6	0.4
Delay (s)	103.6	39.0	0.1	66.1	27.3	0.1	206.5	45.0	0.6	59.1	105.8	0.4
Level of Service	F	D	A	E	C	A	F	D	A	E	F	A
Approach Delay (s)		50.2			36.7			60.9			80.3	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM Average Control Delay	55.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.8
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



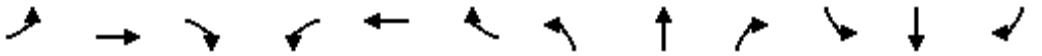
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	177	1699	112	460	2107	77	311	723	306	220	1267	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.0	3.0	3.0	3.4	3.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	3433	3539	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	186	1788	118	484	2218	81	327	761	322	232	1334	156
RTOR Reduction (vph)	0	0	55	0	0	0	0	0	0	0	0	84
Lane Group Flow (vph)	186	1788	63	484	2218	81	327	761	322	232	1334	72
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			Free			6
Actuated Green, G (s)	8.7	43.0	43.0	16.0	52.3	120.0	10.0	29.6	120.0	9.0	28.6	28.6
Effective Green, g (s)	9.7	46.0	46.0	19.4	55.7	120.0	11.0	33.0	120.0	10.0	31.6	31.6
Actuated g/C Ratio	0.08	0.38	0.38	0.16	0.46	1.00	0.09	0.28	1.00	0.08	0.26	0.26
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.4		4.0	6.4	6.4
Vehicle Extension (s)	2.0	4.1	4.1	2.0	4.1		2.0	4.3		2.0	4.3	4.3
Lane Grp Cap (vph)	278	1949	607	555	2974	1583	315	973	1583	286	1339	417
v/s Ratio Prot	0.05	c0.35		c0.14	0.35		c0.10	0.22		0.07	c0.26	
v/s Ratio Perm			0.04			0.05			0.20			0.05
v/c Ratio	0.67	0.92	0.10	0.87	0.75	0.05	1.04	0.78	0.20	0.81	1.00	0.17
Uniform Delay, d1	53.6	35.2	23.8	49.1	26.3	0.0	54.5	40.2	0.0	54.1	44.1	34.1
Progression Factor	1.40	0.42	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	6.3	0.2	13.7	1.7	0.1	60.9	4.5	0.3	15.1	23.6	0.3
Delay (s)	78.4	21.0	2.4	62.8	28.1	0.1	115.4	44.7	0.3	69.2	67.7	34.4
Level of Service	E	C	A	E	C	A	F	D	A	E	E	C
Approach Delay (s)		25.1			33.3			51.0			64.9	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	41.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



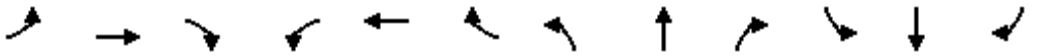
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	2132	32	93	2246	83	382	55	25	107	10	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	13	2244	34	98	2364	87	402	58	26	113	11	15
RTOR Reduction (vph)	0	0	10	0	0	20	0	0	22	0	0	14
Lane Group Flow (vph)	13	2244	24	98	2364	67	402	58	4	113	11	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.2	80.3	80.3	12.4	91.5	91.5	33.0	21.2	21.2	18.4	5.7	5.7
Effective Green, g (s)	1.2	80.3	80.3	12.4	91.5	91.5	33.0	21.2	21.2	18.4	5.7	5.7
Actuated g/C Ratio	0.01	0.54	0.54	0.08	0.61	0.61	0.22	0.14	0.14	0.12	0.04	0.04
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5	4.5	2.0	2.5	2.5	2.0	3.1	3.1
Lane Grp Cap (vph)	14	2722	847	146	3102	966	389	263	224	217	71	60
v/s Ratio Prot	0.01	c0.44		0.06	c0.46		c0.23	c0.03		0.06	0.01	
v/s Ratio Perm			0.02			0.04			0.00			0.00
v/c Ratio	0.93	0.82	0.03	0.67	0.76	0.07	1.03	0.22	0.02	0.52	0.15	0.01
Uniform Delay, d1	74.4	29.0	16.4	66.8	21.3	11.9	58.5	57.1	55.4	61.7	69.8	69.4
Progression Factor	1.00	1.00	1.00	0.83	0.73	0.77	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	199.0	3.0	0.1	2.3	0.3	0.0	54.5	0.3	0.0	1.0	1.1	0.1
Delay (s)	273.3	32.0	16.5	57.9	15.8	9.2	113.0	57.4	55.4	62.7	70.9	69.5
Level of Service	F	C	B	E	B	A	F	E	E	E	E	E
Approach Delay (s)		33.1			17.2			103.3			64.1	
Approach LOS		C			B			F			E	

Intersection Summary			
HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



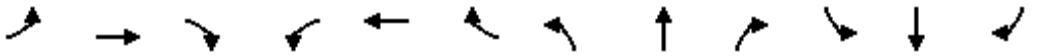
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	12	35	281	26	77	88	1351	173	94	930	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5		3.0	3.5		3.0	3.0	3.0	2.0	3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	1490		1593	1488		1593	4577	1425	1593	3185	1425
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1593	1490		1593	1488		1593	4577	1425	1593	3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	13	37	296	27	81	93	1422	182	99	979	1
RTOR Reduction (vph)	0	33	0	0	57	0	0	0	99	0	0	1
Lane Group Flow (vph)	6	17	0	296	51	0	93	1422	83	99	979	0
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	0.6	10.4		18.8	28.6		9.4	42.7	42.7	10.1	42.4	42.4
Effective Green, g (s)	1.6	11.9		19.8	30.1		10.4	45.7	45.7	11.1	45.4	45.4
Actuated g/C Ratio	0.02	0.12		0.20	0.30		0.10	0.46	0.46	0.11	0.45	0.45
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.7		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	25	177		315	448		166	2092	651	177	1446	647
v/s Ratio Prot	0.00	0.01		c0.19	c0.03		0.06	c0.31		c0.06	0.31	
v/s Ratio Perm									0.06			0.00
v/c Ratio	0.24	0.10		0.94	0.11		0.56	0.68	0.13	0.56	0.68	0.00
Uniform Delay, d1	48.6	39.3		39.5	25.3		42.6	21.4	15.7	42.1	21.5	14.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.2		34.3	0.1		2.6	1.8	0.4	2.2	1.5	0.0
Delay (s)	50.4	39.5		73.9	25.4		45.2	23.2	16.1	44.3	23.0	14.9
Level of Service	D	D		E	C		D	C	B	D	C	B
Approach Delay (s)		40.6			60.9			23.6			25.0	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	29.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	5.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



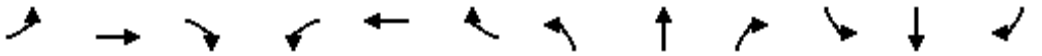
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	3	8	45	11	84	18	1566	56	59	1506	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	3	8	47	12	88	19	1648	59	62	1585	9
RTOR Reduction (vph)	0	0	7	0	0	77	0	0	23	0	0	4
Lane Group Flow (vph)	4	3	1	47	12	11	19	1648	36	62	1585	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	6.6	6.6	2.7	8.8	8.8	0.7	35.5	35.5	3.2	38.0	38.0
Effective Green, g (s)	0.5	6.6	6.6	2.7	8.8	8.8	0.7	35.5	35.5	3.2	38.0	38.0
Actuated g/C Ratio	0.01	0.10	0.10	0.04	0.13	0.13	0.01	0.52	0.52	0.05	0.56	0.56
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	343	154	70	458	205	18	2655	826	83	2842	885
v/s Ratio Prot	0.00	0.00		c0.03	0.00		0.01	c0.32		c0.04	0.31	
v/s Ratio Perm			0.00			c0.01			0.02			0.00
v/c Ratio	0.31	0.01	0.01	0.67	0.03	0.06	1.06	0.62	0.04	0.75	0.56	0.01
Uniform Delay, d1	33.6	27.7	27.7	32.2	25.9	26.0	33.6	11.5	7.9	32.0	9.6	6.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.0	0.0	0.0	22.4	0.0	0.1	230.8	0.5	0.0	30.2	0.2	0.0
Delay (s)	46.6	27.8	27.7	54.7	25.9	26.1	264.5	11.9	8.0	62.2	9.9	6.6
Level of Service	D	C	C	D	C	C	F	B	A	E	A	A
Approach Delay (s)		32.8			35.2			14.6			11.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	73	6	1	151	33	4	1	2	13	4	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	77	6	1	159	35	4	1	2	14	4	2
RTOR Reduction (vph)	0	0	5	0	0	29	0	0	1	0	0	1
Lane Group Flow (vph)	1	77	1	1	159	6	4	1	1	14	4	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	7.2	7.2	0.4	7.2	7.2	0.4	13.1	13.1	0.9	13.6	13.6
Effective Green, g (s)	0.4	7.2	7.2	0.4	7.2	7.2	0.4	13.1	13.1	0.9	13.6	13.6
Actuated g/C Ratio	0.01	0.17	0.17	0.01	0.17	0.17	0.01	0.31	0.31	0.02	0.33	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	17	613	274	17	613	274	17	587	498	38	609	518
v/s Ratio Prot	c0.00	0.02		0.00	c0.04		0.00	0.00		c0.01	c0.00	
v/s Ratio Perm			0.00			0.00			0.00			0.00
v/c Ratio	0.06	0.13	0.00	0.06	0.26	0.02	0.24	0.00	0.00	0.37	0.01	0.00
Uniform Delay, d1	20.4	14.5	14.2	20.4	14.9	14.3	20.4	9.8	9.8	20.1	9.4	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	0.0	1.5	0.2	0.0	7.0	0.0	0.0	6.0	0.0	0.0
Delay (s)	21.9	14.6	14.2	21.9	15.1	14.3	27.5	9.8	9.8	26.0	9.4	9.4
Level of Service	C	B	B	C	B	B	C	A	A	C	A	A
Approach Delay (s)		14.7			15.0			19.9			21.0	
Approach LOS		B			B			B			C	

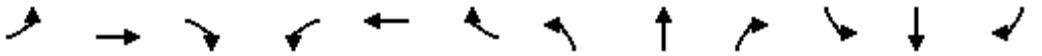
Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.09		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	60	9	463	102	34	70	1336	245	67	1168	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.3	4.3	4.0	3.3	4.3
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	63	9	487	107	36	74	1406	258	71	1229	53
RTOR Reduction (vph)	0	0	8	0	0	21	0	0	124	0	0	29
Lane Group Flow (vph)	17	63	1	487	107	15	74	1406	134	71	1229	24
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.8	11.4	11.4	30.8	40.4	40.4	4.6	32.4	32.4	4.6	32.4	32.4
Effective Green, g (s)	2.8	13.4	12.4	31.8	42.4	41.4	5.6	34.4	33.4	5.6	34.4	33.4
Actuated g/C Ratio	0.03	0.13	0.12	0.32	0.43	0.42	0.06	0.35	0.34	0.06	0.35	0.34
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	50	477	197	566	1508	659	100	1758	531	100	1758	531
v/s Ratio Prot	0.01	c0.02		c0.28	0.03		c0.04	c0.28		0.04	0.24	
v/s Ratio Perm			0.00			0.01			0.08			0.02
v/c Ratio	0.34	0.13	0.01	0.86	0.07	0.02	0.74	0.80	0.25	0.71	0.70	0.04
Uniform Delay, d1	47.4	37.9	38.1	31.8	16.9	17.1	46.2	29.4	24.0	46.2	28.1	22.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.1	0.0	12.7	0.0	0.0	24.6	2.6	0.3	20.6	1.2	0.0
Delay (s)	51.5	38.1	38.2	44.4	16.9	17.1	70.9	32.1	24.2	66.7	29.3	22.3
Level of Service	D	D	D	D	B	B	E	C	C	E	C	C
Approach Delay (s)		40.6			38.2			32.6			31.0	
Approach LOS		D			D			C			C	

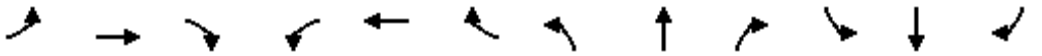
Intersection Summary			
HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	99.5	Sum of lost time (s)	14.3
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



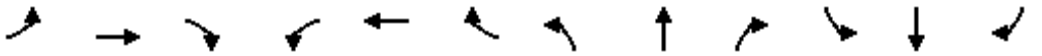
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	370	0	22	591	0	26	0	1	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0		5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00		1.00	
Frt	1.00	1.00		1.00	1.00		1.00		0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00		1.00	
Satd. Flow (prot)	1770	3539		1770	3539		1770		1583		1863	
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00		1.00	
Satd. Flow (perm)	1770	3539		1770	3539		1770		1583		1863	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	389	0	23	622	0	27	0	1	0	2	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	2	389	0	23	622	0	27	0	0	0	2	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	14.0		0.5	14.1		0.4		14.1		8.7	
Effective Green, g (s)	0.4	14.0		0.5	14.1		0.4		14.1		8.7	
Actuated g/C Ratio	0.01	0.32		0.01	0.32		0.01		0.32		0.20	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0		5.0		5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	16	1136		20	1144		16		512		372	
v/s Ratio Prot	0.00	0.11		c0.01	c0.18		c0.02				c0.00	
v/s Ratio Perm									0.00			
v/c Ratio	0.12	0.34		1.15	0.54		1.69		0.00		0.01	
Uniform Delay, d1	21.4	11.3		21.6	12.1		21.6		10.0		14.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2	3.5	0.2		252.2	0.5		485.4		0.0		0.0	
Delay (s)	24.9	11.5		273.7	12.6		507.0		10.0		14.0	
Level of Service	C	B		F	B		F		A		B	
Approach Delay (s)		11.5			22.0			489.2			14.0	
Approach LOS		B			C			F			B	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



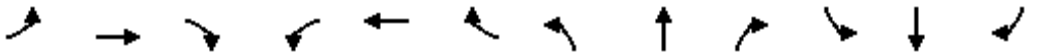
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	265	48	38	676	6	70	81	12	3	52	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	279	51	40	712	6	74	85	13	3	55	39
RTOR Reduction (vph)	0	0	35	0	0	4	0	0	9	0	0	30
Lane Group Flow (vph)	72	279	16	40	712	2	74	85	4	3	55	9
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.9	16.8	16.8	1.3	15.2	15.2	2.9	15.1	15.1	0.6	12.8	12.8
Effective Green, g (s)	2.9	16.8	16.8	1.3	15.2	15.2	2.9	15.1	15.1	0.6	12.8	12.8
Actuated g/C Ratio	0.05	0.31	0.31	0.02	0.28	0.28	0.05	0.28	0.28	0.01	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	95	1105	494	43	1000	447	95	523	444	20	443	377
v/s Ratio Prot	c0.04	0.08		0.02	c0.20		c0.04	c0.05		0.00	0.03	
v/s Ratio Perm			0.01			0.00			0.00			0.01
v/c Ratio	0.76	0.25	0.03	0.93	0.71	0.00	0.78	0.16	0.01	0.15	0.12	0.02
Uniform Delay, d1	25.1	13.8	12.9	26.2	17.3	13.9	25.1	14.6	14.0	26.3	16.1	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.6	0.1	0.0	110.0	2.4	0.0	32.2	0.1	0.0	3.5	0.1	0.0
Delay (s)	53.8	13.9	12.9	136.2	19.8	13.9	57.3	14.7	14.0	29.8	16.2	15.7
Level of Service	D	B	B	F	B	B	E	B	B	C	B	B
Approach Delay (s)		20.9			25.9			33.0			16.5	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



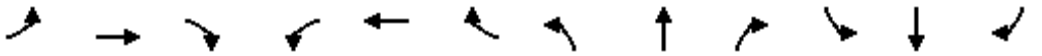
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	292	17	76	760	0	12	0	38	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0		5.0			5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00		1.00			1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00		0.85			0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95		1.00			1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539		1770		1583			1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95		1.00			1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539		1770		1583			1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	307	18	80	800	0	13	0	40	0	0	5
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	29	0	0	4
Lane Group Flow (vph)	2	307	6	80	800	0	13	0	11	0	0	1
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.4	16.4	16.4	4.0	20.0		0.4		14.1			8.7
Effective Green, g (s)	0.4	16.4	16.4	4.0	20.0		0.4		14.1			8.7
Actuated g/C Ratio	0.01	0.33	0.33	0.08	0.40		0.01		0.28			0.18
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0		5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0		3.0			3.0
Lane Grp Cap (vph)	14	1173	524	143	1430		14		451			278
v/s Ratio Prot	0.00	0.09		c0.05	c0.23		c0.01					
v/s Ratio Perm			0.00						c0.01			0.00
v/c Ratio	0.14	0.26	0.01	0.56	0.56		0.93		0.03			0.00
Uniform Delay, d1	24.4	12.1	11.1	21.9	11.4		24.5		12.7			16.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00		1.00			1.00
Incremental Delay, d2	4.7	0.1	0.0	4.7	0.5		201.0		0.0			0.0
Delay (s)	29.0	12.2	11.1	26.6	11.8		225.5		12.8			16.8
Level of Service	C	B	B	C	B		F		B			B
Approach Delay (s)		12.3			13.2			65.0			16.8	
Approach LOS		B			B			E			B	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	49.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



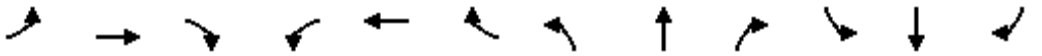
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	234	47	71	714	1	74	136	99	5	97	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	246	49	75	752	1	78	143	104	5	102	52
RTOR Reduction (vph)	0	0	32	0	0	1	0	0	78	0	0	41
Lane Group Flow (vph)	52	246	17	75	752	0	78	143	26	5	102	11
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.8	19.0	19.0	2.8	19.0	19.0	2.8	14.0	14.0	0.6	11.8	11.8
Effective Green, g (s)	2.8	19.0	19.0	2.8	19.0	19.0	2.8	14.0	14.0	0.6	11.8	11.8
Actuated g/C Ratio	0.05	0.34	0.34	0.05	0.34	0.34	0.05	0.25	0.25	0.01	0.21	0.21
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	88	1192	533	88	1192	533	88	462	393	19	390	331
v/s Ratio Prot	0.03	0.07		c0.04	c0.21		c0.04	c0.08		0.00	0.05	
v/s Ratio Perm			0.01			0.00			0.02			0.01
v/c Ratio	0.59	0.21	0.03	0.85	0.63	0.00	0.89	0.31	0.07	0.26	0.26	0.03
Uniform Delay, d1	26.2	13.3	12.5	26.6	15.7	12.4	26.6	17.3	16.2	27.7	18.7	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.2	0.1	0.0	50.8	1.1	0.0	59.6	0.4	0.1	7.3	0.4	0.0
Delay (s)	36.4	13.4	12.6	77.4	16.8	12.4	86.2	17.6	16.3	35.0	19.0	17.8
Level of Service	D	B	B	E	B	B	F	B	B	C	B	B
Approach Delay (s)		16.7			22.3			33.7			19.1	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



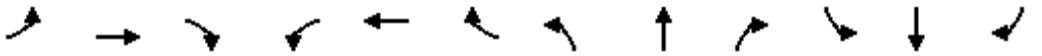
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	341	0	11	13	0	528	42	1624	24	223	1467	834
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97		1.00	1.00		1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583	1770		1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583	1770		1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	359	0	12	14	0	556	44	1709	25	235	1544	878
RTOR Reduction (vph)	0	0	10	0	0	18	0	0	8	0	0	268
Lane Group Flow (vph)	359	0	2	14	0	538	44	1709	17	235	1544	610
Turn Type	Prot		custom	Prot		Over	Prot		Perm	Prot		Perm
Protected Phases	7		4	3		1	5	2		1	6	
Permitted Phases			7						2			6
Actuated Green, G (s)	19.4		19.4	1.4		45.2	5.4	51.0	51.0	45.2	90.8	90.8
Effective Green, g (s)	19.4		19.4	1.4		45.2	5.4	51.0	51.0	45.2	90.8	90.8
Actuated g/C Ratio	0.15		0.15	0.01		0.35	0.04	0.39	0.39	0.35	0.70	0.70
Clearance Time (s)	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	510		235	19		548	73	1986	618	613	3535	1101
v/s Ratio Prot	c0.10		0.00	0.01		c0.34	0.02	c0.34		0.13	0.30	
v/s Ratio Perm			0.00						0.01			0.39
v/c Ratio	0.70		0.01	0.74		0.98	0.60	0.86	0.03	0.38	0.44	0.55
Uniform Delay, d1	52.9		47.4	64.4		42.3	61.5	36.5	24.5	32.2	8.7	9.9
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4		0.0	88.4		33.7	13.2	4.1	0.0	0.4	0.1	0.6
Delay (s)	57.3		47.4	152.8		76.0	74.8	40.6	24.5	32.6	8.8	10.5
Level of Service	E		D	F		E	E	D	C	C	A	B
Approach Delay (s)		56.9			77.9			41.2			11.5	
Approach LOS		E			E			D			B	

Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



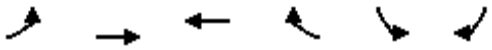
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	1456	30	68	1368	46	0	24	19	143	10	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583		1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	1533	32	72	1440	48	0	25	20	151	11	7
RTOR Reduction (vph)	0	0	16	0	0	25	0	0	17	0	0	5
Lane Group Flow (vph)	15	1533	16	72	1440	23	0	25	3	151	11	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.6	29.8	29.8	3.1	32.3	32.3		10.3	10.3	8.2	23.5	23.5
Effective Green, g (s)	1.6	31.8	30.8	4.1	34.3	33.3		11.3	11.3	9.2	24.5	24.5
Actuated g/C Ratio	0.02	0.45	0.43	0.06	0.48	0.47		0.16	0.16	0.13	0.34	0.34
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	40	2265	683	102	2443	738		295	251	228	639	543
v/s Ratio Prot	0.01	c0.30		0.04	c0.28			c0.01		c0.09	0.01	
v/s Ratio Perm			0.01			0.01			0.00			0.00
v/c Ratio	0.38	0.68	0.02	0.71	0.59	0.03		0.08	0.01	0.66	0.02	0.00
Uniform Delay, d1	34.4	15.7	11.7	33.1	13.4	10.3		25.6	25.3	29.6	15.5	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	0.8	0.0	19.9	0.4	0.0		0.1	0.0	7.0	0.0	0.0
Delay (s)	40.2	16.5	11.7	52.9	13.8	10.3		25.8	25.4	36.7	15.5	15.4
Level of Service	D	B	B	D	B	B		C	C	D	B	B
Approach Delay (s)		16.7			15.5			25.6			34.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



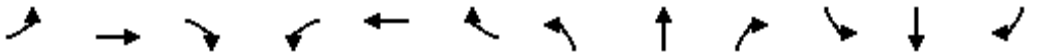
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	551	1146	6	469	1089	38	19	1166	478	57	1106	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	580	1206	6	494	1146	40	20	1227	503	60	1164	420
RTOR Reduction (vph)	0	0	3	0	0	26	0	0	274	0	0	254
Lane Group Flow (vph)	580	1206	3	494	1146	14	20	1227	229	60	1164	166
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.8	34.6	34.6	20.4	33.2	33.2	1.5	37.7	37.7	3.0	39.2	39.2
Effective Green, g (s)	22.8	36.6	35.6	21.4	35.2	34.2	2.5	39.7	38.7	4.0	41.2	40.2
Actuated g/C Ratio	0.20	0.32	0.31	0.18	0.30	0.30	0.02	0.34	0.33	0.03	0.36	0.35
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	677	1609	487	635	1547	468	74	1745	529	119	1811	550
v/s Ratio Prot	c0.17	c0.24		0.14	0.23		0.01	c0.24		c0.02	0.23	
v/s Ratio Perm			0.00			0.01			0.14			0.10
v/c Ratio	0.86	0.75	0.01	0.78	0.74	0.03	0.27	0.70	0.43	0.50	0.64	0.30
Uniform Delay, d1	44.9	35.4	27.8	44.9	36.2	29.0	55.7	32.9	30.0	54.9	31.1	27.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.4	2.0	0.0	6.0	1.9	0.0	2.0	1.3	0.6	3.3	0.8	0.3
Delay (s)	55.3	37.4	27.8	50.9	38.1	29.0	57.7	34.2	30.5	58.2	31.9	27.8
Level of Service	E	D	C	D	D	C	E	C	C	E	C	C
Approach Delay (s)		43.2			41.6			33.4			31.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	37.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	115.7	Sum of lost time (s)	11.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



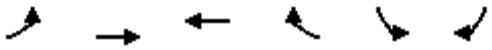
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	204	1291	1284	91	122	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	215	1359	1352	96	128	394
RTOR Reduction (vph)	0	0	0	58	0	321
Lane Group Flow (vph)	215	1359	1352	38	128	73
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	12.9	44.6	26.7	26.7	12.4	12.4
Effective Green, g (s)	12.9	44.6	26.7	26.7	12.4	12.4
Actuated g/C Ratio	0.19	0.67	0.40	0.40	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	341	3385	2026	631	328	293
v/s Ratio Prot	c0.12	0.27	c0.27		c0.07	
v/s Ratio Perm				0.02		0.05
v/c Ratio	0.63	0.40	0.67	0.06	0.39	0.25
Uniform Delay, d1	24.9	5.1	16.5	12.4	24.0	23.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.1	0.8	0.0	0.8	0.4
Delay (s)	28.6	5.2	17.4	12.5	24.7	23.8
Level of Service	C	A	B	B	C	C
Approach Delay (s)		8.4	17.0		24.0	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



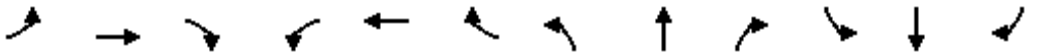
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	525	859	30	467	791	296	13	776	241	164	835	571
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	4.0	4.0	5.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	553	904	32	492	833	312	14	817	254	173	879	601
RTOR Reduction (vph)	0	0	23	0	0	72	0	0	177	0	0	280
Lane Group Flow (vph)	553	904	9	492	833	240	14	817	77	173	879	321
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.5	28.1	28.1	18.3	26.9	26.9	1.4	30.6	30.6	6.1	35.3	35.3
Effective Green, g (s)	20.5	30.1	29.1	19.3	28.9	27.9	2.4	32.6	31.6	7.1	37.3	36.3
Actuated g/C Ratio	0.20	0.29	0.28	0.19	0.28	0.27	0.02	0.31	0.30	0.07	0.36	0.35
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	676	1470	443	636	1412	424	79	1592	481	234	1822	552
v/s Ratio Prot	c0.16	c0.18		0.14	0.16		0.00	0.16		c0.05	0.17	
v/s Ratio Perm			0.01			0.15			0.05			c0.20
v/c Ratio	0.82	0.61	0.02	0.77	0.59	0.56	0.18	0.51	0.16	0.74	0.48	0.58
Uniform Delay, d1	40.0	32.0	27.2	40.3	32.5	32.9	49.9	29.3	26.5	47.6	25.9	27.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.6	0.8	0.0	5.8	0.6	1.7	1.1	0.3	0.2	11.6	0.2	1.6
Delay (s)	47.6	32.8	27.2	46.2	33.1	34.6	51.0	29.5	26.7	59.1	26.1	29.3
Level of Service	D	C	C	D	C	C	D	C	C	E	C	C
Approach Delay (s)		38.2			37.3			29.1			30.7	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	34.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	104.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



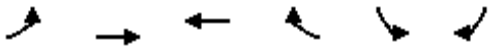
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1264	1397	89	0	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0		5.0
Lane Util. Factor		0.91	0.91	1.00		1.00
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		5085	5085	1583		1583
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		5085	5085	1583		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1331	1471	94	0	165
RTOR Reduction (vph)	0	0	0	42	0	130
Lane Group Flow (vph)	0	1331	1471	52	0	35
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)		24.1	24.1	24.1		9.1
Effective Green, g (s)		24.1	24.1	24.1		9.1
Actuated g/C Ratio		0.56	0.56	0.56		0.21
Clearance Time (s)		5.0	5.0	5.0		5.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		2837	2837	883		333
v/s Ratio Prot		0.26	c0.29			
v/s Ratio Perm				0.03		c0.02
v/c Ratio		0.47	0.52	0.06		0.10
Uniform Delay, d1		5.7	5.9	4.4		13.8
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.2	0.0		0.1
Delay (s)		5.8	6.1	4.4		13.9
Level of Service		A	A	A		B
Approach Delay (s)		5.8	6.0		13.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



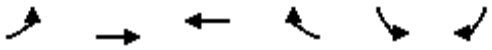
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	1127	114	22	1326	198	135	112	10	105	68	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	1186	120	23	1396	208	142	118	11	111	72	26
RTOR Reduction (vph)	0	0	70	0	0	121	0	0	9	0	0	21
Lane Group Flow (vph)	24	1186	50	23	1396	87	142	118	2	111	72	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.3	26.6	26.6	1.3	26.6	26.6	6.3	12.0	12.0	6.3	12.0	12.0
Effective Green, g (s)	2.3	28.6	27.6	2.3	28.6	27.6	7.3	13.0	13.0	7.3	13.0	13.0
Actuated g/C Ratio	0.03	0.43	0.42	0.03	0.43	0.42	0.11	0.20	0.20	0.11	0.20	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	61	2197	660	61	2197	660	195	366	311	195	366	311
v/s Ratio Prot	c0.01	0.23		0.01	c0.27		c0.08	c0.06		0.06	0.04	
v/s Ratio Perm			0.03			0.05			0.00			0.00
v/c Ratio	0.39	0.54	0.08	0.38	0.64	0.13	0.73	0.32	0.01	0.57	0.20	0.02
Uniform Delay, d1	31.3	13.9	11.6	31.2	14.7	11.9	28.5	22.8	21.4	28.0	22.2	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.3	0.0	3.9	0.6	0.1	12.7	0.5	0.0	3.8	0.3	0.0
Delay (s)	35.4	14.2	11.7	35.1	15.3	12.0	41.2	23.3	21.4	31.7	22.5	21.5
Level of Service	D	B	B	D	B	B	D	C	C	C	C	C
Approach Delay (s)		14.3			15.2			32.6			27.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	66.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



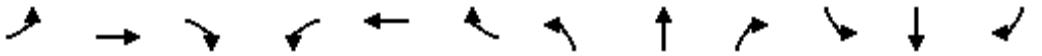
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	151	1092	1283	122	207	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	159	1149	1351	128	218	277
RTOR Reduction (vph)	0	0	0	81	0	209
Lane Group Flow (vph)	159	1149	1351	47	218	68
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.7	33.7	21.0	21.0	14.1	14.1
Effective Green, g (s)	7.7	33.7	21.0	21.0	14.1	14.1
Actuated g/C Ratio	0.13	0.58	0.36	0.36	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	2965	1847	575	432	386
v/s Ratio Prot	c0.09	0.23	c0.27		c0.12	
v/s Ratio Perm				0.03		0.04
v/c Ratio	0.67	0.39	0.73	0.08	0.50	0.18
Uniform Delay, d1	23.9	6.5	16.0	12.1	18.8	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	0.1	1.5	0.1	0.9	0.2
Delay (s)	31.2	6.6	17.5	12.1	19.8	17.5
Level of Service	C	A	B	B	B	B
Approach Delay (s)		9.6	17.0		18.5	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	82	1217	1397	74	70	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	86	1281	1471	78	74	9
RTOR Reduction (vph)	0	0	0	43	0	7
Lane Group Flow (vph)	86	1281	1471	35	74	2
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.7	32.9	24.2	24.2	10.4	10.4
Effective Green, g (s)	3.7	32.9	24.2	24.2	10.4	10.4
Actuated g/C Ratio	0.07	0.62	0.45	0.45	0.20	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	123	3139	2309	719	345	309
v/s Ratio Prot	c0.05	0.25	c0.29		c0.04	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.70	0.41	0.64	0.05	0.21	0.01
Uniform Delay, d1	24.3	5.2	11.2	8.1	18.0	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.9	0.1	0.6	0.0	0.3	0.0
Delay (s)	40.2	5.3	11.8	8.2	18.3	17.3
Level of Service	D	A	B	A	B	B
Approach Delay (s)		7.5	11.6		18.2	
Approach LOS		A	B		B	

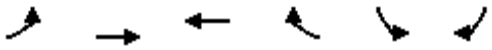
Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	222	1022	123	539	1305	269	162	841	434	403	1000	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	5.0	3.0	3.7	3.7	3.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4988	1583	3433	4988	1553	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	234	1076	129	567	1374	283	171	885	457	424	1053	42
RTOR Reduction (vph)	0	0	95	0	0	139	0	0	277	0	0	19
Lane Group Flow (vph)	234	1076	34	567	1374	144	171	885	180	424	1053	23
Heavy Vehicles (%)	2%	4%	2%	2%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.5	31.7	31.7	24.4	44.6	44.6	8.8	30.0	30.0	15.1	36.3	36.3
Effective Green, g (s)	12.5	34.7	32.7	26.4	46.9	46.9	10.8	32.0	32.0	16.1	38.3	38.3
Actuated g/C Ratio	0.10	0.28	0.27	0.21	0.38	0.38	0.09	0.26	0.26	0.13	0.31	0.31
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	4.7	4.7	3.0	4.8	4.8	3.0	4.8	4.8	3.0	4.7	4.7
Lane Grp Cap (vph)	348	1405	420	736	1899	591	301	1321	411	449	1581	492
v/s Ratio Prot	0.07	c0.22		c0.17	0.28		0.05	0.17		c0.12	c0.21	
v/s Ratio Perm			0.02			0.09			0.11			0.01
v/c Ratio	0.67	0.77	0.08	0.77	0.72	0.24	0.57	0.67	0.44	0.94	0.67	0.05
Uniform Delay, d1	53.4	40.5	34.0	45.5	32.6	26.0	54.0	40.9	38.1	53.1	36.9	29.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	2.9	0.2	5.0	1.7	0.4	2.5	1.7	1.5	28.7	1.3	0.1
Delay (s)	58.4	43.5	34.1	50.5	34.3	26.5	56.4	42.5	39.5	81.8	38.2	29.8
Level of Service	E	D	C	D	C	C	E	D	D	F	D	C
Approach Delay (s)		45.1			37.4			43.2			50.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	43.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	123.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

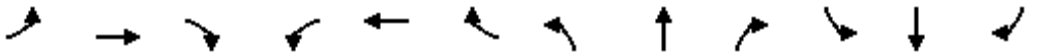
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	365	1408	1396	74	55	613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3539	1478	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1478	1770	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	384	1482	1469	78	58	645
RTOR Reduction (vph)	0	0	0	40	0	160
Lane Group Flow (vph)	384	1482	1469	38	58	485
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	8.8	39.1	26.3	26.3	4.6	13.4
Effective Green, g (s)	9.8	42.1	29.3	29.3	5.6	15.4
Actuated g/C Ratio	0.16	0.69	0.48	0.48	0.09	0.25
Clearance Time (s)	4.0	6.0	6.0	6.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1	4.1	4.1	2.0	2.0
Lane Grp Cap (vph)	553	2451	1705	712	163	843
v/s Ratio Prot	0.11	0.42	c0.42		0.03	c0.09
v/s Ratio Perm				0.03		0.08
v/c Ratio	0.69	0.60	0.86	0.05	0.36	0.58
Uniform Delay, d1	24.1	4.9	14.0	8.4	25.9	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.5	4.9	0.0	0.5	0.6
Delay (s)	27.1	5.5	18.9	8.4	26.4	20.4
Level of Service	C	A	B	A	C	C
Approach Delay (s)		9.9	18.4		20.9	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	13.1
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

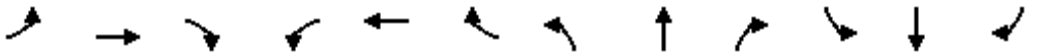
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	461	897	92	484	960	226	141	0	184	163	0	487
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0	5.0	2.0	4.0	3.0	2.0		3.0	3.7		2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.99	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1527	1770	3539	1562	1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1527	1770	3539	1562	1770		1583	1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	485	944	97	509	1011	238	148	0	194	172	0	513
RTOR Reduction (vph)	0	0	62	0	0	0	0	0	167	0	0	0
Lane Group Flow (vph)	485	944	35	509	1011	238	148	0	27	172	0	513
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot		Perm	Prot		Free	Prot		custom	Prot		Free
Protected Phases	7	4		3	8		5			6		
Permitted Phases			4			Free			5			Free
Actuated Green, G (s)	31.8	32.4	32.4	33.5	34.1	110.2	14.3		14.3	10.3		110.2
Effective Green, g (s)	33.8	34.4	33.4	35.5	36.1	110.2	16.3		15.3	12.3		110.2
Actuated g/C Ratio	0.31	0.31	0.30	0.32	0.33	1.00	0.15		0.14	0.11		1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0		4.0	5.7		
Vehicle Extension (s)	2.0	4.8	4.8	2.0	4.8		2.0		2.0	2.0		
Lane Grp Cap (vph)	543	1105	463	570	1159	1562	262		220	198		1583
v/s Ratio Prot	c0.27	0.27		c0.29	0.29		c0.08			c0.10		
v/s Ratio Perm			0.02			0.15			0.02			c0.32
v/c Ratio	0.89	0.85	0.08	0.89	0.87	0.15	0.56		0.12	0.87		0.32
Uniform Delay, d1	36.5	35.5	27.4	35.5	34.9	0.0	43.7		41.6	48.2		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	16.5	7.2	0.1	15.9	8.0	0.2	1.7		0.1	29.9		0.5
Delay (s)	53.0	42.7	27.5	51.4	42.9	0.2	45.3		41.7	78.0		0.5
Level of Service	D	D	C	D	D	A	D		D	E		A
Approach Delay (s)		45.0			39.6			43.2			20.0	
Approach LOS		D			D			D			C	

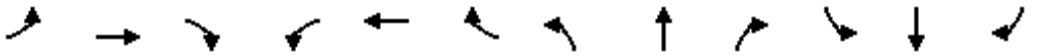
Intersection Summary			
HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.2	Sum of lost time (s)	9.7
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	330	518	91	542	131	805	1630	93	149	1736	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	258	347	545	96	571	138	847	1716	98	157	1827	280
RTOR Reduction (vph)	0	0	366	0	0	99	0	0	48	0	0	0
Lane Group Flow (vph)	258	347	179	96	571	39	847	1716	50	157	1827	280
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	10.7	19.9	19.9	7.8	18.0	18.0	32.6	58.2	58.2	14.1	39.7	120.0
Effective Green, g (s)	11.7	22.9	22.9	8.8	20.5	20.5	33.6	61.2	61.2	15.1	42.7	120.0
Actuated g/C Ratio	0.10	0.19	0.19	0.07	0.17	0.17	0.28	0.51	0.51	0.13	0.36	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	335	675	302	130	869	270	961	2593	807	223	2280	1583
v/s Ratio Prot	c0.08	0.10		0.05	c0.11		c0.25	0.34		0.09	c0.29	
v/s Ratio Perm			0.11			0.02			0.03			c0.18
v/c Ratio	0.77	0.51	0.59	0.74	0.66	0.15	0.88	0.66	0.06	0.70	0.80	0.18
Uniform Delay, d1	52.8	43.6	44.3	54.5	46.5	42.3	41.3	21.7	14.9	50.3	34.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.6	1.1	4.2	17.1	2.4	0.5	9.5	1.3	0.1	8.0	2.3	0.2
Delay (s)	62.4	44.7	48.5	71.5	48.9	42.8	50.8	23.1	15.0	58.3	37.1	0.2
Level of Service	E	D	D	E	D	D	D	C	B	E	D	A
Approach Delay (s)		50.4			50.6			31.6			34.0	
Approach LOS		D			D			C			C	

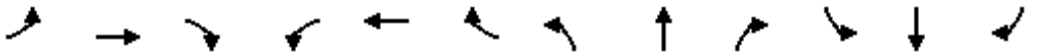
Intersection Summary			
HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	482	260	357	570	588	211	808	341	420	1233	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0	5.0	3.0	2.6	5.0	5.0	2.6	3.0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1562	3433	1863	1559	1770	3539	1566	3433	3539	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1562	3433	1863	1559	1770	3539	1566	3433	3539	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	507	274	376	600	619	222	851	359	442	1298	6
RTOR Reduction (vph)	0	0	0	0	0	97	0	0	44	0	0	0
Lane Group Flow (vph)	26	507	274	376	600	522	222	851	315	442	1298	6
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		pm+ov	Prot		pm+ov	Prot		Free
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			Free			8			2			Free
Actuated Green, G (s)	5.4	31.6	111.6	13.0	39.2	57.1	12.0	29.1	42.1	17.9	36.0	111.6
Effective Green, g (s)	6.4	31.6	111.6	13.0	39.2	57.1	13.0	32.5	42.1	17.9	39.4	111.6
Actuated g/C Ratio	0.06	0.28	1.00	0.12	0.35	0.51	0.12	0.29	0.38	0.16	0.35	1.00
Clearance Time (s)	4.0	4.0		5.0	5.0	5.0	4.0	6.0	5.0	5.0	6.0	
Vehicle Extension (s)	2.0	2.0		3.0	3.0	3.0	2.0	3.9	3.0	3.0	3.9	
Lane Grp Cap (vph)	102	528	1562	400	654	868	206	1031	591	551	1249	1548
v/s Ratio Prot	0.01	c0.27		c0.11	0.32	0.10	c0.13	0.24	0.06	0.13	c0.37	
v/s Ratio Perm			0.18			0.24			0.14			0.00
v/c Ratio	0.25	0.96	0.18	0.94	0.92	0.60	1.08	0.83	0.53	0.80	1.04	0.00
Uniform Delay, d1	50.3	39.4	0.0	48.9	34.7	19.2	49.3	36.9	27.1	45.1	36.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	29.1	0.2	29.8	17.7	1.2	84.9	5.7	0.9	8.2	36.2	0.0
Delay (s)	50.8	68.5	0.2	78.7	52.4	20.4	134.2	42.6	28.0	53.4	72.3	0.0
Level of Service	D	E	A	E	D	C	F	D	C	D	E	A
Approach Delay (s)		44.7			46.2			53.2			67.3	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	54.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	111.6	Sum of lost time (s)	14.6
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

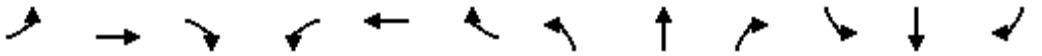
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	753	16	45	943	590	1	635	36	589	1017	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	4.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1555	3433	3539	1562	3433	3539	1562	3433	3539	1551
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1555	3433	3539	1562	3433	3539	1562	3433	3539	1551
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	793	17	47	993	621	1	668	38	620	1071	58
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	24
Lane Group Flow (vph)	58	793	6	47	993	621	1	668	38	620	1071	34
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	7	3		4	8		5	2		1	6	
Permitted Phases			3			Free			Free			6
Actuated Green, G (s)	7.4	28.8	28.8	14.6	35.0	114.2	1.5	30.9	114.2	21.9	51.3	51.3
Effective Green, g (s)	8.4	29.8	29.8	15.6	36.0	114.2	2.5	31.9	114.2	22.9	52.3	52.3
Actuated g/C Ratio	0.07	0.26	0.26	0.14	0.32	1.00	0.02	0.28	1.00	0.20	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	5.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	3.0		2.0	4.8		2.0	4.8	4.8
Lane Grp Cap (vph)	253	923	406	469	1116	1562	75	989	1562	688	1621	710
v/s Ratio Prot	0.02	c0.22		0.01	c0.28		0.00	0.19		c0.18	c0.30	
v/s Ratio Perm			0.00			0.40			0.02			0.02
v/c Ratio	0.23	0.86	0.01	0.10	0.89	0.40	0.01	0.68	0.02	0.90	0.66	0.05
Uniform Delay, d1	49.8	40.2	31.3	43.2	37.2	0.0	54.6	36.6	0.0	44.5	24.1	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	7.7	0.0	0.0	8.9	0.8	0.0	2.3	0.0	14.7	1.3	0.1
Delay (s)	50.0	47.9	31.3	43.2	46.1	0.8	54.7	38.9	0.0	59.2	25.4	17.2
Level of Service	D	D	C	D	D	A	D	D	A	E	C	B
Approach Delay (s)		47.8			29.1			36.8			37.1	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	114.2	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



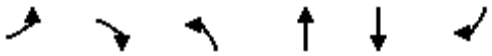
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	4	98	33	7	2	177	1474	22	0	1335	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.3	2.3		2.1		3.0	3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00		0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85		1.00	
Flt Protected		0.97	1.00		0.96		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1800	1478		1780		1770	3539	1583		3539	
Flt Permitted		0.97	1.00		0.96		0.95	1.00	1.00		1.00	
Satd. Flow (perm)		1800	1478		1780		1770	3539	1583		3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	4	103	35	7	2	186	1552	23	0	1405	0
RTOR Reduction (vph)	0	0	89	0	2	0	0	0	4	0	0	0
Lane Group Flow (vph)	0	13	14	0	42	0	186	1552	19	0	1405	0
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)		5.5	5.5		1.4		3.1	33.5	33.5		26.4	
Effective Green, g (s)		7.4	7.4		3.3		4.1	36.5	36.5		29.4	
Actuated g/C Ratio		0.14	0.14		0.06		0.08	0.67	0.67		0.54	
Clearance Time (s)		4.2	4.2		4.0		4.0	6.0	6.0		6.0	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.1	4.1		4.1	
Lane Grp Cap (vph)		244	200		108		133	2366	1058		1906	
v/s Ratio Prot		0.01			c0.02		c0.11	0.44			c0.40	
v/s Ratio Perm			c0.01						0.01			
v/c Ratio		0.05	0.07		0.39		1.40	0.66	0.02		0.74	
Uniform Delay, d1		20.5	20.6		24.7		25.2	5.3	3.0		9.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.0	0.1		0.8		218.3	0.8	0.0		1.6	
Delay (s)		20.6	20.7		25.5		243.6	6.1	3.0		11.3	
Level of Service		C	C		C		F	A	A		B	
Approach Delay (s)		20.6			25.5			31.1			11.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	10.4
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

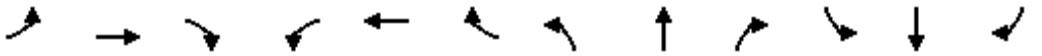
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	65	78	2119	163	81	1944
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	82	2231	172	85	2046
RTOR Reduction (vph)	0	74	0	44	0	0
Lane Group Flow (vph)	68	8	2231	128	85	2046
Turn Type		Perm		Perm	Prot	
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	11.7	11.7	83.7	83.7	8.5	96.2
Effective Green, g (s)	11.7	11.7	83.7	83.7	8.5	96.2
Actuated g/C Ratio	0.10	0.10	0.70	0.70	0.07	0.80
Clearance Time (s)	5.7	5.7	6.4	6.4	4.0	6.4
Vehicle Extension (s)	2.5	2.5	3.5	3.5	2.0	3.7
Lane Grp Cap (vph)	173	154	3547	1104	125	4076
v/s Ratio Prot	c0.04		c0.44		c0.05	0.40
v/s Ratio Perm		0.01		0.08		
v/c Ratio	0.39	0.05	0.63	0.12	0.68	0.50
Uniform Delay, d1	50.8	49.1	9.8	6.0	54.4	3.9
Progression Factor	1.00	1.00	0.70	0.81	1.17	1.08
Incremental Delay, d2	1.1	0.1	0.3	0.0	9.9	0.4
Delay (s)	51.9	49.2	7.1	4.9	73.3	4.7
Level of Service	D	D	A	A	E	A
Approach Delay (s)	50.4		7.0			7.4
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



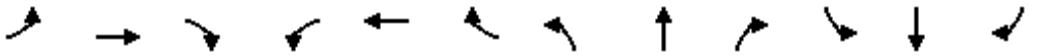
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	312	233	107	2010	1812	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	5085	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	328	245	113	2116	1907	249
RTOR Reduction (vph)	0	209	0	0	0	46
Lane Group Flow (vph)	328	36	113	2116	1907	203
Turn Type		Perm	Prot			Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Actuated Green, G (s)	17.6	17.6	11.8	91.0	74.9	74.9
Effective Green, g (s)	17.6	17.6	11.8	91.0	74.9	74.9
Actuated g/C Ratio	0.15	0.15	0.10	0.76	0.62	0.62
Clearance Time (s)	5.7	5.7	4.0	5.7	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.1	4.1	4.1
Lane Grp Cap (vph)	504	232	338	3856	3174	988
v/s Ratio Prot	c0.10		0.03	c0.42	c0.38	
v/s Ratio Perm		0.02				0.13
v/c Ratio	0.65	0.15	0.33	0.55	0.60	0.21
Uniform Delay, d1	48.3	44.7	50.4	6.0	13.6	9.7
Progression Factor	1.00	1.00	1.21	0.51	0.25	0.08
Incremental Delay, d2	2.3	0.1	0.2	0.5	0.8	0.4
Delay (s)	50.6	44.8	61.0	3.5	4.2	1.2
Level of Service	D	D	E	A	A	A
Approach Delay (s)	48.1			6.4	3.9	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



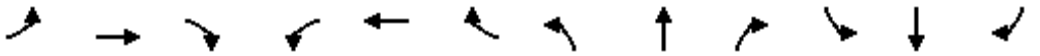
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	252	31	227	7	20	14	186	1873	8	15	1983	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1703	1583	1770	1746		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1703	1583	1770	1746		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	265	33	239	7	21	15	196	1972	8	16	2087	72
RTOR Reduction (vph)	0	0	214	0	14	0	0	0	2	0	0	19
Lane Group Flow (vph)	148	150	25	7	22	0	196	1972	6	16	2087	53
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	12.8	12.8	12.8	6.0	6.0		15.3	79.5	79.5	2.0	66.2	66.2
Effective Green, g (s)	12.8	12.8	12.8	6.0	6.0		15.3	79.5	79.5	2.0	66.2	66.2
Actuated g/C Ratio	0.11	0.11	0.11	0.05	0.05		0.13	0.66	0.66	0.02	0.55	0.55
Clearance Time (s)	6.0	6.0	6.0	4.0	4.0		4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	3.8	3.8	3.8	2.5	2.5		2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	179	182	169	89	87		226	3369	1049	30	2805	873
v/s Ratio Prot	0.09	c0.09		0.00	c0.01		c0.11	0.39		0.01	c0.41	
v/s Ratio Perm			0.02						0.00			0.03
v/c Ratio	0.83	0.82	0.15	0.08	0.25		0.87	0.59	0.01	0.53	0.74	0.06
Uniform Delay, d1	52.5	52.5	48.7	54.4	54.8		51.4	11.2	6.9	58.5	20.5	12.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.85	1.29	0.56	1.20	0.31	0.24
Incremental Delay, d2	26.6	25.9	0.5	0.3	1.1		23.0	0.6	0.0	7.3	1.0	0.0
Delay (s)	79.1	78.4	49.2	54.6	55.9		66.8	15.0	3.8	77.4	7.3	3.1
Level of Service	E	E	D	D	E		E	B	A	E	A	A
Approach Delay (s)		65.6			55.7			19.6			7.7	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



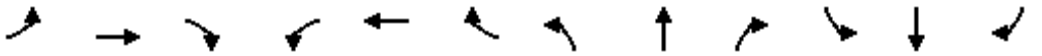
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	202	93	36	97	200	19	1701	139	343	1828	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	5.7	4.0	4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5070	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3539	1583	1770	5085	1583	3433	5070	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	71	213	98	38	102	211	20	1791	146	361	1924	39
RTOR Reduction (vph)	0	0	81	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	71	213	17	38	102	211	20	1791	146	361	1962	0
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			
Actuated Green, G (s)	7.4	20.4	20.4	3.6	15.8	120.0	2.0	61.0	120.0	16.4	75.4	
Effective Green, g (s)	7.4	20.4	20.4	3.6	15.8	120.0	2.0	61.0	120.0	16.4	75.4	
Actuated g/C Ratio	0.06	0.17	0.17	0.03	0.13	1.00	0.02	0.51	1.00	0.14	0.63	
Clearance Time (s)	4.0	4.9	4.9	4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	5.6	5.6	2.0	4.3		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	109	317	269	53	466	1583	30	2585	1583	469	3186	
v/s Ratio Prot	c0.04	c0.11		0.02	0.03		0.01	c0.35		c0.11	0.39	
v/s Ratio Perm			0.01			0.13			0.09			
v/c Ratio	0.65	0.67	0.06	0.72	0.22	0.13	0.67	0.69	0.09	0.77	0.62	
Uniform Delay, d1	55.0	46.7	41.8	57.7	46.6	0.0	58.7	22.4	0.0	50.0	13.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.12	0.37	
Incremental Delay, d2	10.1	7.9	0.2	31.7	0.4	0.2	35.7	0.9	0.1	4.7	0.6	
Delay (s)	65.2	54.6	42.0	89.4	47.0	0.2	94.3	23.3	0.1	60.9	5.6	
Level of Service	E	D	D	F	D	A	F	C	A	E	A	
Approach Delay (s)		53.3			23.4			22.3			14.2	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	3	8	22	3	171	97	922	11	92	1147	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1783	1583		1784	1583	1770	3533		1770	3536	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1783	1583		1784	1583	1770	3533		1770	3536	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	3	8	23	3	180	102	971	12	97	1207	7
RTOR Reduction (vph)	0	0	7	0	0	143	0	1	0	0	1	0
Lane Group Flow (vph)	0	27	1	0	26	37	102	982	0	97	1213	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6						
Actuated Green, G (s)		5.5	5.5		15.8	15.8	7.2	37.6		6.1	36.5	
Effective Green, g (s)		6.5	6.5		16.8	16.8	8.2	40.6		7.1	39.5	
Actuated g/C Ratio		0.08	0.08		0.20	0.20	0.10	0.49		0.09	0.48	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		140	124		362	322	176	1734		152	1689	
v/s Ratio Prot		c0.02			0.01		0.06	0.28		c0.05	c0.34	
v/s Ratio Perm			0.00			c0.02						
v/c Ratio		0.19	0.01		0.07	0.11	0.58	0.57		0.64	0.72	
Uniform Delay, d1		35.6	35.1		26.6	26.9	35.6	14.8		36.6	17.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.0	0.1	2.9	0.6		6.3	1.7	
Delay (s)		35.9	35.1		26.7	26.9	38.5	15.5		42.9	18.9	
Level of Service		D	D		C	C	D	B		D	B	
Approach Delay (s)		35.7			26.9			17.6			20.7	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	11.7
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

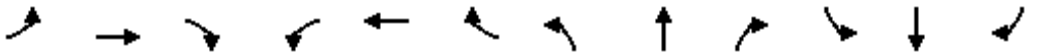


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	521	626	178	505	110	326	587	93	650	720	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	13	12	10	13	12	10	13	12	10
Grade (%)		-1%			-1%			-1%			1%	
Total Lost time (s)	3.0	2.7	3.0	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1856	3592	1486	1856	3592	1471	3601	3592	1476	3565	5110	1462
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1856	3592	1486	1856	3592	1471	3601	3592	1476	3565	5110	1462
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	548	659	187	532	116	343	618	98	684	758	29
RTOR Reduction (vph)	0	0	40	0	0	78	0	0	68	0	0	21
Lane Group Flow (vph)	34	548	619	187	532	38	343	618	30	684	758	8
Confl. Peds. (#/hr)			5			5			5			5
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.7	20.9	43.1	10.1	25.3	25.3	22.2	26.8	26.8	20.2	24.8	24.8
Effective Green, g (s)	6.7	23.9	45.1	11.1	28.3	28.3	23.2	29.8	29.8	21.2	27.8	27.8
Actuated g/C Ratio	0.07	0.25	0.46	0.11	0.29	0.29	0.24	0.31	0.31	0.22	0.29	0.29
Clearance Time (s)	4.0	5.7	4.0	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.5	2.0	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Lane Grp Cap (vph)	128	881	688	212	1044	427	858	1099	452	776	1459	417
v/s Ratio Prot	0.02	0.15	c0.21	c0.10	0.15		0.10	c0.17		0.19	0.15	
v/s Ratio Perm			0.20			0.03			0.02			0.01
v/c Ratio	0.27	0.62	0.90	0.88	0.51	0.09	0.40	0.56	0.07	0.88	0.52	0.02
Uniform Delay, d1	43.0	32.7	24.1	42.5	28.8	25.2	31.2	28.3	23.9	36.9	29.2	25.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.7	14.6	31.3	0.7	0.2	0.1	0.9	0.1	11.2	0.5	0.0
Delay (s)	43.4	34.5	38.7	73.8	29.4	25.3	31.3	29.3	24.1	48.1	29.7	25.0
Level of Service	D	C	D	E	C	C	C	C	C	D	C	C
Approach Delay (s)		36.9			38.8			29.5			38.2	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	36.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	97.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1256	87	109	897	62	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	3.0	1.3	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1322	92	115	944	65	27
RTOR Reduction (vph)	0	41	0	0	0	23
Lane Group Flow (vph)	1322	51	115	944	65	4
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	30.9	30.9	6.0	42.6	7.1	7.1
Effective Green, g (s)	33.6	31.9	7.0	45.3	8.1	8.1
Actuated g/C Ratio	0.58	0.55	0.12	0.79	0.14	0.14
Clearance Time (s)	5.7	5.7	4.0	4.0	4.0	4.0
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	2061	875	215	2778	248	222
v/s Ratio Prot	c0.37		c0.06	0.27	c0.04	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.64	0.06	0.53	0.34	0.26	0.02
Uniform Delay, d1	8.0	6.0	23.8	1.8	22.1	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	1.3	0.1	0.2	0.0
Delay (s)	8.9	6.0	25.1	1.9	22.3	21.4
Level of Service	A	A	C	A	C	C
Approach Delay (s)	8.7			4.5	22.1	
Approach LOS	A			A	C	

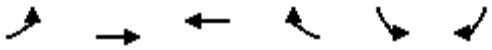
Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	127	428	713	58	208	86	665	1093	59	238	1761	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	1.3	3.0	2.6	1.3	3.0	3.0	1.0	3.0	3.0	1.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1562	3433	3539	1562	3433	5085	1562	3433	5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	134	451	751	61	219	91	700	1151	62	251	1854	94
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	134	451	751	61	219	91	700	1151	62	251	1854	94
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.0	24.6	130.0	8.0	24.0	130.0	31.5	65.7	130.0	12.0	46.2	130.0
Effective Green, g (s)	10.0	27.3	130.0	9.0	26.7	130.0	32.5	68.7	130.0	13.0	49.2	130.0
Actuated g/C Ratio	0.08	0.21	1.00	0.07	0.21	1.00	0.25	0.53	1.00	0.10	0.38	1.00
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.1	
Lane Grp Cap (vph)	264	743	1562	238	727	1562	858	2687	1562	343	1924	1562
v/s Ratio Prot	0.04	c0.13		0.02	0.06		c0.20	0.23		0.07	c0.36	
v/s Ratio Perm			c0.48			0.06			0.04			0.06
v/c Ratio	0.51	0.61	0.48	0.26	0.30	0.06	0.82	0.43	0.04	0.73	0.96	0.06
Uniform Delay, d1	57.6	46.5	0.0	57.3	43.7	0.0	45.9	18.7	0.0	56.8	39.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.9	1.1	0.2	0.4	0.1	5.7	0.5	0.0	6.8	13.0	0.1
Delay (s)	58.2	48.3	1.1	57.5	44.2	0.1	51.7	19.2	0.0	63.6	52.6	0.1
Level of Service	E	D	A	E	D	A	D	B	A	E	D	A
Approach Delay (s)		22.8			35.5			30.4			51.6	
Approach LOS		C			D			C			D	

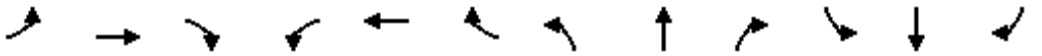
Intersection Summary			
HCM Average Control Delay	37.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	75	685	990	489	314	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	1.6	1.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	3471	3471	1510	1736	1534
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1736	3471	3471	1510	1736	1534
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	721	1042	515	331	138
RTOR Reduction (vph)	0	0	0	247	0	16
Lane Group Flow (vph)	79	721	1042	268	331	122
Confl. Peds. (#/hr)				5		5
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	3.4	29.4	34.0	34.0	17.6	21.0
Effective Green, g (s)	4.4	31.4	36.0	36.0	20.6	27.0
Actuated g/C Ratio	0.06	0.45	0.52	0.52	0.30	0.39
Clearance Time (s)	4.0	5.7	5.7	5.7	4.6	4.0
Vehicle Extension (s)	2.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	110	1573	1803	784	516	598
v/s Ratio Prot	c0.05	0.21	c0.30		c0.19	0.02
v/s Ratio Perm				0.18		0.06
v/c Ratio	0.72	0.46	0.58	0.34	0.64	0.20
Uniform Delay, d1	31.8	13.1	11.4	9.7	21.1	14.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.9	0.2	0.5	0.3	2.0	0.1
Delay (s)	48.8	13.3	11.9	10.0	23.2	14.1
Level of Service	D	B	B	A	C	B
Approach Delay (s)		16.8	11.3		20.5	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	8.3
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	623	16	9	1194	344	24	1	11	86	4	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			4%	
Total Lost time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1719	3426		1787	3438	1479	1787	1621			1695	1470
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	1719	3426		1787	3438	1479	1787	1621			1695	1470
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	128	656	17	9	1257	362	25	1	12	91	4	308
RTOR Reduction (vph)	0	2	0	0	0	203	0	11	0	0	0	0
Lane Group Flow (vph)	128	671	0	9	1257	159	25	2	0	0	95	308
Confl. Peds. (#/hr)			3			10						10
Heavy Vehicles (%)	5%	5%	1%	1%	5%	5%	1%	1%	1%	5%	1%	5%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	6.1	40.1		0.5	34.5	34.5	6.3	6.3			18.4	18.4
Effective Green, g (s)	7.1	42.1		1.5	36.5	36.5	7.3	7.3			19.4	19.4
Actuated g/C Ratio	0.09	0.51		0.02	0.44	0.44	0.09	0.09			0.23	0.23
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7	4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0			3.0	3.0
Lane Grp Cap (vph)	147	1738		32	1512	650	157	143			396	344
v/s Ratio Prot	c0.07	0.20		0.01	c0.37		c0.01	0.00			0.06	
v/s Ratio Perm						0.11						c0.21
v/c Ratio	0.87	0.39		0.28	0.83	0.24	0.16	0.01			0.24	0.90
Uniform Delay, d1	37.5	12.5		40.2	20.5	14.6	35.0	34.6			25.8	30.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	38.2	0.1		1.8	4.1	0.2	0.2	0.0			0.3	24.3
Delay (s)	75.7	12.7		42.0	24.6	14.8	35.2	34.6			26.1	55.1
Level of Service	E	B		D	C	B	D	C			C	E
Approach Delay (s)		22.7			22.5			35.0			48.3	
Approach LOS		C			C			C			D	

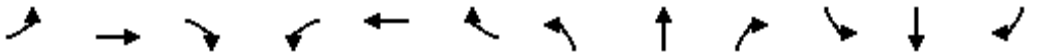
Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	83.0	Sum of lost time (s)	12.7
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	720	270	265	1479	108	667
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	3.0	4.0	3.0	3.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1562	1770	3539	1770	1575
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1562	1770	3539	1770	1575
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	758	284	279	1557	114	702
RTOR Reduction (vph)	0	149	0	0	0	12
Lane Group Flow (vph)	758	135	279	1557	114	690
Confl. Peds. (#/hr)		5				5
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	23.8	33.6	27.4	55.2	9.8	37.2
Effective Green, g (s)	25.8	35.6	28.4	57.2	10.8	39.2
Actuated g/C Ratio	0.34	0.47	0.38	0.76	0.14	0.52
Clearance Time (s)	6.0	4.0	4.0	6.0	4.0	4.0
Vehicle Extension (s)	3.0	2.0	2.0	2.7	2.0	2.0
Lane Grp Cap (vph)	1217	804	670	2699	255	886
v/s Ratio Prot	c0.21	0.02	0.16	0.44	0.06	c0.29
v/s Ratio Perm		0.06				0.14
v/c Ratio	0.62	0.17	0.42	0.58	0.45	0.78
Uniform Delay, d1	20.5	11.2	17.2	3.8	29.4	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0	0.2	0.9	0.5	4.0
Delay (s)	21.5	11.3	17.3	4.7	29.8	18.4
Level of Service	C	B	B	A	C	B
Approach Delay (s)	18.7			6.6	20.0	
Approach LOS	B			A	B	

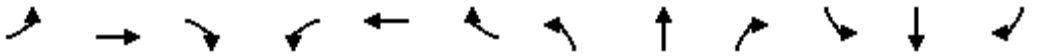
Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



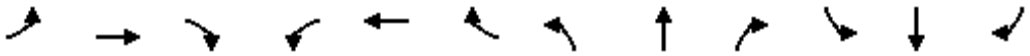
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	487	307	18	124	310	94	1	1513	11	102	1438	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.5	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	513	323	19	131	326	99	1	1593	12	107	1514	321
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	513	323	19	131	326	99	1	1593	12	107	1514	321
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	21.3	24.2	120.0	12.4	15.0	120.0	0.6	53.3	120.0	10.7	63.4	120.0
Effective Green, g (s)	22.3	26.7	120.0	13.4	17.5	120.0	1.6	55.8	120.0	11.7	65.9	120.0
Actuated g/C Ratio	0.19	0.22	1.00	0.11	0.15	1.00	0.01	0.46	1.00	0.10	0.55	1.00
Clearance Time (s)	4.0	5.7		4.0	6.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	4.3		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	638	787	1583	198	516	1583	24	2365	1583	173	2793	1583
v/s Ratio Prot	c0.15	0.09		0.07	c0.09		0.00	c0.31		c0.06	0.30	
v/s Ratio Perm			0.01			0.06			0.01			0.20
v/c Ratio	0.80	0.41	0.01	0.66	0.63	0.06	0.04	0.67	0.01	0.62	0.54	0.20
Uniform Delay, d1	46.8	39.9	0.0	51.1	48.2	0.0	58.4	25.0	0.0	52.0	17.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	0.6	0.0	6.3	2.8	0.1	0.3	1.6	0.0	4.6	0.8	0.3
Delay (s)	53.6	40.5	0.0	57.4	51.0	0.1	58.7	26.6	0.0	56.6	18.1	0.3
Level of Service	D	D	A	E	D	A	E	C	A	E	B	A
Approach Delay (s)		47.5			43.5			26.4			17.3	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.7
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



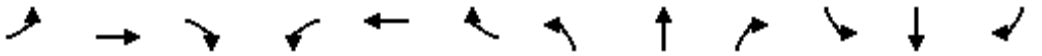
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	259	266	50	190	126	235	1417	90	108	1521	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9	3.0	3.0	3.9	3.0	3.0	3.2	3.0	3.0	3.2	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	273	280	53	200	133	247	1492	95	114	1601	76
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	61	273	280	53	200	133	247	1492	95	114	1601	76
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.2	14.6	120.0	6.1	14.5	120.0	20.3	67.4	120.0	11.8	58.9	120.0
Effective Green, g (s)	7.2	17.1	120.0	7.1	17.0	120.0	21.3	69.9	120.0	12.8	61.4	120.0
Actuated g/C Ratio	0.06	0.14	1.00	0.06	0.14	1.00	0.18	0.58	1.00	0.11	0.51	1.00
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	4.3		2.0	4.3	
Lane Grp Cap (vph)	106	504	1583	105	501	1583	314	2962	1583	189	2602	1583
v/s Ratio Prot	c0.03	c0.08		0.03	0.06		c0.14	0.29		0.06	c0.31	
v/s Ratio Perm			c0.18			0.08			0.06			0.05
v/c Ratio	0.58	0.54	0.18	0.50	0.40	0.08	0.79	0.50	0.06	0.60	0.62	0.05
Uniform Delay, d1	54.9	47.8	0.0	54.7	46.9	0.0	47.2	14.8	0.0	51.2	20.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	1.3	0.2	1.4	0.7	0.1	11.3	0.6	0.1	3.7	0.5	0.1
Delay (s)	59.5	49.1	0.2	56.1	47.5	0.1	58.5	15.4	0.1	54.9	21.4	0.1
Level of Service	E	D	A	E	D	A	E	B	A	D	C	A
Approach Delay (s)		27.9			32.4			20.4			22.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



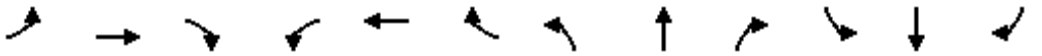
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	0	0	14	2	45	7	847	11	51	1199	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0				3.0	3.0	2.0	4.7		3.0	4.7	
Lane Util. Factor	1.00				1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00				1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770				1784	1583	1770	3532		1770	3534	
Flt Permitted	0.95				0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770				1784	1583	1770	3532		1770	3534	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	0	0	15	2	47	7	892	12	54	1262	12
RTOR Reduction (vph)	0	0	0	0	0	41	0	1	0	0	0	0
Lane Group Flow (vph)	18	0	0	0	17	6	7	903	0	54	1274	0
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						4						
Actuated Green, G (s)	1.3				6.5	6.5	0.9	34.8		3.7	38.6	
Effective Green, g (s)	2.3				7.5	7.5	1.9	35.8		4.7	39.6	
Actuated g/C Ratio	0.04				0.12	0.12	0.03	0.56		0.07	0.62	
Clearance Time (s)	4.0				4.0	4.0	3.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0				2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	64				209	186	53	1976		130	2187	
v/s Ratio Prot	c0.01				c0.01		0.00	0.26		c0.03	c0.36	
v/s Ratio Perm						0.00						
v/c Ratio	0.28				0.08	0.03	0.13	0.46		0.42	0.58	
Uniform Delay, d1	30.0				25.2	25.0	30.2	8.3		28.3	7.3	
Progression Factor	1.00				1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9				0.1	0.0	0.4	0.3		0.8	0.5	
Delay (s)	30.9				25.2	25.0	30.7	8.6		29.1	7.8	
Level of Service	C				C	C	C	A		C	A	
Approach Delay (s)		30.9			25.1			8.8			8.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



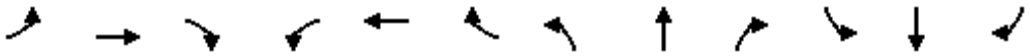
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	1166	52	50	740	8	40	2	27	13	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7		3.0	2.7	4.7		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.97	1.00
Satd. Flow (prot)	1770	3516		1770	3539	1583		1778	1583		1805	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.97	1.00
Satd. Flow (perm)	1770	3516		1770	3539	1583		1778	1583		1805	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	1227	55	53	779	8	42	2	28	14	8	3
RTOR Reduction (vph)	0	3	0	0	0	3	0	0	25	0	0	3
Lane Group Flow (vph)	45	1279	0	53	779	5	0	44	3	0	22	0
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases						8			5			6
Actuated Green, G (s)	1.9	36.0		2.7	36.8	36.8		5.9	5.9		4.7	4.7
Effective Green, g (s)	2.9	39.0		3.7	39.8	37.8		6.9	6.9		5.7	5.7
Actuated g/C Ratio	0.04	0.58		0.06	0.59	0.56		0.10	0.10		0.09	0.09
Clearance Time (s)	4.0	5.7		4.0	5.7	5.7		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	6.4		2.0	6.4	6.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	77	2047		98	2102	893		183	163		154	135
v/s Ratio Prot	0.03	c0.36		c0.03	0.22			c0.02			c0.01	
v/s Ratio Perm						0.00			0.00			0.00
v/c Ratio	0.58	0.63		0.54	0.37	0.01		0.24	0.02		0.14	0.00
Uniform Delay, d1	31.5	9.2		30.8	7.1	6.4		27.6	27.0		28.4	28.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	7.1	1.1		3.2	0.3	0.0		0.2	0.0		0.2	0.0
Delay (s)	38.6	10.3		34.1	7.4	6.4		27.9	27.0		28.5	28.0
Level of Service	D	B		C	A	A		C	C		C	C
Approach Delay (s)		11.3			9.1			27.6			28.5	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



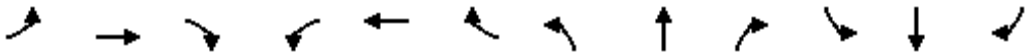
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	647	486	79	469	241	136	1169	37	304	1456	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.0	3.0	3.2	3.0	3.0	2.7	3.0	3.0	2.7	3.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	138	681	512	83	494	254	143	1231	39	320	1533	204
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	138	681	512	83	494	254	143	1231	39	320	1533	204
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.1	29.3	120.0	8.0	23.2	120.0	9.0	47.0	120.0	16.3	54.3	120.0
Effective Green, g (s)	15.1	31.8	120.0	9.0	25.7	120.0	10.0	50.0	120.0	17.3	57.3	120.0
Actuated g/C Ratio	0.13	0.27	1.00	0.08	0.21	1.00	0.08	0.42	1.00	0.14	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	223	938	1583	257	758	1583	286	2119	1583	495	2428	1583
v/s Ratio Prot	c0.08	c0.19		0.02	0.14		0.04	c0.24		0.09	c0.30	
v/s Ratio Perm			0.32			0.16			0.02			0.13
v/c Ratio	0.62	0.73	0.32	0.32	0.65	0.16	0.50	0.58	0.02	0.65	0.63	0.13
Uniform Delay, d1	49.7	40.1	0.0	52.6	43.1	0.0	52.6	26.9	0.0	48.5	23.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	2.8	0.5	0.7	2.0	0.2	1.4	0.4	0.0	2.9	1.3	0.2
Delay (s)	54.8	43.0	0.5	53.3	45.1	0.2	54.0	27.3	0.0	51.4	24.7	0.2
Level of Service	D	D	A	D	D	A	D	C	A	D	C	A
Approach Delay (s)		27.9			32.2			29.3			26.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	483	0	0	608	398	2	2	0	511	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9			3.9	3.9		3.0		3.0	3.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		0.95	0.95	
Frt		1.00			1.00	0.85		1.00		1.00	0.99	
Flt Protected		1.00			1.00	1.00		0.98		0.95	0.96	
Satd. Flow (prot)		3539			1863	1583		1817		1681	1670	
Flt Permitted		0.95			1.00	1.00		1.00		0.95	0.96	
Satd. Flow (perm)		3378			1863	1583		1863		1681	1670	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	508	0	0	640	419	2	2	0	538	0	24
RTOR Reduction (vph)	0	0	0	0	0	40	0	0	0	0	3	0
Lane Group Flow (vph)	0	509	0	0	640	379	0	4	0	285	274	0
Turn Type	Perm					pt+ov	Perm			Split		
Protected Phases		2			6	6 4		3		4	4	
Permitted Phases	2						3					
Actuated Green, G (s)		89.0			84.4	116.6		0.8		27.3	27.3	
Effective Green, g (s)		90.0			85.4	117.6		1.8		28.3	28.3	
Actuated g/C Ratio		0.69			0.66	0.90		0.01		0.22	0.22	
Clearance Time (s)		4.9			4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1			3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		2339			1224	1432		26		366	364	
v/s Ratio Prot					c0.34	0.24				c0.17	0.16	
v/s Ratio Perm		c0.15						c0.00				
v/c Ratio		0.22			0.52	0.26		0.15		0.78	0.75	
Uniform Delay, d1		7.2			11.7	0.8		63.3		47.9	47.6	
Progression Factor		1.00			0.88	0.07		1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.4	0.1		1.0		9.2	7.6	
Delay (s)		7.5			10.7	0.1		64.4		57.1	55.2	
Level of Service		A			B	A		E		E	E	
Approach Delay (s)		7.5			6.5			64.4			56.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

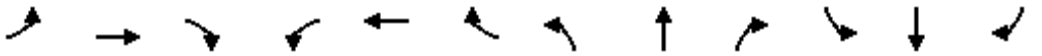


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	990	24	18	966	0	45	0	45	76	11	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9		2.0	3.9			3.0		3.0	3.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		1.00	1.00	
Frt		1.00		1.00	1.00			0.93		1.00	0.89	
Flt Protected		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)		3527		1770	3539			1695		1770	1661	
Flt Permitted		1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)		3527		1770	3539			1695		1770	1661	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1042	25	19	1017	0	47	0	47	80	12	31
RTOR Reduction (vph)	0	2	0	0	0	0	0	42	0	0	27	0
Lane Group Flow (vph)	0	1065	0	19	1017	0	0	52	0	80	16	0
Turn Type				Prot			Split			Split		
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)		33.8		1.6	38.4			6.4		7.3	7.3	
Effective Green, g (s)		34.8		2.6	39.4			7.4		8.3	8.3	
Actuated g/C Ratio		0.54		0.04	0.61			0.11		0.13	0.13	
Clearance Time (s)		4.9		3.0	4.9			4.0		4.0	4.0	
Vehicle Extension (s)		3.1		2.0	3.1			2.0		2.0	2.0	
Lane Grp Cap (vph)		1888		71	2145			193		226	212	
v/s Ratio Prot		c0.30		0.01	c0.29			c0.03		c0.05	0.01	
v/s Ratio Perm												
v/c Ratio		0.56		0.27	0.47			0.27		0.35	0.08	
Uniform Delay, d1		10.1		30.3	7.1			26.3		25.9	25.0	
Progression Factor		0.91		1.26	0.77			1.00		1.00	1.00	
Incremental Delay, d2		0.4		0.7	0.8			0.3		0.3	0.1	
Delay (s)		9.5		39.0	6.2			26.6		26.2	25.0	
Level of Service		A		D	A			C		C	C	
Approach Delay (s)		9.5			6.8			26.6			25.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

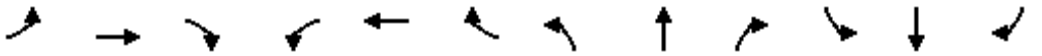
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1075	46	159	547	33	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.9		2.0	3.9	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3518		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3518		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1132	48	167	576	35	180
RTOR Reduction (vph)	4	0	0	0	0	160
Lane Group Flow (vph)	1176	0	167	576	35	20
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	37.4		9.6	50.0	6.1	6.1
Effective Green, g (s)	38.4		10.6	51.0	7.1	7.1
Actuated g/C Ratio	0.59		0.16	0.78	0.11	0.11
Clearance Time (s)	4.9		3.0	4.9	4.0	4.0
Vehicle Extension (s)	3.1		2.0	3.1	2.0	2.0
Lane Grp Cap (vph)	2078		289	2777	193	173
v/s Ratio Prot	c0.33		c0.09	0.16	c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.57		0.58	0.21	0.18	0.11
Uniform Delay, d1	8.2		25.1	1.8	26.3	26.1
Progression Factor	0.49		1.18	1.44	1.00	1.00
Incremental Delay, d2	0.3		1.2	0.1	0.2	0.1
Delay (s)	4.3		30.9	2.7	26.5	26.2
Level of Service	A		C	A	C	C
Approach Delay (s)	4.3			9.0	26.3	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



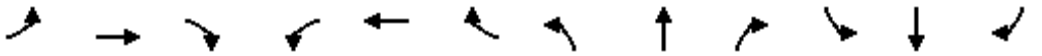
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	1155	4	13	1322	101	5	2	12	509	4	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.9		3.0	3.9			3.0		3.6	3.6	3.6
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3537		1770	3502			1678		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.95	1.00
Satd. Flow (perm)	1770	3537		1770	3502			1678		1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	103	1216	4	14	1392	106	5	2	13	536	4	95
RTOR Reduction (vph)	0	0	0	0	4	0	0	13	0	0	0	36
Lane Group Flow (vph)	103	1220	0	14	1494	0	0	7	0	268	272	59
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	10.6	83.4		1.6	74.4			2.4		25.1	25.1	25.1
Effective Green, g (s)	11.6	84.4		2.6	75.4			3.4		26.1	26.1	26.1
Actuated g/C Ratio	0.09	0.65		0.02	0.58			0.03		0.20	0.20	0.20
Clearance Time (s)	4.0	4.9		4.0	4.9			4.0		4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.5		2.0	3.3			2.0		2.5	2.5	2.5
Lane Grp Cap (vph)	158	2296		35	2031			44		337	339	318
v/s Ratio Prot	c0.06	0.34		0.01	c0.43			c0.00		0.16	c0.16	
v/s Ratio Perm												0.04
v/c Ratio	0.65	0.53		0.40	0.74			0.17		0.80	0.80	0.19
Uniform Delay, d1	57.2	12.2		62.9	20.0			61.9		49.4	49.5	43.1
Progression Factor	0.92	0.76		0.57	0.66			1.00		1.00	1.00	1.00
Incremental Delay, d2	6.1	0.7		1.2	0.7			0.7		11.8	12.5	0.2
Delay (s)	58.6	10.1		37.3	13.8			62.6		61.2	62.0	43.3
Level of Service	E	B		D	B			E		E	E	D
Approach Delay (s)		13.9			14.0			62.6			58.9	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



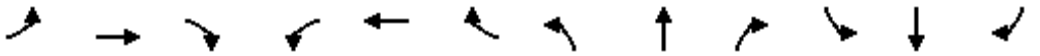
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	374	1313	18	109	1081	590	50	59	114	1001	12	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	394	1382	19	115	1138	621	53	62	120	1054	13	341
RTOR Reduction (vph)	0	1	0	0	0	201	0	0	95	0	0	197
Lane Group Flow (vph)	394	1400	0	115	1138	420	53	62	25	538	529	144
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	27.0	60.1		9.0	42.1	42.1	5.0	5.0	5.0	38.1	38.1	38.1
Effective Green, g (s)	27.0	60.1		9.0	42.1	42.1	5.0	5.0	5.0	38.1	38.1	38.1
Actuated g/C Ratio	0.21	0.46		0.07	0.32	0.32	0.04	0.04	0.04	0.29	0.29	0.29
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	3.3		2.0	3.5	3.5	2.0	2.0	2.0	2.3	2.3	2.3
Lane Grp Cap (vph)	368	1633		123	1146	513	68	72	61	493	494	464
v/s Ratio Prot	c0.22	0.40		0.06	c0.32		0.03	c0.03		c0.32	0.31	
v/s Ratio Perm						0.27			0.02			0.09
v/c Ratio	1.07	0.86		0.93	0.99	0.82	0.78	0.86	0.41	1.09	1.07	0.31
Uniform Delay, d1	51.5	31.1		60.2	43.8	40.4	62.0	62.2	61.1	46.0	46.0	35.7
Progression Factor	0.91	1.08		0.57	0.38	0.57	1.00	1.00	1.00	0.75	0.75	0.80
Incremental Delay, d2	63.3	5.2		11.8	6.5	1.0	39.0	59.4	1.6	62.7	55.7	0.2
Delay (s)	110.1	38.8		46.1	23.3	23.9	100.9	121.6	62.7	97.4	90.3	28.9
Level of Service	F	D		D	C	C	F	F	E	F	F	C
Approach Delay (s)		54.4			24.9			86.8			78.1	
Approach LOS		D			C			F			E	

Intersection Summary			
HCM Average Control Delay	51.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



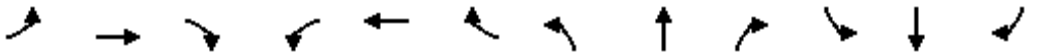
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1102	765	0	1619	1411	0	0	0	231	804	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.9		2.9	3.9				3.7	4.3	3.7
Lane Util. Factor		0.95	1.00		0.91	0.91				0.95	*0.90	1.00
Frt		1.00	0.85		0.97	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3539	1583		3274	1441				1681	1674	1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3539	1583		3274	1441				1681	1674	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1160	805	0	1704	1485	0	0	0	243	846	169
RTOR Reduction (vph)	0	0	0	0	20	421	0	0	0	0	0	0
Lane Group Flow (vph)	0	1160	805	0	2189	559	0	0	0	219	870	169
Turn Type			Perm			Perm				custom		custom
Protected Phases		2			6					4	4	4
Permitted Phases			2			6				4		6
Actuated Green, G (s)		68.1	68.1		68.1	68.1				51.7	51.7	119.8
Effective Green, g (s)		69.7	69.1		70.1	69.1				53.3	52.7	123.0
Actuated g/C Ratio		0.54	0.53		0.54	0.53				0.41	0.41	0.95
Clearance Time (s)		4.9	4.9		4.9	4.9				5.3	5.3	5.3
Vehicle Extension (s)		3.8	3.8		3.8	3.8				2.0	2.0	2.0
Lane Grp Cap (vph)		1897	841		1765	766				689	679	1543
v/s Ratio Prot		0.33			c0.67					0.13	c0.52	0.04
v/s Ratio Perm			0.51			0.39						0.06
v/c Ratio		0.61	0.96		1.24	0.73				0.32	1.28	0.11
Uniform Delay, d1		20.8	29.0		30.0	23.3				26.0	38.6	0.2
Progression Factor		0.60	0.66		0.77	1.24				1.00	1.00	1.00
Incremental Delay, d2		0.5	10.3		111.0	2.1				0.1	137.7	0.0
Delay (s)		13.0	29.5		134.1	30.9				26.1	176.3	0.2
Level of Service		B	C		F	C				C	F	A
Approach Delay (s)		19.7			102.4			0.0			126.5	
Approach LOS		B			F			A			F	

Intersection Summary			
HCM Average Control Delay	81.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



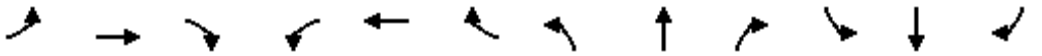
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	283	1050	0	0	2548	543	0	0	1185	0	0	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.9			2.9	2.9			3.0			2.0
Lane Util. Factor	1.00	0.86			0.86	0.86			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			4791	1362			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			4791	1362			1611			2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	298	1105	0	0	2682	572	0	0	1247	0	0	507
RTOR Reduction (vph)	0	0	0	0	3	70	0	0	0	0	0	6
Lane Group Flow (vph)	298	1105	0	0	2736	445	0	0	1247	0	0	501
Turn Type	Prot					Perm			Free			Over
Protected Phases	5	2			6							5
Permitted Phases						6			Free			
Actuated Green, G (s)	13.2	65.0			42.9	42.9			65.0			13.2
Effective Green, g (s)	15.2	65.0			44.9	44.9			65.0			15.2
Actuated g/C Ratio	0.23	1.00			0.69	0.69			1.00			0.23
Clearance Time (s)	4.0	4.9			4.9	4.9						4.0
Vehicle Extension (s)	2.0	3.9			3.8	3.8						2.0
Lane Grp Cap (vph)	414	6408			3309	941			1611			652
v/s Ratio Prot	0.17	0.17			c0.57							0.18
v/s Ratio Perm						0.33			c0.77			
v/c Ratio	0.72	0.17			0.83	0.47			0.77			0.77
Uniform Delay, d1	22.9	0.0			7.2	4.6			0.0			23.3
Progression Factor	1.65	1.00			0.92	0.98			1.00			1.00
Incremental Delay, d2	4.1	0.0			0.9	0.6			3.7			4.9
Delay (s)	42.0	0.0			7.5	5.1			3.7			28.1
Level of Service	D	A			A	A			A			C
Approach Delay (s)		8.9			7.2			3.7			28.1	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	2.9
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	342	1741	455	411	1781	209	337	941	252	232	925	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	11	12	12	11	12	12
Total Lost time (s)	3.0	3.0	3.0	5.0	3.0	3.0	3.0	2.7	3.0	3.0	2.7	4.7
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3319	5085	1560	3319	5085	1560	3319	5085	1560	3319	5085	1538
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	360	1833	479	433	1875	220	355	991	265	244	974	67
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	54
Lane Group Flow (vph)	360	1833	479	433	1875	220	355	991	265	244	974	13
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			4
Actuated Green, G (s)	14.6	46.0	120.0	17.0	50.4	120.0	13.0	25.3	120.0	10.0	22.3	22.3
Effective Green, g (s)	15.6	49.0	120.0	18.0	53.4	120.0	14.0	28.3	120.0	11.0	25.3	23.3
Actuated g/C Ratio	0.13	0.41	1.00	0.15	0.44	1.00	0.12	0.24	1.00	0.09	0.21	0.19
Clearance Time (s)	4.0	6.0		6.0	6.0		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0	4.1		2.0	3.3		2.0	4.2		2.0	4.5	4.5
Lane Grp Cap (vph)	431	2076	1560	498	2263	1560	387	1199	1560	304	1072	299
v/s Ratio Prot	0.11	c0.36		0.13	c0.37		c0.11	0.19		0.07	c0.19	
v/s Ratio Perm			c0.31			0.14			0.17			0.01
v/c Ratio	0.84	0.88	0.31	0.87	0.83	0.14	0.92	0.83	0.17	0.80	0.91	0.04
Uniform Delay, d1	50.9	32.8	0.0	49.9	29.3	0.0	52.4	43.5	0.0	53.4	46.2	39.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.6	5.9	0.5	14.5	2.7	0.2	25.6	5.1	0.2	13.4	11.5	0.1
Delay (s)	63.5	38.7	0.5	64.3	32.0	0.2	78.0	48.6	0.2	66.8	57.7	39.4
Level of Service	E	D	A	E	C	A	E	D	A	E	E	D
Approach Delay (s)		35.2			34.7			47.2			58.5	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM Average Control Delay	41.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

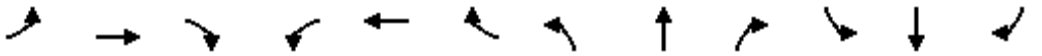


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	1618	136	272	1519	4	23	2	440	7	4	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12	12	12	12	12	12	10
Grade (%)		-6%			0%			0%			0%	
Total Lost time (s)	3.0	3.2		3.0	1.5			2.5	2.5		4.2	4.2
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (prot)	1762	3603		1711	3538			1781	1583		1805	1478
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (perm)	1762	3603		1711	3538			1781	1583		1805	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	1703	143	286	1599	4	24	2	463	7	4	8
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	49	0	0	8
Lane Group Flow (vph)	54	1841	0	286	1603	0	0	26	414	0	11	0
Turn Type	Prot			Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		7	7	1	8	8	
Permitted Phases									7			8
Actuated Green, G (s)	6.5	66.5		26.8	88.5			5.7	32.5		1.6	1.6
Effective Green, g (s)	7.5	69.0		27.8	91.0			7.2	35.5		3.1	3.1
Actuated g/C Ratio	0.06	0.58		0.23	0.76			0.06	0.30		0.03	0.03
Clearance Time (s)	4.0	5.7		4.0	4.0			4.0	4.0		5.7	5.7
Vehicle Extension (s)	2.0	3.7		2.0	8.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	110	2072		396	2683			107	501		47	38
v/s Ratio Prot	0.03	c0.51		0.17	0.45			0.01	c0.19		c0.01	
v/s Ratio Perm									0.07			0.00
v/c Ratio	0.49	0.89		0.72	0.60			0.24	0.83		0.23	0.01
Uniform Delay, d1	54.4	22.2		42.5	6.4			53.8	39.4		57.3	56.9
Progression Factor	1.00	1.00		1.15	0.71			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	5.2		4.4	0.8			0.4	10.3		0.9	0.0
Delay (s)	55.7	27.4		53.5	5.3			54.2	49.7		58.2	57.0
Level of Service	E	C		D	A			D	D		E	E
Approach Delay (s)		28.2			12.6			49.9			57.7	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

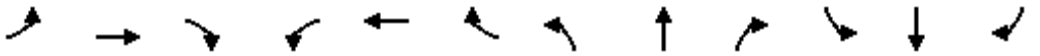
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1573	435	80	1633	154	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7		2.0	3.7	2.0	2.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3424		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3424		1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1656	458	84	1719	162	26
RTOR Reduction (vph)	22	0	0	0	0	22
Lane Group Flow (vph)	2092	0	84	1719	162	4
Turn Type			Prot			Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	80.0		7.3	91.3	14.4	14.4
Effective Green, g (s)	82.0		9.3	93.3	16.4	16.4
Actuated g/C Ratio	0.68		0.08	0.78	0.14	0.14
Clearance Time (s)	5.7		4.0	5.7	4.0	4.0
Vehicle Extension (s)	4.3		2.0	4.3	2.5	2.5
Lane Grp Cap (vph)	2340		137	2752	242	216
v/s Ratio Prot	c0.61		0.05	c0.49	c0.09	
v/s Ratio Perm						0.00
v/c Ratio	0.89		0.61	0.62	0.67	0.02
Uniform Delay, d1	15.5		53.6	5.8	49.2	44.8
Progression Factor	0.46		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7		5.6	1.1	6.2	0.0
Delay (s)	9.9		59.2	6.9	55.4	44.8
Level of Service	A		E	A	E	D
Approach Delay (s)	9.9			9.3	54.0	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	377	716	546	545	738	61	728	1214	155	208	1502	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.2	3.0	3.0	3.8		3.0	4.2	4.7	3.0	3.8	4.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1561	3433	3493		3433	3539	1549	3433	5085	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1561	3433	3493		3433	3539	1549	3433	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	397	754	575	574	777	64	766	1278	163	219	1581	214
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	52	0	0	80
Lane Group Flow (vph)	397	754	575	574	837	0	766	1278	111	219	1581	134
Confl. Peds. (#/hr)	6		6	6		6	6		6	6		6
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		Free	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free						8			4
Actuated Green, G (s)	17.0	30.4	150.0	23.0	36.8		31.0	66.2	66.2	11.0	46.6	46.6
Effective Green, g (s)	18.0	31.9	150.0	24.0	38.3		32.0	67.7	67.2	12.0	48.1	47.6
Actuated g/C Ratio	0.12	0.21	1.00	0.16	0.26		0.21	0.45	0.45	0.08	0.32	0.32
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.7	5.7	4.0	5.3	5.3
Vehicle Extension (s)	2.0	3.5		2.0	3.9		2.0	3.5	3.5	2.0	4.0	4.0
Lane Grp Cap (vph)	412	753	1561	549	892		732	1597	694	275	1631	491
v/s Ratio Prot	0.12	c0.21		c0.17	0.24		c0.22	0.36		0.06	c0.31	
v/s Ratio Perm			0.37						0.07			0.09
v/c Ratio	0.96	1.00	0.37	1.05	0.94		1.05	0.80	0.16	0.80	0.97	0.27
Uniform Delay, d1	65.7	59.0	0.0	63.0	54.7		59.0	35.3	24.6	67.8	50.2	38.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.98	0.64	0.56	1.00	1.00	1.00
Incremental Delay, d2	34.5	33.1	0.7	50.8	17.2		41.4	3.2	0.4	13.8	15.5	0.4
Delay (s)	100.2	92.2	0.7	113.8	71.9		99.4	25.8	14.1	81.6	65.7	38.7
Level of Service	F	F	A	F	E		F	C	B	F	E	D
Approach Delay (s)		63.5			88.9			50.5			64.6	
Approach LOS		E			F			D			E	

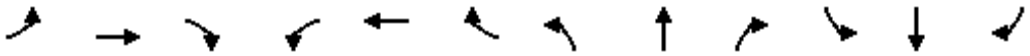
Intersection Summary			
HCM Average Control Delay	64.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	1074	10	128	1180	10	11	11	42	15	244	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		1.00	1.00
Satd. Flow (prot)	1770	3533		1770	3534			1817	1551		1857	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00		1.00	1.00
Satd. Flow (perm)	1770	3533		1770	3534			1817	1551		1857	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	1131	11	135	1242	11	12	12	44	16	257	224
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	40	0	0	184
Lane Group Flow (vph)	61	1141	0	135	1253	0	0	24	4	0	273	40
Confl. Peds. (#/hr)			5			5			5			
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases									8			7
Actuated Green, G (s)	5.5	41.1		10.1	45.7			6.5	6.5		15.0	15.0
Effective Green, g (s)	6.5	43.1		11.1	47.7			7.5	7.5		16.0	16.0
Actuated g/C Ratio	0.07	0.48		0.12	0.53			0.08	0.08		0.18	0.18
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.8		2.0	4.9			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	128	1692		218	1873			151	129		330	281
v/s Ratio Prot	0.03	0.32		c0.08	c0.35			c0.01			c0.15	
v/s Ratio Perm									0.00			0.03
v/c Ratio	0.48	0.67		0.62	0.67			0.16	0.03		0.83	0.14
Uniform Delay, d1	40.1	18.1		37.4	15.4			38.3	37.9		35.7	31.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	2.2		3.7	1.2			0.2	0.0		14.8	0.1
Delay (s)	41.1	20.2		41.1	16.6			38.5	37.9		50.5	31.3
Level of Service	D	C		D	B			D	D		D	C
Approach Delay (s)		21.3			19.0			38.1			41.8	
Approach LOS		C			B			D			D	

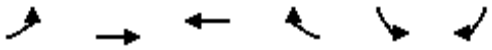
Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



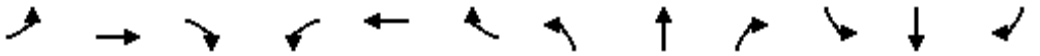
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	1074	0	15	1347	13	12	0	5	31	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.8		2.0	2.8			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3534			1730			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.75	1.00
Satd. Flow (perm)	1770	3539		1770	3534			1460			1389	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	1131	0	16	1418	14	13	0	5	33	0	26
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	0	24
Lane Group Flow (vph)	35	1131	0	16	1432	0	0	13	0	0	33	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	3.7	69.5		1.0	66.8			7.2			7.2	7.2
Effective Green, g (s)	4.7	72.0		2.0	69.3			8.2			8.2	8.2
Actuated g/C Ratio	0.05	0.80		0.02	0.77			0.09			0.09	0.09
Clearance Time (s)	3.0	5.3		3.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	3.4		2.0	3.4			2.5			2.5	2.5
Lane Grp Cap (vph)	92	2831		39	2721			133			127	144
v/s Ratio Prot	c0.02	0.32		c0.01	c0.41							
v/s Ratio Perm								0.01			c0.02	0.00
v/c Ratio	0.38	0.40		0.41	0.53			0.10			0.26	0.02
Uniform Delay, d1	41.2	2.6		43.4	4.0			37.5			38.1	37.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.0	0.4		2.5	0.7			0.2			0.8	0.0
Delay (s)	42.2	3.1		46.0	4.7			37.8			38.9	37.3
Level of Service	D	A		D	A			D			D	D
Approach Delay (s)		4.2			5.2			37.8			38.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.8
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	588	393	708	225	799	613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.8	2.8	1.5		3.0	2.8
Lane Util. Factor	0.91	0.91	0.95		0.97	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	0.98	1.00		0.95	1.00
Satd. Flow (prot)	1610	3323	3411		3433	1583
Flt Permitted	0.95	0.98	1.00		0.95	1.00
Satd. Flow (perm)	1610	3323	3411		3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	619	414	745	237	841	645
RTOR Reduction (vph)	0	0	34	0	0	17
Lane Group Flow (vph)	340	693	948	0	841	628
Turn Type	Split					pm+ov
Protected Phases	5	5	4		6	5
Permitted Phases						6
Actuated Green, G (s)	27.1	27.1	25.6		24.0	51.1
Effective Green, g (s)	29.6	29.6	28.1		25.0	56.1
Actuated g/C Ratio	0.33	0.33	0.31		0.28	0.62
Clearance Time (s)	5.3	5.3	4.0		4.0	5.3
Vehicle Extension (s)	4.3	4.3	2.0		2.0	4.3
Lane Grp Cap (vph)	530	1093	1065		954	1036
v/s Ratio Prot	c0.21	0.21	c0.28		c0.24	0.20
v/s Ratio Perm						0.20
v/c Ratio	0.64	0.63	0.89		0.88	0.61
Uniform Delay, d1	25.7	25.6	29.5		31.1	10.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.9	2.8	9.0		9.4	0.7
Delay (s)	31.6	28.4	38.5		40.4	11.0
Level of Service	C	C	D		D	B
Approach Delay (s)		29.4	38.5		27.6	
Approach LOS		C	D		C	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.3
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



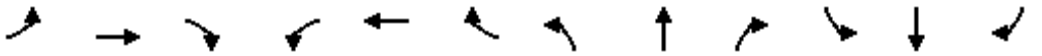
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	787	196	40	626	8	53	3	2	12	6	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.3		3.0	3.3			3.0			3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.97		1.00	1.00			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.97	1.00
Satd. Flow (prot)	1770	3433		1770	3533			1560			1801	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78			0.86	1.00
Satd. Flow (perm)	1770	3433		1770	3533			1272			1601	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	828	206	42	659	8	56	3	2	13	6	337
RTOR Reduction (vph)	0	30	0	0	1	0	0	2	0	0	0	249
Lane Group Flow (vph)	18	1004	0	42	666	0	0	59	0	0	19	88
Parking (#/hr)								4				
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	0.9	20.3		1.9	21.3			10.1			10.1	10.1
Effective Green, g (s)	1.9	22.3		2.9	23.3			11.1			11.1	11.1
Actuated g/C Ratio	0.04	0.49		0.06	0.51			0.24			0.24	0.24
Clearance Time (s)	4.0	5.3		4.0	5.3			4.0			4.0	4.0
Vehicle Extension (s)	2.0	4.3		2.0	4.3			2.0			2.0	2.0
Lane Grp Cap (vph)	74	1679		113	1805			310			390	385
v/s Ratio Prot	0.01	c0.29		c0.02	0.19							
v/s Ratio Perm								0.05			0.01	c0.06
v/c Ratio	0.24	0.60		0.37	0.37			0.19			0.05	0.23
Uniform Delay, d1	21.2	8.4		20.5	6.7			13.7			13.2	13.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.6	0.7		0.8	0.2			0.1			0.0	0.1
Delay (s)	21.8	9.1		21.2	6.9			13.8			13.2	13.9
Level of Service	C	A		C	A			B			B	B
Approach Delay (s)		9.4			7.8			13.8			13.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	45.6	Sum of lost time (s)	9.3
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

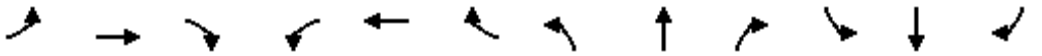
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	467	359	283	307	259	554
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5		2.8	2.5	3.0	2.8
Lane Util. Factor	0.97		1.00	1.00	1.00	1.00
Frt	0.93		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3285		1863	1583	1770	1863
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	3285		1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	492	378	298	323	273	583
RTOR Reduction (vph)	211	0	0	23	0	0
Lane Group Flow (vph)	659	0	298	300	273	583
Turn Type				pm+ov	Prot	
Protected Phases	8		6	8	5	2
Permitted Phases				6		
Actuated Green, G (s)	15.5		15.4	30.9	8.3	27.7
Effective Green, g (s)	17.0		17.9	33.9	9.3	30.2
Actuated g/C Ratio	0.32		0.34	0.65	0.18	0.58
Clearance Time (s)	4.0		5.3	4.0	4.0	5.3
Vehicle Extension (s)	2.0		4.3	2.0	2.0	4.3
Lane Grp Cap (vph)	1064		635	1022	314	1072
v/s Ratio Prot	c0.20		0.16	0.10	c0.15	c0.31
v/s Ratio Perm				0.09		
v/c Ratio	0.62		0.47	0.29	0.87	0.54
Uniform Delay, d1	15.0		13.6	4.1	21.0	6.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		0.9	0.1	21.0	0.8
Delay (s)	15.8		14.4	4.1	42.0	7.7
Level of Service	B		B	A	D	A
Approach Delay (s)	15.8		9.1			18.6
Approach LOS	B		A			B

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	5.5
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



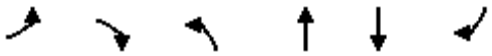
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	6	39	102	8	61	105	994	130	95	1134	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	6	41	107	8	64	111	1046	137	100	1194	80
RTOR Reduction (vph)	0	0	36	0	0	51	0	0	77	0	0	48
Lane Group Flow (vph)	31	6	5	107	8	13	111	1046	60	100	1194	32
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.3	6.6	6.6	6.9	12.2	12.2	6.6	27.7	27.7	4.3	25.4	25.4
Effective Green, g (s)	2.3	7.6	7.6	7.9	13.2	13.2	7.6	29.7	28.7	5.3	27.4	26.4
Actuated g/C Ratio	0.04	0.12	0.12	0.12	0.20	0.20	0.12	0.45	0.44	0.08	0.42	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	62	216	184	213	375	319	205	2306	694	143	2127	638
v/s Ratio Prot	0.02	0.00		c0.06	0.00		0.06	0.21		c0.06	c0.23	
v/s Ratio Perm			0.00			c0.01			0.04			0.02
v/c Ratio	0.50	0.03	0.03	0.50	0.02	0.04	0.54	0.45	0.09	0.70	0.56	0.05
Uniform Delay, d1	31.0	25.7	25.7	27.0	21.0	21.1	27.3	12.3	10.7	29.3	14.5	11.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.1	0.1	1.9	0.0	0.1	2.9	0.1	0.1	13.9	0.3	0.0
Delay (s)	37.3	25.7	25.7	28.8	21.0	21.1	30.2	12.5	10.8	43.2	14.8	11.9
Level of Service	D	C	C	C	C	C	C	B	B	D	B	B
Approach Delay (s)		30.3			25.7			13.8			16.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	11.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	2	22	10	1	42	63	1321	27	64	1132	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	2	23	11	1	44	66	1391	28	67	1192	39
RTOR Reduction (vph)	0	0	21	0	0	40	0	0	13	0	0	19
Lane Group Flow (vph)	16	2	2	11	1	4	66	1391	15	67	1192	20
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	6.1	6.1	0.6	6.2	6.2	4.5	32.9	32.9	2.6	31.0	31.0
Effective Green, g (s)	0.5	6.1	6.1	0.6	6.2	6.2	5.5	34.9	33.9	3.6	33.0	32.0
Actuated g/C Ratio	0.01	0.10	0.10	0.01	0.10	0.10	0.09	0.56	0.55	0.06	0.53	0.51
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	14	183	155	17	186	158	157	2853	863	102	2698	814
v/s Ratio Prot	c0.01	0.00		0.01	0.00		0.04	c0.27		c0.04	0.23	
v/s Ratio Perm			0.00			c0.00			0.01			0.01
v/c Ratio	1.14	0.01	0.01	0.65	0.01	0.03	0.42	0.49	0.02	0.66	0.44	0.02
Uniform Delay, d1	30.9	25.3	25.3	30.7	25.2	25.3	26.8	8.2	6.5	28.7	9.0	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	291.3	0.0	0.0	62.0	0.0	0.1	1.8	0.1	0.0	14.2	0.1	0.0
Delay (s)	322.1	25.4	25.4	92.7	25.2	25.4	28.7	8.4	6.5	42.9	9.1	7.4
Level of Service	F	C	C	F	C	C	C	A	A	D	A	A
Approach Delay (s)		141.2			38.6			9.2			10.8	
Approach LOS		F			D			A			B	

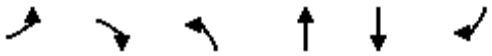
Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	76	48	103	1265	1539	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1562	1770	5085	5085	1548
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1562	1770	5085	5085	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	51	108	1332	1620	187
RTOR Reduction (vph)	0	43	0	0	0	96
Lane Group Flow (vph)	80	8	108	1332	1620	91
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	7.1	7.1	4.2	30.4	22.2	22.2
Effective Green, g (s)	7.1	7.1	4.2	30.4	22.2	22.2
Actuated g/C Ratio	0.16	0.16	0.09	0.67	0.49	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	276	244	163	3397	2481	755
v/s Ratio Prot	c0.05		c0.06	0.26	c0.32	
v/s Ratio Perm		0.01				0.06
v/c Ratio	0.29	0.03	0.66	0.39	0.65	0.12
Uniform Delay, d1	17.0	16.3	20.0	3.4	8.8	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	9.7	0.1	0.6	0.1
Delay (s)	17.6	16.3	29.7	3.5	9.4	6.4
Level of Service	B	B	C	A	A	A
Approach Delay (s)	17.1			5.4	9.1	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

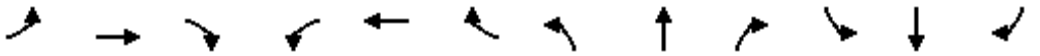
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	19	21	45	1349	1535	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1563	1770	5085	5085	1549
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1563	1770	5085	5085	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	22	47	1420	1616	56
RTOR Reduction (vph)	0	20	0	0	0	24
Lane Group Flow (vph)	20	2	47	1420	1616	32
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	3.2	3.2	1.0	27.4	22.4	22.4
Effective Green, g (s)	3.2	3.2	1.0	27.4	22.4	22.4
Actuated g/C Ratio	0.08	0.08	0.03	0.71	0.58	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	147	130	46	3610	2951	899
v/s Ratio Prot	c0.01		c0.03	0.28	c0.32	
v/s Ratio Perm		0.00				0.02
v/c Ratio	0.14	0.01	1.02	0.39	0.55	0.04
Uniform Delay, d1	16.4	16.3	18.8	2.3	5.0	3.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	139.1	0.1	0.2	0.0
Delay (s)	16.8	16.3	157.9	2.3	5.2	3.5
Level of Service	B	B	F	A	A	A
Approach Delay (s)	16.6			7.3	5.1	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	38.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



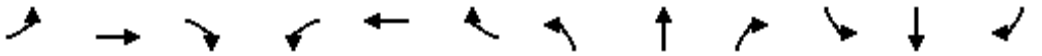
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	0	43	13	0	6	94	1300	29	17	1683	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.92			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1668			1720		1770	5085	1544	1770	5085	1544
Flt Permitted		0.98			0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1668			1720		1770	5085	1544	1770	5085	1544
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	0	45	14	0	6	99	1368	31	18	1772	99
RTOR Reduction (vph)	0	41	0	0	6	0	0	0	5	0	0	16
Lane Group Flow (vph)	0	36	0	0	14	0	99	1368	26	18	1772	83
Confl. Peds. (#/hr)			2			2	2		2			2
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)		8.7			5.6		7.7	61.2	61.2	0.5	54.0	54.0
Effective Green, g (s)		8.7			5.6		7.7	61.2	61.2	0.5	54.0	54.0
Actuated g/C Ratio		0.09			0.06		0.08	0.67	0.67	0.01	0.59	0.59
Clearance Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		158			105		148	3383	1027	10	2985	906
v/s Ratio Prot		c0.02			c0.01		c0.06	0.27		0.01	c0.35	
v/s Ratio Perm									0.02			0.05
v/c Ratio		0.23			0.14		0.67	0.40	0.02	1.80	0.59	0.09
Uniform Delay, d1		38.5			40.9		40.9	7.1	5.2	45.8	12.0	8.3
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7			0.6		10.9	0.1	0.0	602.1	0.3	0.0
Delay (s)		39.3			41.5		51.8	7.1	5.3	647.9	12.4	8.3
Level of Service		D			D		D	A	A	F	B	A
Approach Delay (s)		39.3			41.5			10.0			18.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	92.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

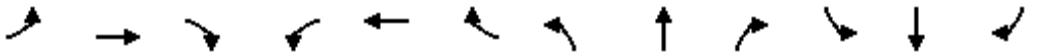
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	845	131	133	641	149	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.3	2.3	3.0	0.6	4.7	4.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	889	138	140	675	157	67
RTOR Reduction (vph)	0	70	0	0	0	54
Lane Group Flow (vph)	889	68	140	675	157	13
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	20.9	20.9	4.4	31.0	8.6	8.6
Effective Green, g (s)	24.3	24.3	5.4	34.4	9.6	9.6
Actuated g/C Ratio	0.49	0.49	0.11	0.70	0.19	0.19
Clearance Time (s)	5.7	5.7	4.0	4.0	5.7	5.7
Vehicle Extension (s)	4.5	4.5	2.0	4.5	2.0	2.0
Lane Grp Cap (vph)	1744	780	194	2469	345	308
v/s Ratio Prot	c0.25		c0.08	0.19	c0.09	
v/s Ratio Perm		0.04				0.01
v/c Ratio	0.51	0.09	0.72	0.27	0.46	0.04
Uniform Delay, d1	8.5	6.6	21.2	2.8	17.5	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	10.6	0.1	0.3	0.0
Delay (s)	8.9	6.7	31.9	2.9	17.9	16.1
Level of Service	A	A	C	A	B	B
Approach Delay (s)	8.6			7.9	17.4	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	19	25	20	12	38	53	903	47	88	1144	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	20	26	21	13	40	56	951	49	93	1204	144
RTOR Reduction (vph)	0	0	23	0	0	36	0	0	27	0	0	72
Lane Group Flow (vph)	52	20	3	21	13	4	56	951	22	93	1204	72
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.5	8.0	8.0	0.5	6.0	6.0	3.0	28.7	28.7	5.7	31.4	31.4
Effective Green, g (s)	2.5	8.0	8.0	0.5	6.0	6.0	3.0	28.7	28.7	5.7	31.4	31.4
Actuated g/C Ratio	0.04	0.13	0.13	0.01	0.10	0.10	0.05	0.46	0.46	0.09	0.50	0.50
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	70	237	201	14	178	151	84	2320	722	160	2538	790
v/s Ratio Prot	c0.03	c0.01		0.01	0.01		0.03	0.19		c0.05	c0.24	
v/s Ratio Perm			0.00			0.00			0.01			0.05
v/c Ratio	0.74	0.08	0.02	1.50	0.07	0.03	0.67	0.41	0.03	0.58	0.47	0.09
Uniform Delay, d1	29.9	24.2	24.0	31.2	25.9	25.8	29.5	11.4	9.4	27.5	10.3	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.2	0.2	0.0	427.8	0.2	0.1	18.2	0.1	0.0	5.3	0.1	0.1
Delay (s)	64.1	24.4	24.0	459.0	26.1	25.9	47.7	11.6	9.4	32.7	10.5	8.3
Level of Service	E	C	C	F	C	C	D	B	A	C	B	A
Approach Delay (s)		45.3			148.8			13.4			11.7	
Approach LOS		D			F			B			B	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

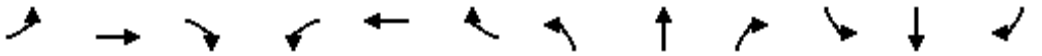


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	46	41	143	92	0	92	968	243	2	1078	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	37	48	43	151	97	0	97	1019	256	2	1135	116
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	138	0	0	70
Lane Group Flow (vph)	37	48	7	151	97	0	97	1019	118	2	1135	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.3	10.7	10.7	8.2	16.6		5.2	32.1	32.1	0.6	27.5	27.5
Effective Green, g (s)	3.3	11.7	11.7	9.2	17.6		6.2	34.1	33.1	1.6	29.5	28.5
Actuated g/C Ratio	0.05	0.16	0.16	0.13	0.25		0.09	0.48	0.46	0.02	0.41	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	82	304	259	227	458		153	2422	732	40	2095	630
v/s Ratio Prot	0.02	0.03		c0.09	c0.05		c0.05	0.20		0.00	c0.22	
v/s Ratio Perm			0.00						0.07			0.03
v/c Ratio	0.45	0.16	0.03	0.67	0.21		0.63	0.42	0.16	0.05	0.54	0.07
Uniform Delay, d1	33.3	25.7	25.2	29.7	21.5		31.6	12.3	11.2	34.3	15.9	13.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.2	0.0	7.2	0.2		8.3	0.1	0.1	0.5	0.3	0.0
Delay (s)	37.2	26.0	25.2	36.9	21.7		39.9	12.4	11.3	34.8	16.2	13.4
Level of Service	D	C	C	D	C		D	B	B	C	B	B
Approach Delay (s)		29.0			31.0			14.1			16.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	11.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

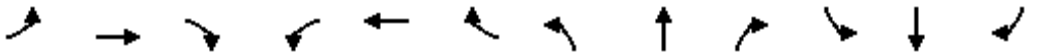
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	37	15	1283	76	0	1263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0		5.0
Lane Util. Factor	1.00	1.00	0.91	1.00		0.91
Frt	1.00	0.85	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	5085	1583		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	5085	1583		5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	39	16	1351	80	0	1329
RTOR Reduction (vph)	0	14	0	24	0	0
Lane Group Flow (vph)	39	2	1351	56	0	1329
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	6.4	6.4	38.7	38.7		38.7
Effective Green, g (s)	6.4	6.4	38.7	38.7		38.7
Actuated g/C Ratio	0.12	0.12	0.70	0.70		0.70
Clearance Time (s)	5.0	5.0	5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	206	184	3571	1112		3571
v/s Ratio Prot	c0.02		c0.27			0.26
v/s Ratio Perm		0.00		0.04		
v/c Ratio	0.19	0.01	0.38	0.05		0.37
Uniform Delay, d1	22.0	21.5	3.3	2.5		3.3
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	0.0	0.1	0.0		0.1
Delay (s)	22.5	21.6	3.4	2.5		3.4
Level of Service	C	C	A	A		A
Approach Delay (s)	22.2		3.3			3.4
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	204	29	17	52	14	6	70	1441	193	15	1500	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.12	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	232	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	215	31	18	55	15	6	74	1517	203	16	1579	132
RTOR Reduction (vph)	0	0	14	0	0	6	0	0	89	0	0	55
Lane Group Flow (vph)	215	31	4	55	15	0	74	1517	115	16	1579	77
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Prot		Perm
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases			4			8	2		2			6
Actuated Green, G (s)	14.8	16.3	16.3	4.4	5.9	5.9	38.5	38.5	38.5	0.6	44.1	44.1
Effective Green, g (s)	14.8	16.3	16.3	4.4	5.9	5.9	38.5	38.5	38.5	0.6	44.1	44.1
Actuated g/C Ratio	0.19	0.20	0.20	0.06	0.07	0.07	0.48	0.48	0.48	0.01	0.55	0.55
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	328	381	323	98	138	117	112	2453	764	13	2810	875
v/s Ratio Prot	c0.12	c0.02		0.03	0.01			0.30		0.01	c0.31	
v/s Ratio Perm			0.00			0.00	c0.32		0.07			0.05
v/c Ratio	0.66	0.08	0.01	0.56	0.11	0.00	0.66	0.62	0.15	1.23	0.56	0.09
Uniform Delay, d1	30.1	25.7	25.3	36.8	34.5	34.2	15.7	15.2	11.5	39.6	11.6	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	0.1	0.0	7.2	0.3	0.0	13.7	0.5	0.1	333.7	0.3	0.0
Delay (s)	34.8	25.8	25.3	43.9	34.8	34.2	29.4	15.7	11.6	373.3	11.8	8.4
Level of Service	C	C	C	D	C	C	C	B	B	F	B	A
Approach Delay (s)		33.1			41.4			15.8			14.9	
Approach LOS		C			D			B			B	

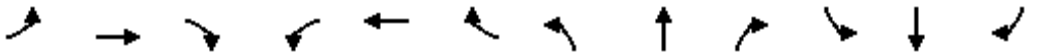
Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	46	64	163	77	175	44	886	33	190	1450	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1561	1770	1863	1561	1770	3539	1544	1770	3539	1544
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1561	1770	1863	1561	1770	3539	1544	1770	3539	1544
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	48	67	172	81	184	46	933	35	200	1526	101
RTOR Reduction (vph)	0	0	60	0	0	150	0	0	20	0	0	39
Lane Group Flow (vph)	46	48	7	172	81	34	46	933	15	200	1526	62
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.8	9.5	9.5	10.4	16.1	16.1	4.8	36.6	36.6	13.4	45.2	45.2
Effective Green, g (s)	3.8	9.5	9.5	10.4	16.1	16.1	4.8	36.6	36.6	13.4	45.2	45.2
Actuated g/C Ratio	0.04	0.11	0.11	0.12	0.19	0.19	0.06	0.43	0.43	0.16	0.53	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	78	206	173	214	349	293	99	1508	658	276	1862	812
v/s Ratio Prot	0.03	0.03		c0.10	c0.04		0.03	0.26		c0.11	c0.43	
v/s Ratio Perm			0.00			0.02			0.01			0.04
v/c Ratio	0.59	0.23	0.04	0.80	0.23	0.12	0.46	0.62	0.02	0.72	0.82	0.08
Uniform Delay, d1	40.3	34.9	34.1	36.8	29.6	29.0	39.3	19.2	14.3	34.5	17.0	10.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.9	0.6	0.1	19.2	0.3	0.2	3.4	0.8	0.0	9.1	2.9	0.0
Delay (s)	51.2	35.5	34.2	56.0	30.0	29.2	42.7	20.0	14.3	43.6	19.9	10.1
Level of Service	D	D	C	E	C	C	D	B	B	D	B	B
Approach Delay (s)		39.4			39.9			20.8			22.0	
Approach LOS		D			D			C			C	

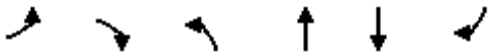
Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



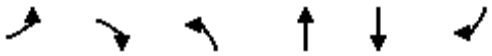
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	13	32	97	7	0	113	886	83	0	1449	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	4.0	4.0		3.0	5.0	6.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00		0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1593	1676	1425	1593	1676		1593	3185	1425		3185	1425
Flt Permitted	0.95	1.00	1.00	0.75	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1593	1676	1425	1255	1676		1593	3185	1425		3185	1425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	101	14	34	102	7	0	119	933	87	0	1525	149
RTOR Reduction (vph)	0	0	25	0	0	0	0	0	31	0	0	48
Lane Group Flow (vph)	101	14	9	102	7	0	119	933	56	0	1525	101
Turn Type	Prot		Perm	Perm		Perm	Prot		Perm	Perm		Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Actuated Green, G (s)	9.1	29.4	29.4	16.3	16.3		10.0	69.5	69.5		55.5	55.5
Effective Green, g (s)	10.1	29.4	30.4	16.3	16.3		11.0	70.5	69.5		56.5	56.5
Actuated g/C Ratio	0.09	0.27	0.28	0.15	0.15		0.10	0.65	0.64		0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.7	4.7		4.7	4.7
Lane Grp Cap (vph)	148	452	398	188	251		161	2062	909		1652	739
v/s Ratio Prot	c0.06	0.01			0.00		c0.07	0.29			c0.48	
v/s Ratio Perm			0.01	c0.08					0.04			0.07
v/c Ratio	0.68	0.03	0.02	0.54	0.03		0.74	0.45	0.06		0.92	0.14
Uniform Delay, d1	47.8	29.3	28.5	42.8	39.5		47.6	9.6	7.4		24.2	13.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	9.9	0.0	0.0	1.7	0.0		14.1	0.3	0.1		9.4	0.2
Delay (s)	57.7	29.3	28.5	44.6	39.6		61.7	9.9	7.5		33.6	13.7
Level of Service	E	C	C	D	D		E	A	A		C	B
Approach Delay (s)		48.4			44.2			15.1			31.8	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



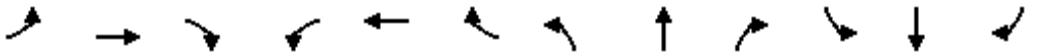
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	58	81	269	937	1287	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	85	283	986	1355	119
RTOR Reduction (vph)	0	76	0	0	0	53
Lane Group Flow (vph)	61	9	283	986	1355	66
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	7.8	7.8	16.4	57.8	36.4	36.4
Effective Green, g (s)	7.8	7.8	16.4	57.8	36.4	36.4
Actuated g/C Ratio	0.10	0.10	0.22	0.76	0.48	0.48
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	163	384	2706	1704	762
v/s Ratio Prot	c0.03		c0.16	0.28	c0.38	
v/s Ratio Perm		0.01				0.04
v/c Ratio	0.33	0.05	0.74	0.36	0.80	0.09
Uniform Delay, d1	31.5	30.6	27.6	2.9	16.5	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	7.2	0.1	2.7	0.0
Delay (s)	32.6	30.7	34.8	3.0	19.1	10.7
Level of Service	C	C	C	A	B	B
Approach Delay (s)	31.5			10.1	18.4	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	120	105	130	1267	1374	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.6	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	126	111	137	1334	1446	188
RTOR Reduction (vph)	0	93	0	0	0	80
Lane Group Flow (vph)	126	18	137	1334	1446	108
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.9	8.9	7.3	43.8	32.5	32.5
Effective Green, g (s)	9.9	9.9	8.3	47.2	35.9	35.9
Actuated g/C Ratio	0.16	0.16	0.13	0.75	0.57	0.57
Clearance Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	4.8	4.8	4.8
Lane Grp Cap (vph)	279	250	234	2664	2026	906
v/s Ratio Prot	c0.07		c0.08	0.38	c0.41	
v/s Ratio Perm		0.01				0.07
v/c Ratio	0.45	0.07	0.59	0.50	0.71	0.12
Uniform Delay, d1	23.9	22.5	25.6	3.1	9.7	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	2.4	0.3	1.5	0.1
Delay (s)	24.4	22.5	28.0	3.4	11.1	6.3
Level of Service	C	C	C	A	B	A
Approach Delay (s)	23.5			5.7	10.6	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	8.6
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

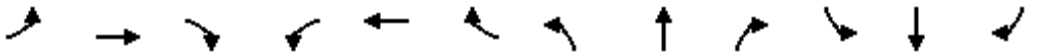


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	32	10	43	115	76	25	1205	33	35	1141	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.3	3.3	3.9	3.7	3.7	3.7	3.0	2.6	2.6	3.0	2.6	2.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	132	34	11	45	121	80	26	1268	35	37	1201	293
RTOR Reduction (vph)	0	0	9	0	0	70	0	0	18	0	0	146
Lane Group Flow (vph)	132	34	2	45	121	10	26	1268	17	37	1201	147
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	12.3	12.3	12.3	8.1	8.1	8.1	2.9	35.6	35.6	4.4	37.1	37.1
Effective Green, g (s)	13.9	13.9	13.3	9.7	9.7	9.7	3.9	39.0	39.0	5.4	40.5	40.5
Actuated g/C Ratio	0.17	0.17	0.17	0.12	0.12	0.12	0.05	0.48	0.48	0.07	0.50	0.50
Clearance Time (s)	4.9	4.9	4.9	5.3	5.3	5.3	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.1	3.1	3.1	2.0	2.0	2.0	2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	305	321	261	213	224	191	86	1712	766	119	1778	795
v/s Ratio Prot	c0.07	0.02		0.03	c0.06		0.01	c0.36		c0.02	0.34	
v/s Ratio Perm			0.00			0.01			0.01			0.09
v/c Ratio	0.43	0.11	0.01	0.21	0.54	0.05	0.30	0.74	0.02	0.31	0.68	0.19
Uniform Delay, d1	29.8	28.1	28.1	32.0	33.4	31.4	37.0	16.7	10.9	35.8	15.1	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	0.0	0.2	1.4	0.0	0.7	2.1	0.0	0.5	1.3	0.2
Delay (s)	30.8	28.3	28.1	32.2	34.8	31.4	37.8	18.8	10.9	36.4	16.4	11.2
Level of Service	C	C	C	C	C	C	D	B	B	D	B	B
Approach Delay (s)		30.2			33.2			19.0			15.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	12.6
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	31	28	1663	60	43	1448
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		0.91	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1700		5085	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1700		5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	29	1751	63	45	1524
RTOR Reduction (vph)	27	0	0	24	0	0
Lane Group Flow (vph)	35	0	1751	39	45	1524
Turn Type				Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases				2		
Actuated Green, G (s)	5.0		38.1	38.1	4.1	47.2
Effective Green, g (s)	5.0		38.1	38.1	4.1	47.2
Actuated g/C Ratio	0.08		0.61	0.61	0.07	0.76
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	137		3115	970	117	3859
v/s Ratio Prot	c0.02		c0.34		0.03	c0.30
v/s Ratio Perm				0.02		
v/c Ratio	0.26		0.56	0.04	0.38	0.39
Uniform Delay, d1	26.9		7.1	4.8	27.8	2.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0		0.2	0.0	2.1	0.1
Delay (s)	27.9		7.4	4.8	29.9	2.6
Level of Service	C		A	A	C	A
Approach Delay (s)	27.9		7.3			3.4
Approach LOS	C		A			A

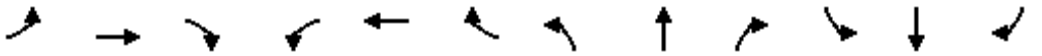
Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	0	43	13	0	6	94	1300	29	17	1683	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1562		1770	1562		1770	5085	1546	1770	5085	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1562		1770	1562		1770	5085	1546	1770	5085	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	0	45	14	0	6	99	1368	31	18	1772	99
RTOR Reduction (vph)	0	42	0	0	6	0	0	0	10	0	0	34
Lane Group Flow (vph)	32	3	0	14	0	0	99	1368	21	18	1772	65
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	1.8	5.5		0.6	4.3		6.3	49.0	49.0	0.6	43.3	43.3
Effective Green, g (s)	1.8	5.5		0.6	4.3		6.3	49.0	49.0	0.6	43.3	43.3
Actuated g/C Ratio	0.03	0.08		0.01	0.06		0.09	0.68	0.68	0.01	0.60	0.60
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	44	120		15	94		156	3475	1057	15	3071	934
v/s Ratio Prot	c0.02	c0.00		0.01	0.00		c0.06	0.27		0.01	c0.35	
v/s Ratio Perm									0.01			0.04
v/c Ratio	0.73	0.03		0.93	0.00		0.63	0.39	0.02	1.20	0.58	0.07
Uniform Delay, d1	34.7	30.6		35.5	31.7		31.6	4.9	3.6	35.6	8.6	5.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	45.3	0.1		197.1	0.0		8.2	0.3	0.0	303.5	0.8	0.1
Delay (s)	80.0	30.7		232.6	31.7		39.8	5.3	3.7	339.1	9.4	6.0
Level of Service	E	C		F	C		D	A	A	F	A	A
Approach Delay (s)		51.2			172.3			7.5			12.4	
Approach LOS		D			F			A			B	

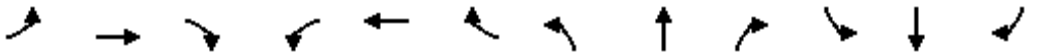
Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



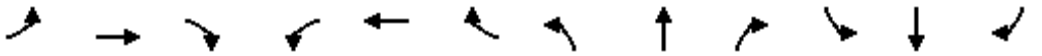
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	4	61	51	4	0	135	0	116	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0		5.0			
Lane Util. Factor		1.00	1.00		1.00		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (prot)		1863	1583		1780		1770		1583			
Flt Permitted		1.00	1.00		0.96		0.95		1.00			
Satd. Flow (perm)		1863	1583		1780		1770		1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	4	64	54	4	0	142	0	122	0	0	0
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	57	0	0	0
Lane Group Flow (vph)	0	4	6	0	58	0	142	0	65	0	0	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		5.1	5.1		5.8		11.6		29.7			
Effective Green, g (s)		5.1	5.1		5.8		11.6		29.7			
Actuated g/C Ratio		0.09	0.09		0.10		0.21		0.53			
Clearance Time (s)		5.0	5.0		5.0		5.0		5.0			
Vehicle Extension (s)		3.0	3.0		3.0		3.0		3.0			
Lane Grp Cap (vph)		171	145		186		369		846			
v/s Ratio Prot		0.00			c0.03		c0.08					
v/s Ratio Perm			c0.00						c0.04			
v/c Ratio		0.02	0.04		0.31		0.38		0.08			
Uniform Delay, d1		23.0	23.0		23.1		18.9		6.3			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.1	0.1		1.0		0.7		0.0			
Delay (s)		23.0	23.1		24.0		19.6		6.3			
Level of Service		C	C		C		B		A			
Approach Delay (s)		23.1			24.0			13.5			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



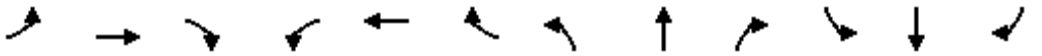
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	9	67	8	98	267	78	588	31	56	963	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1785	1583		1856	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.72	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1350	1583		1832	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	9	71	8	103	281	82	619	33	59	1014	107
RTOR Reduction (vph)	0	0	49	0	0	193	0	0	22	0	0	73
Lane Group Flow (vph)	0	70	22	0	111	88	82	619	11	59	1014	34
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		17.2	17.2		17.2	17.2	5.1	18.2	18.2	4.6	17.7	17.7
Effective Green, g (s)		17.2	17.2		17.2	17.2	5.1	18.2	18.2	4.6	17.7	17.7
Actuated g/C Ratio		0.31	0.31		0.31	0.31	0.09	0.33	0.33	0.08	0.32	0.32
Clearance Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		422	495		573	495	164	1171	524	148	1139	509
v/s Ratio Prot							c0.05	0.17		0.03	c0.29	
v/s Ratio Perm		0.05	0.01		c0.06	0.06			0.01			0.02
v/c Ratio		0.17	0.04		0.19	0.18	0.50	0.53	0.02	0.40	0.89	0.07
Uniform Delay, d1		13.7	13.2		13.8	13.8	23.7	14.9	12.4	23.9	17.7	12.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	0.0		0.2	0.2	2.4	0.4	0.0	1.8	8.9	0.1
Delay (s)		13.9	13.2		14.0	13.9	26.1	15.4	12.4	25.7	26.7	13.0
Level of Service		B	B		B	B	C	B	B	C	C	B
Approach Delay (s)		13.5			13.9			16.4			25.4	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	1	182	0	5	9	194	592	0	26	1101	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1585			1863	1583	1770	3539		1770	3539	1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1585			1863	1583	1770	3539		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	1	192	0	5	9	204	623	0	27	1159	128
RTOR Reduction (vph)	0	153	0	0	0	8	0	0	0	0	0	52
Lane Group Flow (vph)	93	40	0	0	5	1	204	623	0	27	1159	76
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	5.7	14.0			4.3	4.3	12.1	41.2		1.6	30.7	30.7
Effective Green, g (s)	5.7	14.0			4.3	4.3	12.1	41.2		1.6	30.7	30.7
Actuated g/C Ratio	0.08	0.20			0.06	0.06	0.18	0.60		0.02	0.45	0.45
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	147	323			116	99	311	2119		41	1579	706
v/s Ratio Prot	c0.05	c0.03			0.00		c0.12	0.18		0.02	c0.33	
v/s Ratio Perm						0.00						0.05
v/c Ratio	0.63	0.12			0.04	0.01	0.66	0.29		0.66	0.73	0.11
Uniform Delay, d1	30.5	22.4			30.3	30.2	26.4	6.7		33.3	15.7	11.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.6	0.2			0.2	0.0	4.9	0.1		32.2	1.8	0.1
Delay (s)	39.1	22.6			30.5	30.3	31.3	6.8		65.5	17.5	11.1
Level of Service	D	C			C	C	C	A		E	B	B
Approach Delay (s)		27.9			30.3			12.8			17.9	
Approach LOS		C			C			B			B	

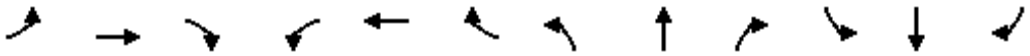
Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	0	9	19	0	24	20	357	28	45	1006	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.99	1.00		0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1562	1770		1562	1770	3539	1547	1770	3539	1547
Flt Permitted		0.68	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1263	1562	1770		1562	1770	3539	1547	1770	3539	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	0	9	20	0	25	21	376	29	47	1059	68
RTOR Reduction (vph)	0	0	8	0	0	23	0	0	14	0	0	26
Lane Group Flow (vph)	0	25	1	20	0	2	21	376	15	47	1059	42
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Perm		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases		4		8	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Actuated Green, G (s)		5.9	5.9	5.8		5.8	1.0	33.8	33.8	3.9	36.7	36.7
Effective Green, g (s)		5.9	5.9	5.8		5.8	1.0	33.8	33.8	3.9	36.7	36.7
Actuated g/C Ratio		0.09	0.09	0.09		0.09	0.02	0.52	0.52	0.06	0.56	0.56
Clearance Time (s)		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		114	141	157		139	27	1829	800	106	1986	868
v/s Ratio Prot				c0.01			0.01	0.11		c0.03	c0.30	
v/s Ratio Perm		c0.02	0.00			0.00			0.01			0.03
v/c Ratio		0.22	0.01	0.13		0.02	0.78	0.21	0.02	0.44	0.53	0.05
Uniform Delay, d1		27.6	27.1	27.5		27.2	32.1	8.5	7.7	29.7	9.0	6.5
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.0	0.0	0.4		0.0	81.9	0.1	0.0	2.9	0.3	0.0
Delay (s)		28.6	27.1	27.8		27.2	113.9	8.6	7.7	32.6	9.3	6.5
Level of Service		C	C	C		C	F	A	A	C	A	A
Approach Delay (s)		28.2			27.5			13.7			10.0	
Approach LOS		C			C			B			B	

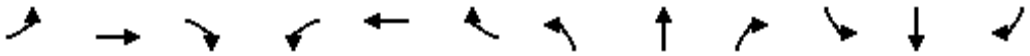
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



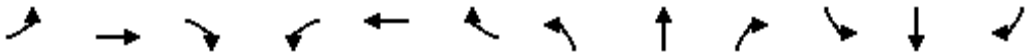
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	0	34	9	3	23	10	481	15	45	1126	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.4		3.0	3.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1795	1583	1770	3523		1770	3490	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1795	1583	1770	3523		1770	3490	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	0	36	9	3	24	11	506	16	47	1185	121
RTOR Reduction (vph)	0	0	30	0	0	23	0	1	0	0	4	0
Lane Group Flow (vph)	0	69	6	0	12	1	11	521	0	47	1302	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		10.6	10.6		3.1	3.1	0.9	39.5		4.3	42.9	
Effective Green, g (s)		11.6	11.6		4.1	4.1	1.9	41.8		5.3	45.2	
Actuated g/C Ratio		0.15	0.15		0.05	0.05	0.03	0.56		0.07	0.60	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		273	244		98	86	45	1958		125	2098	
v/s Ratio Prot		c0.04			c0.01		0.01	0.15		c0.03	c0.37	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.25	0.02		0.12	0.02	0.24	0.27		0.38	0.62	
Uniform Delay, d1		28.0	27.0		33.8	33.6	35.9	8.7		33.4	9.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.2	0.0	1.0	0.1		0.7	0.6	
Delay (s)		28.2	27.0		34.0	33.7	37.0	8.8		34.1	10.2	
Level of Service		C	C		C	C	D	A		C	B	
Approach Delay (s)		27.8			33.8			9.4			11.0	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	16	30	23	4	18	21	480	25	15	1071	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.95		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791	1583		1717		1770	3513		1770	3503	
Flt Permitted		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1791	1583		1717		1770	3513		1770	3503	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	17	32	24	4	19	22	505	26	16	1127	82
RTOR Reduction (vph)	0	0	28	0	18	0	0	2	0	0	3	0
Lane Group Flow (vph)	0	85	4	0	29	0	22	529	0	16	1206	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		9.9	9.9		4.9		2.2	45.4		1.0	44.2	
Effective Green, g (s)		9.9	9.9		4.9		2.2	45.4		1.0	44.2	
Actuated g/C Ratio		0.13	0.13		0.06		0.03	0.58		0.01	0.56	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.5		2.0	3.5	
Lane Grp Cap (vph)		225	199		107		49	2021		22	1962	
v/s Ratio Prot		c0.05			c0.02		c0.01	0.15		0.01	c0.34	
v/s Ratio Perm			0.00									
v/c Ratio		0.38	0.02		0.27		0.45	0.26		0.73	0.61	
Uniform Delay, d1		31.7	30.2		35.3		37.8	8.4		38.8	11.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		0.5		2.4	0.1		67.5	0.6	
Delay (s)		32.1	30.3		35.8		40.1	8.5		106.4	12.2	
Level of Service		C	C		D		D	A		F	B	
Approach Delay (s)		31.6			35.8			9.7			13.5	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	78.9	Sum of lost time (s)	17.7
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



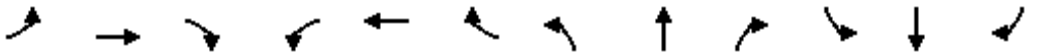
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	5	111	13	11	7	196	543	22	13	1047	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	1583		1814	1583	1770	3519		1770	3511	
Flt Permitted		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1785	1583		1814	1583	1770	3519		1770	3511	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	5	117	14	12	7	206	572	23	14	1102	63
RTOR Reduction (vph)	0	0	105	0	0	6	0	3	0	0	4	0
Lane Group Flow (vph)	0	39	12	0	26	1	206	592	0	14	1161	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3			4						
Actuated Green, G (s)		6.8	6.8		5.0	5.0	11.9	42.9		0.8	31.8	
Effective Green, g (s)		7.8	7.8		6.0	6.0	12.9	45.6		1.8	34.5	
Actuated g/C Ratio		0.11	0.11		0.08	0.08	0.18	0.62		0.02	0.47	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		190	169		149	130	312	2192		44	1655	
v/s Ratio Prot		c0.02			c0.01		c0.12	0.17		0.01	c0.33	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.21	0.07		0.17	0.00	0.66	0.27		0.32	0.70	
Uniform Delay, d1		29.9	29.4		31.3	30.9	28.1	6.3		35.1	15.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.2		0.6	0.0	4.0	0.1		1.5	1.4	
Delay (s)		30.4	29.6		31.9	30.9	32.1	6.3		36.6	16.7	
Level of Service		C	C		C	C	C	A		D	B	
Approach Delay (s)		29.8			31.6			13.0			17.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	13	28	52	16	252	47	1045	17	134	1403	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	4.3	4.3	4.3	2.0	3.7		2.0	3.7	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.97	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1800	1531	1681	1724	1583	1770	3527		1770	3494	
Flt Permitted		0.97	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1800	1531	1681	1724	1583	1770	3527		1770	3494	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	14	29	55	17	265	49	1100	18	141	1477	97
RTOR Reduction (vph)	0	0	26	0	0	235	0	1	0	0	3	0
Lane Group Flow (vph)	0	47	3	36	36	30	49	1117	0	141	1571	0
Confl. Peds. (#/hr)			20						20			20
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	8	8		7	7		5	2		1	6	
Permitted Phases			8			7						
Actuated Green, G (s)		9.1	9.1	9.8	9.8	9.8	4.4	45.3		10.7	51.6	
Effective Green, g (s)		10.1	10.1	10.8	10.8	10.8	6.4	47.3		12.7	53.6	
Actuated g/C Ratio		0.11	0.11	0.12	0.12	0.12	0.07	0.50		0.14	0.57	
Clearance Time (s)		4.0	4.0	5.3	5.3	5.3	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5	2.5	2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		194	165	193	198	182	121	1777		239	1994	
v/s Ratio Prot		c0.03		c0.02	0.02		0.03	0.32		c0.08	c0.45	
v/s Ratio Perm			0.00			0.02						
v/c Ratio		0.24	0.02	0.19	0.18	0.17	0.40	0.63		0.59	0.79	
Uniform Delay, d1		38.4	37.5	37.6	37.6	37.5	41.9	16.9		38.2	15.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0	0.3	0.3	0.3	0.8	0.8		2.4	2.2	
Delay (s)		38.9	37.5	37.9	37.9	37.8	42.7	17.7		40.5	18.0	
Level of Service		D	D	D	D	D	D	B		D	B	
Approach Delay (s)		38.3			37.8			18.7			19.8	
Approach LOS		D			D			B			B	

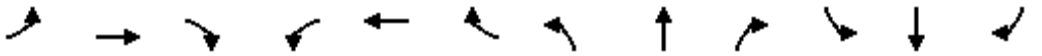
Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	9.3
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



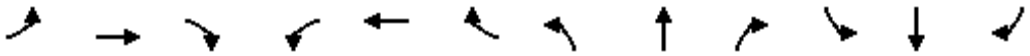
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	0	42	12	0	23	49	1017	32	38	1374	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	3.0		3.0	4.0	4.7		3.0	4.7	5.7
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770		1583	1770		1583	1770	3523		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	37	0	44	13	0	24	52	1071	34	40	1446	6
RTOR Reduction (vph)	0	0	39	0	0	23	0	2	0	0	0	2
Lane Group Flow (vph)	37	0	5	13	0	1	52	1103	0	40	1446	4
Turn Type	Prot		custom	Prot		custom	Prot			Prot		Perm
Protected Phases	8			7			5	2		1	6	
Permitted Phases			8			7						6
Actuated Green, G (s)	10.6		10.6	4.4		4.4	4.3	50.8		3.9	50.4	50.4
Effective Green, g (s)	10.6		10.6	5.4		5.4	4.3	51.8		4.9	51.4	50.4
Actuated g/C Ratio	0.12		0.12	0.06		0.06	0.05	0.59		0.06	0.59	0.58
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	4.5		2.0	4.5	4.5
Lane Grp Cap (vph)	215		192	109		98	87	2088		99	2081	913
v/s Ratio Prot	c0.02			c0.01			c0.03	0.31		0.02	c0.41	
v/s Ratio Perm			0.00			0.00						0.00
v/c Ratio	0.17		0.03	0.12		0.02	0.60	0.53		0.40	0.69	0.00
Uniform Delay, d1	34.5		33.9	38.8		38.5	40.7	10.6		39.8	12.5	7.9
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1		0.0	0.2		0.0	7.2	0.4		1.0	1.2	0.0
Delay (s)	34.6		33.9	38.9		38.5	47.9	10.9		40.8	13.7	7.9
Level of Service	C		C	D		D	D	B		D	B	A
Approach Delay (s)		34.2			38.7			12.6			14.4	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	15.7
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



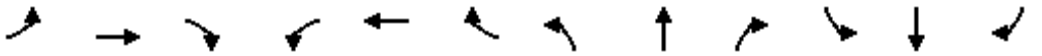
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	546	6	305	175	6	104	99	1030	55	38	1141	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.6	3.0	3.0	2.6	2.6
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	575	6	321	184	6	109	104	1084	58	40	1201	183
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	109
Lane Group Flow (vph)	287	294	321	184	6	109	104	1084	58	40	1201	74
Turn Type	Split		Free	Split		Free	Prot		Free	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			Free			6
Actuated Green, G (s)	16.5	16.5	76.9	9.8	9.8	76.9	5.0	28.6	76.9	4.0	27.6	27.6
Effective Green, g (s)	17.5	17.5	76.9	10.8	10.8	76.9	6.0	32.0	76.9	5.0	31.0	31.0
Actuated g/C Ratio	0.23	0.23	1.00	0.14	0.14	1.00	0.08	0.42	1.00	0.07	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.0	4.6		3.0	4.6	4.6
Lane Grp Cap (vph)	383	384	1583	249	262	1583	138	2116	1583	115	2050	638
v/s Ratio Prot	0.17	c0.17		c0.10	0.00		c0.06	0.21		0.02	c0.24	
v/s Ratio Perm			c0.20			0.07			0.04			0.05
v/c Ratio	0.75	0.77	0.20	0.74	0.02	0.07	0.75	0.51	0.04	0.35	0.59	0.12
Uniform Delay, d1	27.7	27.8	0.0	31.7	28.5	0.0	34.7	16.7	0.0	34.4	17.9	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	8.4	0.3	10.9	0.0	0.1	18.5	0.4	0.0	1.8	0.6	0.1
Delay (s)	35.1	36.2	0.3	42.6	28.5	0.1	53.2	17.0	0.0	36.2	18.5	14.5
Level of Service	D	D	A	D	C	A	D	B	A	D	B	B
Approach Delay (s)		23.1			26.8			19.3			18.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	11.6
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



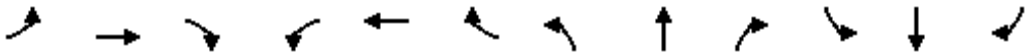
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	2	39	132	2	195	5	1032	36	67	1803	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	3.0	5.0	5.0		3.0	-0.4	3.0	4.0	0.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1687	1583	1770	1586		1770	3539	1583	1770	5085	
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.19	1.00	
Satd. Flow (perm)	1681	1687	1583	1770	1586		1770	3539	1583	360	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	2	41	139	2	205	5	1086	38	71	1898	1
RTOR Reduction (vph)	0	0	36	0	52	0	0	0	17	0	0	0
Lane Group Flow (vph)	88	87	5	139	155	0	5	1086	21	71	1899	0
Turn Type	Split		Perm	Split			Prot		Perm	Perm		
Protected Phases	4	4		8	8		5	2			6	
Permitted Phases			4						2	6		
Actuated Green, G (s)	7.8	7.8	7.8	11.1	11.1		1.0	37.0	37.0	31.0	31.0	
Effective Green, g (s)	8.8	7.8	8.8	11.1	11.1		2.0	40.4	37.0	31.0	34.4	
Actuated g/C Ratio	0.13	0.11	0.13	0.16	0.16		0.03	0.59	0.54	0.46	0.51	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0		4.0	3.0	3.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	218	194	205	289	259		52	2106	863	164	2576	
v/s Ratio Prot	c0.05	0.05		0.08	c0.10		0.00	c0.31			c0.37	
v/s Ratio Perm			0.00						0.01	0.20		
v/c Ratio	0.40	0.45	0.03	0.48	0.60		0.10	0.52	0.02	0.43	0.74	
Uniform Delay, d1	27.1	28.0	25.8	25.8	26.3		32.1	8.0	7.1	12.5	13.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	1.6	0.1	1.3	3.7		0.8	0.2	0.0	1.8	1.1	
Delay (s)	28.4	29.7	25.9	27.0	30.0		32.9	8.2	7.1	14.3	14.3	
Level of Service	C	C	C	C	C		C	A	A	B	B	
Approach Delay (s)		28.4			28.8			8.3			14.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	8.2
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



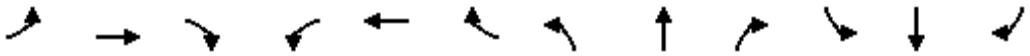
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	9	152	0	2	116	46	934	0	299	1804	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.95	0.95		1.00		1.00	0.95		1.00	0.95	
Frt		0.87	0.85		0.87		1.00	1.00		1.00	1.00	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1532	1504		1615		1770	3539		1770	3539	
Flt Permitted		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1532	1504		1615		1770	3539		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	9	160	0	2	122	48	983	0	315	1899	0
RTOR Reduction (vph)	0	68	73	0	108	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	18	10	0	16	0	48	983	0	315	1899	0
Turn Type	Perm		Perm				Prot			Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4									6
Actuated Green, G (s)		9.4	9.4		9.4		3.0	37.2		18.8	53.0	
Effective Green, g (s)		9.4	9.4		9.4		3.0	37.2		18.8	53.0	
Actuated g/C Ratio		0.12	0.12		0.12		0.04	0.46		0.23	0.66	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		179	176		189		66	1637		414	2333	
v/s Ratio Prot		c0.01			0.01		0.03	0.28		c0.18	c0.54	
v/s Ratio Perm			0.01									
v/c Ratio		0.10	0.06		0.09		0.73	0.60		0.76	0.81	
Uniform Delay, d1		31.7	31.6		31.7		38.3	16.1		28.7	10.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.1		0.2		32.6	0.6		8.0	2.3	
Delay (s)		32.0	31.7		31.9		70.9	16.7		36.7	12.4	
Level of Service		C	C		C		E	B		D	B	
Approach Delay (s)		31.8			31.9			19.2			15.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	8	105	114	3	18	17	945	329	14	1695	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0	3.0	3.0	3.0	3.0	2.6		2.0	2.6	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1790	1583	1681	1689	1583	1770	4888		1770	5067	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1790	1583	1681	1689	1583	1770	4888		1770	5067	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	8	111	120	3	19	18	995	346	15	1784	43
RTOR Reduction (vph)	0	0	98	0	0	17	0	54	0	0	2	0
Lane Group Flow (vph)	0	43	13	61	62	2	18	1287	0	15	1825	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4						
Actuated Green, G (s)		7.3	7.3	8.2	8.2	8.2	0.9	38.5		0.7	37.3	
Effective Green, g (s)		8.3	8.3	9.2	9.2	9.2	1.9	41.9		1.7	40.7	
Actuated g/C Ratio		0.12	0.12	0.13	0.13	0.13	0.03	0.58		0.02	0.57	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	6.0		3.0	6.0	
Vehicle Extension (s)		0.2	0.2	0.2	0.2	0.2	2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)		207	183	216	217	203	47	2856		42	2876	
v/s Ratio Prot		c0.02		0.04	c0.04		c0.01	0.26		0.01	c0.36	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.21	0.07	0.28	0.29	0.01	0.38	0.45		0.36	0.63	
Uniform Delay, d1		28.7	28.3	28.3	28.3	27.3	34.3	8.4		34.5	10.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.1	0.3	0.3	0.0	1.9	0.2		1.9	0.5	
Delay (s)		28.9	28.3	28.5	28.5	27.3	36.2	8.6		36.4	11.0	
Level of Service		C	C	C	C	C	D	A		D	B	
Approach Delay (s)		28.5			28.4			8.9			11.2	
Approach LOS		C			C			A			B	

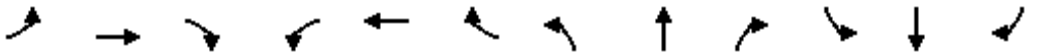
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	11.6
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	142	20	232	70	10	38	158	1561	11	14	2055	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		1.7	1.7	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.96		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	1526		1785	1583	1770	5078		1770	5054	
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1785	1526		1785	1583	1770	5078		1770	5054	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	149	21	244	74	11	40	166	1643	12	15	2163	67
RTOR Reduction (vph)	0	0	212	0	0	38	0	1	0	0	2	0
Lane Group Flow (vph)	0	170	32	0	85	2	166	1654	0	15	2228	0
Confl. Peds. (#/hr)			10						10			10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3						
Actuated Green, G (s)		13.4	13.4		5.0	5.0	15.6	81.1		1.2	67.7	
Effective Green, g (s)		15.7	15.7		7.3	7.3	16.6	84.1		2.2	70.7	
Actuated g/C Ratio		0.13	0.13		0.06	0.06	0.14	0.70		0.02	0.59	
Clearance Time (s)		5.3	5.3		4.0	4.0	3.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	
Lane Grp Cap (vph)		234	200		109	96	245	3559		32	2978	
v/s Ratio Prot		c0.10			c0.05		c0.09	0.33		0.01	c0.44	
v/s Ratio Perm			0.02			0.00						
v/c Ratio		0.73	0.16		0.78	0.03	0.68	0.46		0.47	0.75	
Uniform Delay, d1		50.1	46.3		55.6	53.0	49.2	8.0		58.3	18.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		9.1	0.1		26.7	0.0	5.7	0.2		3.9	1.8	
Delay (s)		59.2	46.4		82.3	53.0	54.9	8.2		62.2	19.9	
Level of Service		E	D		F	D	D	A		E	B	
Approach Delay (s)		51.7			72.9			12.4			20.2	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

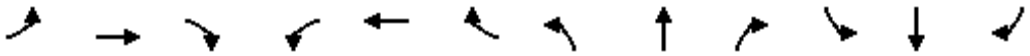
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	348	76	367	942	183	282	1583	148	278	1725	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1532	1770	5085	1534	3433	5085	1560	3433	5085	1560
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1532	1770	5085	1534	3433	5085	1560	3433	5085	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	119	366	80	386	992	193	297	1666	156	293	1816	245
RTOR Reduction (vph)	0	0	67	0	0	122	0	0	0	0	0	0
Lane Group Flow (vph)	119	366	13	386	992	71	297	1666	156	293	1816	245
Confl. Peds. (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			Free			Free
Actuated Green, G (s)	8.5	16.6	16.6	29.1	37.2	37.2	12.1	43.1	120.0	11.8	42.5	120.0
Effective Green, g (s)	9.5	19.6	19.6	30.1	40.2	40.2	13.1	46.1	120.0	12.8	45.5	120.0
Actuated g/C Ratio	0.08	0.16	0.16	0.25	0.34	0.34	0.11	0.38	1.00	0.11	0.38	1.00
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	5.7		4.0	6.0	
Vehicle Extension (s)	2.0	3.6	3.6	2.0	3.6	3.6	2.0	4.5		2.0	4.1	
Lane Grp Cap (vph)	272	578	250	444	1703	514	375	1953	1560	366	1928	1560
v/s Ratio Prot	0.03	0.10		c0.22	c0.20		c0.09	0.33		0.09	c0.36	
v/s Ratio Perm			0.01			0.05			0.10			c0.16
v/c Ratio	0.44	0.63	0.05	0.87	0.58	0.14	0.79	0.85	0.10	0.80	0.94	0.16
Uniform Delay, d1	52.7	46.8	42.4	43.1	33.0	27.8	52.1	33.8	0.0	52.4	36.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.4	0.1	15.9	0.6	0.1	10.2	5.0	0.1	11.2	10.7	0.2
Delay (s)	53.1	49.3	42.5	59.0	33.5	28.0	62.3	38.8	0.1	63.6	46.7	0.2
Level of Service	D	D	D	E	C	C	E	D	A	E	D	A
Approach Delay (s)		49.1			39.1			39.3			44.0	
Approach LOS		D			D			D			D	

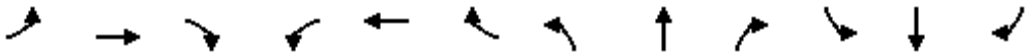
Intersection Summary			
HCM Average Control Delay	41.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1	25	28	1	19	29	2018	41	33	2127	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0		3.0	3.0	4.7	2.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.91	
Frt		0.93			0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1698			1712		1770	3539	1583	1770	5081	
Flt Permitted		0.88			0.88		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1535			1544		1770	3539	1583	1770	5081	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	1	26	29	1	20	31	2124	43	35	2239	12
RTOR Reduction (vph)	0	23	0	0	18	0	0	0	8	0	1	0
Lane Group Flow (vph)	0	30	0	0	32	0	31	2124	35	35	2250	0
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4					2			
Actuated Green, G (s)		6.7			6.7		1.5	50.3	50.3	1.5	49.3	
Effective Green, g (s)		7.7			7.7		2.5	53.0	51.3	2.5	52.0	
Actuated g/C Ratio		0.11			0.11		0.04	0.74	0.72	0.04	0.73	
Clearance Time (s)		4.0			4.0		4.0	5.7	5.7	3.0	5.7	
Vehicle Extension (s)		3.0			3.0		2.0	3.8	3.8	2.0	3.8	
Lane Grp Cap (vph)		166			167		62	2634	1141	62	3711	
v/s Ratio Prot							0.02	c0.60		c0.02	0.44	
v/s Ratio Perm		0.02			c0.02				0.02			
v/c Ratio		0.18			0.19		0.50	0.81	0.03	0.56	0.61	
Uniform Delay, d1		28.9			28.9		33.7	5.8	2.8	33.8	4.6	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5			0.6		2.3	2.0	0.0	6.8	0.3	
Delay (s)		29.4			29.5		36.0	7.8	2.9	40.7	5.0	
Level of Service		C			C		D	A	A	D	A	
Approach Delay (s)		29.4			29.5			8.1			5.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	5.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



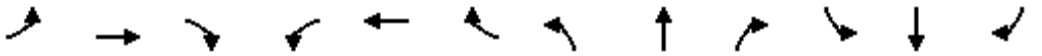
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	71	153	137	331	115	305	2298	85	96	2096	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	2.7	3.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5069	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1545	3433	3539	1562	3433	5085	1562	3433	5069	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	75	161	144	348	121	321	2419	89	101	2206	42
RTOR Reduction (vph)	0	0	137	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	93	75	24	144	348	121	321	2419	89	101	2247	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Free	Prot		Free	Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			Free			
Actuated Green, G (s)	8.5	14.9	14.9	7.7	14.1	120.0	15.1	71.8	120.0	5.9	62.6	
Effective Green, g (s)	9.5	17.9	17.9	8.7	17.1	120.0	16.1	74.8	120.0	6.9	65.6	
Actuated g/C Ratio	0.08	0.15	0.15	0.07	0.14	1.00	0.13	0.62	1.00	0.06	0.55	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	2.0	3.8	3.8	2.0	3.8		2.0	3.4		2.0	3.4	
Lane Grp Cap (vph)	140	528	230	249	504	1562	461	3170	1562	197	2771	
v/s Ratio Prot	c0.05	0.02		0.04	c0.10		c0.09	0.48		0.03	c0.44	
v/s Ratio Perm			0.02			c0.08			0.06			
v/c Ratio	0.66	0.14	0.10	0.58	0.69	0.08	0.70	0.76	0.06	0.51	0.81	
Uniform Delay, d1	53.7	44.4	44.1	53.9	48.9	0.0	49.6	16.2	0.0	54.9	22.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.8	0.2	0.3	2.0	4.3	0.1	3.7	1.8	0.1	0.9	1.9	
Delay (s)	62.5	44.5	44.4	55.9	53.2	0.1	53.3	18.0	0.1	55.9	24.1	
Level of Service	E	D	D	E	D	A	D	B	A	E	C	
Approach Delay (s)		49.6			43.4			21.5			25.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	33	247	2475	203	254	2073
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	3.0	4.0	4.0	2.0	2.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	260	2605	214	267	2182
RTOR Reduction (vph)	0	0	0	28	0	0
Lane Group Flow (vph)	35	260	2605	186	267	2182
Turn Type		Free		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		Free		2		
Actuated Green, G (s)	7.3	93.9	55.0	55.0	16.6	76.6
Effective Green, g (s)	8.3	93.9	57.0	57.0	17.6	78.6
Actuated g/C Ratio	0.09	1.00	0.61	0.61	0.19	0.84
Clearance Time (s)	6.0		6.0	6.0	3.0	4.0
Vehicle Extension (s)	3.0		3.4	3.4	2.0	3.4
Lane Grp Cap (vph)	156	1583	3087	961	332	4256
v/s Ratio Prot	0.02		c0.51		c0.15	0.43
v/s Ratio Perm		c0.16		0.12		
v/c Ratio	0.22	0.16	0.84	0.19	0.80	0.51
Uniform Delay, d1	39.8	0.0	14.9	8.2	36.5	2.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	2.3	0.1	12.5	0.1
Delay (s)	40.5	0.2	17.2	8.3	49.0	2.3
Level of Service	D	A	B	A	D	A
Approach Delay (s)	5.0		16.5			7.4
Approach LOS	A		B			A

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

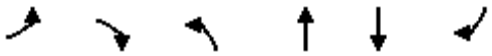


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	23	53	437	138	512	110	1040	231	282	1129	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	0.91	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1863	1583	3433	1613	1504	1770	3539	1583	3433	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1863	1583	3433	1613	1504	1770	3539	1583	3433	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	24	56	460	145	539	116	1095	243	297	1188	0
RTOR Reduction (vph)	0	0	53	0	52	239	0	0	150	0	0	0
Lane Group Flow (vph)	0	24	3	460	303	90	116	1095	93	297	1188	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		5.6	5.6	24.7	24.7	24.7	7.5	34.6	34.6	9.1	36.2	
Effective Green, g (s)		5.6	5.6	24.7	24.7	24.7	7.5	34.6	34.6	9.1	36.2	
Actuated g/C Ratio		0.06	0.06	0.27	0.27	0.27	0.08	0.38	0.38	0.10	0.40	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		116	98	942	443	413	148	1361	609	347	1423	
v/s Ratio Prot		c0.01		0.13	c0.19		0.07	0.31		c0.09	c0.34	
v/s Ratio Perm			0.00			0.06			0.06			
v/c Ratio		0.21	0.04	0.49	0.69	0.22	0.78	0.80	0.15	0.86	0.83	
Uniform Delay, d1		40.1	39.7	27.4	29.2	25.2	40.5	24.7	18.1	39.8	24.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.9	0.1	0.4	4.4	0.3	23.2	5.1	0.5	18.3	5.9	
Delay (s)		41.0	39.8	27.8	33.5	25.5	63.7	29.8	18.7	58.1	30.1	
Level of Service		D	D	C	C	C	E	C	B	E	C	
Approach Delay (s)		40.2			28.9			30.7			35.7	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

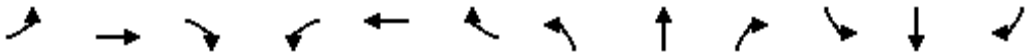
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	121	31	586	130	84	1014
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0	3.0	2.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	127	33	617	137	88	1067
RTOR Reduction (vph)	0	26	0	63	0	0
Lane Group Flow (vph)	127	7	617	74	88	1067
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	9.3	9.3	24.3	24.3	3.8	31.1
Effective Green, g (s)	10.8	10.8	27.3	27.3	4.8	34.1
Actuated g/C Ratio	0.21	0.21	0.54	0.54	0.10	0.68
Clearance Time (s)	4.0	4.0	6.0	6.0	3.0	6.0
Vehicle Extension (s)	3.0	3.0	4.8	4.8	2.0	4.8
Lane Grp Cap (vph)	379	339	1917	857	169	2394
v/s Ratio Prot	c0.07		0.17		c0.05	c0.30
v/s Ratio Perm		0.00		0.05		
v/c Ratio	0.34	0.02	0.32	0.09	0.52	0.45
Uniform Delay, d1	16.8	15.6	6.4	5.6	21.7	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.2	0.1	1.3	0.3
Delay (s)	17.3	15.7	6.6	5.6	23.0	4.0
Level of Service	B	B	A	A	C	A
Approach Delay (s)	16.9		6.4			5.5
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	50.4	Sum of lost time (s)	4.5
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	18	498	272	759	1336	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	524	286	799	1406	12
RTOR Reduction (vph)	0	258	0	0	0	6
Lane Group Flow (vph)	19	266	286	799	1406	6
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	16.4	16.4	15.7	60.0	39.3	39.3
Effective Green, g (s)	16.4	16.4	15.7	60.0	39.3	39.3
Actuated g/C Ratio	0.19	0.19	0.18	0.69	0.45	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	336	300	322	2458	1610	720
v/s Ratio Prot	0.01		c0.16	0.23	c0.40	
v/s Ratio Perm		c0.17				0.00
v/c Ratio	0.06	0.89	0.89	0.33	0.87	0.01
Uniform Delay, d1	28.7	34.1	34.5	5.2	21.3	12.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	25.5	24.2	0.1	5.6	0.0
Delay (s)	28.7	59.6	58.7	5.3	26.9	12.9
Level of Service	C	E	E	A	C	B
Approach Delay (s)	58.5			19.4	26.7	
Approach LOS	E			B	C	

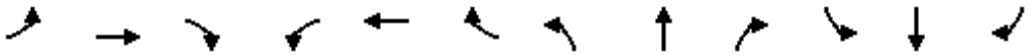
Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1	8	237	7	336	8	994	69	231	1593	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.92			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1689			1776	1556	1770	3499		1770	3526	
Flt Permitted		0.91			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1563			1345	1556	1770	3499		1770	3526	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1	8	249	7	354	8	1046	73	243	1677	36
RTOR Reduction (vph)	0	6	0	0	0	207	0	6	0	0	2	0
Lane Group Flow (vph)	0	8	0	0	256	147	8	1113	0	243	1711	0
Confl. Peds. (#/hr)						5			5			5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4		4						
Actuated Green, G (s)		15.8			15.8	15.8	1.2	30.1		12.0	40.9	
Effective Green, g (s)		16.8			16.8	16.8	2.2	33.1		13.0	43.9	
Actuated g/C Ratio		0.23			0.23	0.23	0.03	0.46		0.18	0.61	
Clearance Time (s)		4.0			4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)		367			316	365	54	1618		321	2162	
v/s Ratio Prot							0.00	0.32		c0.14	c0.49	
v/s Ratio Perm		0.01			c0.19	0.09						
v/c Ratio		0.02			0.81	0.40	0.15	0.69		0.76	0.79	
Uniform Delay, d1		21.1			25.9	23.2	33.8	15.2		27.8	10.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			13.8	0.3	0.5	1.4		8.7	2.3	
Delay (s)		21.1			39.7	23.4	34.3	16.6		36.5	12.7	
Level of Service		C			D	C	C	B		D	B	
Approach Delay (s)		21.1			30.2			16.7			15.7	
Approach LOS		C			C			B			B	

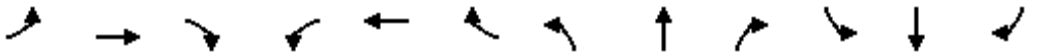
Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	0	31	58	4	25	41	1018	8	20	1697	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	12	11	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7	4.7	3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	1531		1779	1474	1770	3539	1544	1770	3526	
Flt Permitted		0.95	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1770	1531		1779	1474	1770	3539	1544	1770	3526	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	0	33	61	4	26	43	1072	8	21	1786	38
RTOR Reduction (vph)	0	0	30	0	0	25	0	0	2	0	1	0
Lane Group Flow (vph)	0	57	3	0	65	1	43	1072	6	21	1823	0
Confl. Peds. (#/hr)						4			2			3
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	8	8		7	7		1	6		5	2	
Permitted Phases			8			7			6			
Actuated Green, G (s)		7.6	7.6		3.2	3.2	3.5	59.5	59.5	2.0	58.0	
Effective Green, g (s)		8.6	8.6		4.2	4.2	4.5	62.5	60.5	3.0	61.0	
Actuated g/C Ratio		0.10	0.10		0.05	0.05	0.05	0.69	0.67	0.03	0.68	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.3	5.3	2.0	5.3	
Lane Grp Cap (vph)		169	146		83	69	89	2458	1038	59	2390	
v/s Ratio Prot		c0.03			c0.04		c0.02	0.30		0.01	c0.52	
v/s Ratio Perm			0.00			0.00			0.00			
v/c Ratio		0.34	0.02		0.78	0.02	0.48	0.44	0.01	0.36	0.76	
Uniform Delay, d1		38.0	36.9		42.4	40.9	41.6	6.0	4.9	42.6	9.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4	0.0		34.7	0.0	1.5	0.3	0.0	1.3	2.4	
Delay (s)		38.5	36.9		77.1	41.0	43.1	6.3	4.9	43.9	12.0	
Level of Service		D	D		E	D	D	A	A	D	B	
Approach Delay (s)		37.9			66.8			7.7			12.4	
Approach LOS		D			E			A			B	

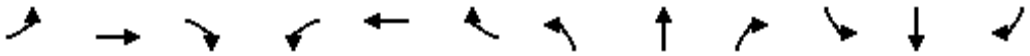
Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	256	0	407	12	4	2	827	777	0	4	1085	676
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Total Lost time (s)	2.0	2.0	3.0	2.0	2.0		1.0	3.7		2.0	2.7	2.7
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1478	1770	1770		3433	3539		1770	3539	1478
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1478	1770	1770		3433	3539		1770	3539	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	269	0	428	13	4	2	871	818	0	4	1142	712
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	351
Lane Group Flow (vph)	134	135	428	13	4	0	871	818	0	4	1142	361
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	11.2	11.2	90.0	4.2	4.2		25.2	55.5		1.4	33.7	33.7
Effective Green, g (s)	13.2	13.2	90.0	6.2	6.2		27.2	57.5		3.4	35.7	35.7
Actuated g/C Ratio	0.15	0.15	1.00	0.07	0.07		0.30	0.64		0.04	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		3.0	5.7		4.0	4.7	4.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	247	247	1478	122	122		1038	2261		67	1404	586
v/s Ratio Prot	0.08	c0.08		0.01	0.00		c0.25	0.23		0.00	c0.32	
v/s Ratio Perm			c0.29									0.24
v/c Ratio	0.54	0.55	0.29	0.11	0.03		0.84	0.36		0.06	0.81	0.62
Uniform Delay, d1	35.6	35.6	0.0	39.3	39.1		29.4	7.6		41.8	24.2	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.4	2.5	0.5	0.4	0.1		6.1	0.5		0.4	3.7	1.9
Delay (s)	38.0	38.1	0.5	39.7	39.2		35.4	8.1		42.1	27.9	23.6
Level of Service	D	D	A	D	D		D	A		D	C	C
Approach Delay (s)		15.0			39.5			22.2			26.3	
Approach LOS		B			D			C			C	

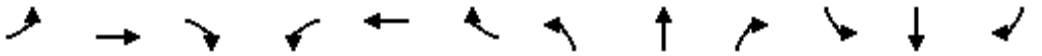
Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	1	31	0	2	31	37	1228	0	34	965	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	3.0		4.0	3.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1592			1863	1583	1770	3539		1770	3490	
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1592			1863	1583	1770	3539		1770	3490	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	1	33	0	2	33	39	1293	0	36	1016	103
RTOR Reduction (vph)	0	29	0	0	0	31	0	0	0	0	5	0
Lane Group Flow (vph)	64	5	0	0	2	2	39	1293	0	36	1114	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	8.0	8.0			4.0	4.0	1.3	37.2		1.3	37.2	
Effective Green, g (s)	9.0	9.0			5.0	5.0	2.3	39.2		2.3	39.2	
Actuated g/C Ratio	0.13	0.13			0.07	0.07	0.03	0.56		0.03	0.56	
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	226	203			132	112	58	1968		58	1941	
v/s Ratio Prot	c0.04	0.00			0.00		c0.02	c0.37		0.02	0.32	
v/s Ratio Perm						c0.00						
v/c Ratio	0.28	0.03			0.02	0.02	0.67	0.66		0.62	0.57	
Uniform Delay, d1	27.8	26.9			30.5	30.5	33.7	10.9		33.7	10.2	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.1			0.0	0.1	26.6	0.8		18.8	0.4	
Delay (s)	28.5	27.0			30.5	30.5	60.3	11.7		52.5	10.6	
Level of Service	C	C			C	C	E	B		D	B	
Approach Delay (s)		28.0			30.5			13.2			11.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

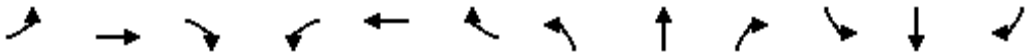


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	181	2	103	22	1	26	83	898	24	73	979	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1770	1593		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1770	1593		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	191	2	108	23	1	27	87	945	25	77	1031	116
RTOR Reduction (vph)	0	0	91	0	25	0	0	0	14	0	0	64
Lane Group Flow (vph)	95	98	17	23	3	0	87	945	11	77	1031	52
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.5	11.5	11.5	4.6	4.6		6.9	33.2	33.2	6.4	32.7	32.7
Effective Green, g (s)	11.5	11.5	11.5	4.6	4.6		6.9	33.2	33.2	6.4	32.7	32.7
Actuated g/C Ratio	0.16	0.16	0.16	0.06	0.06		0.09	0.45	0.45	0.09	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	265	266	249	112	100		167	1610	720	155	1585	709
v/s Ratio Prot	0.06	c0.06		c0.01	0.00		c0.05	0.27		0.04	c0.29	
v/s Ratio Perm			0.01						0.01			0.03
v/c Ratio	0.36	0.37	0.07	0.21	0.03		0.52	0.59	0.02	0.50	0.65	0.07
Uniform Delay, d1	27.5	27.5	26.2	32.5	32.1		31.5	14.8	10.9	31.8	15.7	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.0	0.3	0.0		1.4	0.6	0.0	0.9	1.1	0.1
Delay (s)	27.8	27.8	26.2	32.8	32.1		32.8	15.4	10.9	32.7	16.8	11.6
Level of Service	C	C	C	C	C		C	B	B	C	B	B
Approach Delay (s)		27.2			32.4			16.8			17.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	17.3
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

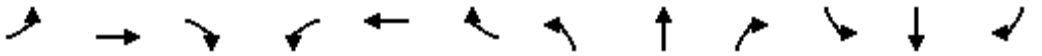
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	8	9	1	5	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	8	9	1	5	31
RTOR Reduction (vph)	0	7	0	1	0	0
Lane Group Flow (vph)	1	1	9	0	5	31
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	1.8	1.8	1.8	1.8	0.5	7.3
Effective Green, g (s)	1.8	1.8	1.8	1.8	0.5	7.3
Actuated g/C Ratio	0.09	0.09	0.09	0.09	0.03	0.38
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	167	149	176	149	46	712
v/s Ratio Prot	c0.00		0.00		0.00	c0.02
v/s Ratio Perm		0.00		0.00		
v/c Ratio	0.01	0.01	0.05	0.00	0.11	0.04
Uniform Delay, d1	7.8	7.8	7.9	7.8	9.1	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	0.1	0.0	1.0	0.0
Delay (s)	7.9	7.9	8.0	7.8	10.1	3.7
Level of Service	A	A	A	A	B	A
Approach Delay (s)	7.9		8.0			4.6
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.04		
Actuated Cycle Length (s)	19.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	1057	63	97	937	29	138	32	15	3	34	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.7	3.7	3.0	3.7	3.7	3.0	3.0	3.0		2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1716	1583		1791	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1716	1583		1791	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1113	66	102	986	31	145	34	16	3	36	14
RTOR Reduction (vph)	0	0	32	0	0	10	0	0	14	0	13	0
Lane Group Flow (vph)	57	1113	34	102	986	21	88	91	2	0	40	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			
Actuated Green, G (s)	2.0	28.2	28.2	4.4	30.6	30.6	6.6	6.6	6.6		2.0	
Effective Green, g (s)	4.0	30.2	30.2	5.4	32.6	32.6	7.6	7.6	7.6		4.0	
Actuated g/C Ratio	0.07	0.51	0.51	0.09	0.55	0.55	0.13	0.13	0.13		0.07	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	120	1815	812	162	1959	876	217	221	204		122	
v/s Ratio Prot	0.03	c0.31		c0.06	0.28		0.05	c0.05			c0.02	
v/s Ratio Perm			0.02			0.01			0.00			
v/c Ratio	0.47	0.61	0.04	0.63	0.50	0.02	0.41	0.41	0.01		0.33	
Uniform Delay, d1	26.4	10.2	7.1	25.8	8.1	6.0	23.6	23.6	22.4		26.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.1	0.7	0.0	5.4	0.3	0.0	0.5	0.5	0.0		0.6	
Delay (s)	27.5	10.9	7.2	31.2	8.4	6.0	24.0	24.0	22.4		26.7	
Level of Service	C	B	A	C	A	A	C	C	C		C	
Approach Delay (s)		11.5			10.4			23.9			26.7	
Approach LOS		B			B			C			C	

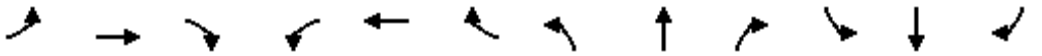
Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	11.7
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	855	221	177	942	38	228	44	112	20	36	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	10	12	12	10	12	12	10
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.6	2.7	2.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1478	1770	3539	1478	1681	1711	1478	1770	1863	1478
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1478	1770	3539	1478	1681	1711	1478	1770	1863	1478
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	85	900	233	186	992	40	240	46	118	21	38	71
RTOR Reduction (vph)	0	0	136	0	0	22	0	0	107	0	0	62
Lane Group Flow (vph)	85	900	97	186	992	18	142	144	11	21	38	9
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8			5			6
Actuated Green, G (s)	3.9	19.3	19.3	6.1	21.5	21.5	4.1	4.1	4.1	5.0	5.0	5.0
Effective Green, g (s)	4.9	22.0	22.0	7.1	24.2	24.2	5.1	5.1	5.1	6.0	6.9	6.9
Actuated g/C Ratio	0.09	0.42	0.42	0.13	0.46	0.46	0.10	0.10	0.10	0.11	0.13	0.13
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7	5.7	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	4.0	4.0	4.0
Lane Grp Cap (vph)	164	1475	616	238	1622	677	162	165	143	201	243	193
v/s Ratio Prot	0.05	c0.25		c0.11	c0.28		c0.08	0.08		0.01	c0.02	
v/s Ratio Perm			0.07			0.01			0.01			0.01
v/c Ratio	0.52	0.61	0.16	0.78	0.61	0.03	0.88	0.87	0.08	0.10	0.16	0.05
Uniform Delay, d1	22.8	12.0	9.6	22.1	10.8	7.8	23.5	23.5	21.7	21.0	20.4	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.9	0.2	14.2	0.8	0.0	36.5	35.4	0.1	0.3	0.4	0.1
Delay (s)	24.0	12.9	9.8	36.3	11.6	7.9	60.0	58.9	21.8	21.3	20.8	20.2
Level of Service	C	B	A	D	B	A	E	E	C	C	C	C
Approach Delay (s)		13.1			15.2			48.5			20.6	
Approach LOS		B			B			D			C	

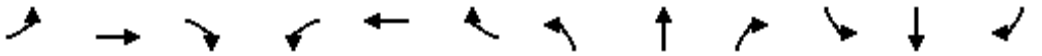
Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	8.7
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



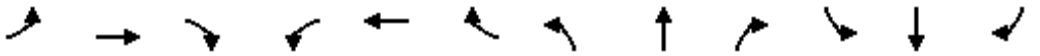
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	911	85	65	857	2	144	40	10	3	17	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		2.0	2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1793	1583		1850	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1793	1583		1850	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	88	959	89	68	902	2	152	42	11	3	18	99
RTOR Reduction (vph)	0	0	56	0	0	1	0	0	7	0	0	93
Lane Group Flow (vph)	88	959	33	68	902	1	0	194	4	0	21	6
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	7.2	31.1	31.1	6.5	30.4	30.4		31.7	31.7		4.7	4.7
Effective Green, g (s)	8.2	33.1	33.1	7.5	32.4	32.4		32.7	32.7		5.7	5.7
Actuated g/C Ratio	0.09	0.37	0.37	0.08	0.36	0.36		0.36	0.36		0.06	0.06
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.0	4.0		3.0	3.0
Vehicle Extension (s)	2.0	4.3	4.3	2.0	4.3	4.3		3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	161	1302	582	148	1274	570		651	575		117	100
v/s Ratio Prot	0.05	c0.27		0.04	c0.25			c0.11			c0.01	
v/s Ratio Perm			0.02			0.00			0.00			0.00
v/c Ratio	0.55	0.74	0.06	0.46	0.71	0.00		0.30	0.01		0.18	0.06
Uniform Delay, d1	39.1	24.7	18.4	39.3	24.7	18.4		20.5	18.3		39.9	39.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	2.4	0.1	0.8	2.0	0.0		1.2	0.0		0.3	0.1
Delay (s)	41.2	27.1	18.4	40.1	26.8	18.4		21.6	18.3		40.2	39.7
Level of Service	D	C	B	D	C	B		C	B		D	D
Approach Delay (s)		27.5			27.7			21.4			39.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	538	381	57	483	64	428	70	51	59	44	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1681	1708	1583		1811	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1681	1708	1583		1811	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	566	401	60	508	67	451	74	54	62	46	19
RTOR Reduction (vph)	0	0	131	0	0	35	0	0	41	0	0	17
Lane Group Flow (vph)	42	566	270	60	508	32	262	263	13	0	108	2
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	7	4	2	3	8		2	2		1	1	
Permitted Phases			4			8			2			1
Actuated Green, G (s)	3.0	37.6	58.6	6.2	40.8	40.8	21.0	21.0	21.0		8.2	8.2
Effective Green, g (s)	4.0	39.6	60.6	7.2	42.8	42.8	22.0	22.0	22.0		9.2	9.2
Actuated g/C Ratio	0.04	0.44	0.67	0.08	0.48	0.48	0.24	0.24	0.24		0.10	0.10
Clearance Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	4.3	3.5	2.0	4.3	4.3	3.5	3.5	3.5		2.0	2.0
Lane Grp Cap (vph)	79	1557	1066	142	1683	753	411	418	387		185	162
v/s Ratio Prot	0.02	c0.16	0.06	c0.03	0.14		c0.16	0.15			c0.06	
v/s Ratio Perm			0.11			0.02			0.01			0.00
v/c Ratio	0.53	0.36	0.25	0.42	0.30	0.04	0.64	0.63	0.03		0.58	0.01
Uniform Delay, d1	42.1	16.8	5.8	39.4	14.5	12.6	30.4	30.4	25.9		38.6	36.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.4	0.2	0.1	0.7	0.5	0.1	3.4	3.1	0.0		3.0	0.0
Delay (s)	45.5	17.0	5.9	40.2	14.9	12.7	33.8	33.5	25.9		41.6	36.3
Level of Service	D	B	A	D	B	B	C	C	C		D	D
Approach Delay (s)		13.8			17.1			32.9			40.8	
Approach LOS		B			B			C			D	

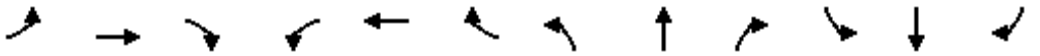
Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	14	34	24	12	4	37	1334	6	7	858	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	12	10	11	12	10
Grade (%)		1%			0%			4%			-4%	
Total Lost time (s)	3.0	4.3		3.0	3.0		3.0	2.6	2.6	2.0	2.6	2.6
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	1640		3433	1791		1676	4984	1414	1745	5187	1473
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1761	1640		3433	1791		1676	4984	1414	1745	5187	1473
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	15	36	25	13	4	39	1404	6	7	903	201
RTOR Reduction (vph)	0	30	0	0	4	0	0	0	3	0	0	99
Lane Group Flow (vph)	173	21	0	25	13	0	39	1404	3	7	903	102
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	10.7	10.1		3.6	4.3		1.6	30.5	30.5	0.9	28.8	28.8
Effective Green, g (s)	11.7	11.1		4.6	5.3		2.6	33.9	33.9	1.9	32.2	32.2
Actuated g/C Ratio	0.18	0.18		0.07	0.08		0.04	0.53	0.53	0.03	0.51	0.51
Clearance Time (s)	4.0	5.3		4.0	4.0		4.0	6.0	6.0	3.0	6.0	6.0
Vehicle Extension (s)	2.0	2.7		2.0	2.0		2.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	325	287		249	150		69	2665	756	52	2634	748
v/s Ratio Prot	c0.10	0.01		c0.01	0.01		c0.02	c0.28		0.00	0.17	
v/s Ratio Perm									0.00			0.07
v/c Ratio	0.53	0.07		0.10	0.09		0.57	0.53	0.00	0.13	0.34	0.14
Uniform Delay, d1	23.4	21.9		27.5	26.8		29.8	9.6	6.9	29.9	9.3	8.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1		0.1	0.1		6.2	0.3	0.0	0.4	0.2	0.2
Delay (s)	24.2	21.9		27.5	26.9		36.0	9.9	6.9	30.4	9.4	8.4
Level of Service	C	C		C	C		D	A	A	C	A	A
Approach Delay (s)		23.7			27.3			10.6			9.4	
Approach LOS		C			C			B			A	

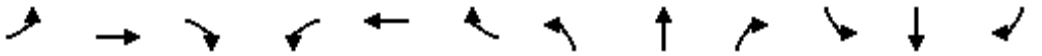
Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



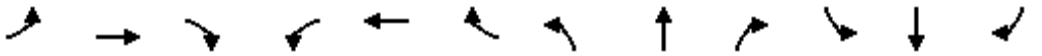
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	28	31	15	19	15	138	185	0	37	211	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	1.00	
Frt		0.95			0.96		1.00	1.00		1.00	0.92	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1745			1758		1770	3539		1770	1722	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1775			1785		1770	3539		1770	1722	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	29	33	16	20	16	145	195	0	39	222	224
RTOR Reduction (vph)	0	31	0	0	15	0	0	0	0	0	68	0
Lane Group Flow (vph)	0	64	0	0	37	0	145	195	0	39	378	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Actuated Green, G (s)		2.4			1.5		5.3	22.1		1.6	18.4	
Effective Green, g (s)		2.4			1.5		5.3	22.1		1.6	18.4	
Actuated g/C Ratio		0.06			0.03		0.12	0.51		0.04	0.42	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.9		2.0	2.9	
Lane Grp Cap (vph)		98			61		215	1794		65	727	
v/s Ratio Prot							c0.08	c0.06		0.02	c0.22	
v/s Ratio Perm		c0.04			c0.02							
v/c Ratio		0.65			0.60		0.67	0.11		0.60	0.52	
Uniform Delay, d1		20.2			20.8		18.3	5.6		20.7	9.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.2			10.1		6.4	0.0		9.5	0.6	
Delay (s)		31.4			30.9		24.7	5.6		30.2	10.0	
Level of Service		C			C		C	A		C	A	
Approach Delay (s)		31.4			30.9			13.8			11.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	0	93	5	1	6	185	1600	5	54	2082	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.9	3.9		3.0	3.0	1.0	4.0		3.0	3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1788	1583	1770	3538		1770	3539	1583
Flt Permitted		0.95	1.00		0.85	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1588	1583	1770	3538		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	106	0	98	5	1	6	195	1684	5	57	2192	256
RTOR Reduction (vph)	0	0	88	0	0	6	0	0	0	0	0	34
Lane Group Flow (vph)	0	106	10	0	6	0	195	1689	0	57	2192	222
Turn Type	Split		Perm	Perm		Perm	Prot			Prot		Perm
Protected Phases	4	4			3		5	2		1	6	
Permitted Phases			4	3		3						6
Actuated Green, G (s)		13.1	13.1		3.3	3.3	11.1	91.9		6.6	87.4	87.4
Effective Green, g (s)		14.1	14.1		4.3	4.3	14.1	93.9		7.6	90.4	90.4
Actuated g/C Ratio		0.11	0.11		0.03	0.03	0.11	0.70		0.06	0.68	0.68
Clearance Time (s)		4.9	4.9		4.0	4.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.1		2.0	4.1	4.1
Lane Grp Cap (vph)		187	167		51	51	187	2483		101	2391	1070
v/s Ratio Prot		c0.06					c0.11	0.48		0.03	c0.62	
v/s Ratio Perm			0.01		c0.00	0.00						0.14
v/c Ratio		0.57	0.06		0.12	0.00	1.04	0.68		0.56	0.92	0.21
Uniform Delay, d1		56.9	53.9		62.9	62.7	59.9	11.4		61.5	18.5	8.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.3	0.1		0.4	0.0	77.5	0.9		4.2	6.2	0.1
Delay (s)		59.3	54.0		63.3	62.7	137.4	12.2		65.7	24.7	8.3
Level of Service		E	D		E	E	F	B		E	C	A
Approach Delay (s)		56.7			63.0			25.2			24.0	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	133.8	Sum of lost time (s)	10.9
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

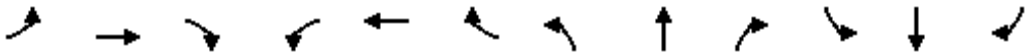


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	306	7	213	13	15	42	220	1468	5	5	1537	621
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	3.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	0.85		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1592		1770	1863	1583	3433	3538		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1592		1770	1863	1583	3433	3538		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	322	7	224	14	16	44	232	1545	5	5	1618	654
RTOR Reduction (vph)	0	110	0	0	0	43	0	0	0	0	0	147
Lane Group Flow (vph)	322	121	0	14	16	1	232	1550	0	5	1618	507
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						6
Actuated Green, G (s)	15.2	15.2		1.7	1.7	1.7	6.1	53.1		0.7	46.7	46.7
Effective Green, g (s)	16.2	16.2		2.7	2.7	2.7	7.1	55.6		1.7	49.2	49.2
Actuated g/C Ratio	0.19	0.19		0.03	0.03	0.03	0.08	0.64		0.02	0.56	0.56
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		3.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0		2.0	2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)	638	296		55	58	49	280	2256		35	1997	893
v/s Ratio Prot	c0.09	0.08		0.01	c0.01		c0.07	0.44		0.00	c0.46	
v/s Ratio Perm						0.00						0.32
v/c Ratio	0.50	0.41		0.25	0.28	0.03	0.83	0.69		0.14	0.81	0.57
Uniform Delay, d1	31.9	31.3		41.3	41.3	41.0	39.5	10.2		42.0	15.3	12.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.9		0.9	0.9	0.1	17.2	1.2		0.7	3.0	1.4
Delay (s)	32.5	32.2		42.2	42.2	41.1	56.6	11.4		42.7	18.2	13.6
Level of Service	C	C		D	D	D	E	B		D	B	B
Approach Delay (s)		32.4			41.5			17.2			16.9	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	87.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

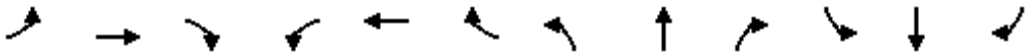
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	764	776	834	453	1028	812
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	3.0	3.0	1.7	2.0
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	3433	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	804	817	878	477	1082	855
RTOR Reduction (vph)	0	11	0	323	0	0
Lane Group Flow (vph)	804	806	878	154	1082	855
Turn Type		pm+ov		Perm	Prot	
Protected Phases	6	7	8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	23.0	50.0	26.7	26.7	27.0	60.0
Effective Green, g (s)	24.0	54.6	29.0	29.0	29.3	61.0
Actuated g/C Ratio	0.27	0.61	0.32	0.32	0.33	0.68
Clearance Time (s)	4.0	4.0	5.3	5.3	4.0	3.0
Vehicle Extension (s)	2.0	2.0	3.9	3.9	2.0	3.5
Lane Grp Cap (vph)	915	990	1140	510	1118	2399
v/s Ratio Prot	c0.23	0.27	c0.25		c0.32	0.24
v/s Ratio Perm		0.24		0.10		
v/c Ratio	0.88	0.81	0.77	0.30	0.97	0.36
Uniform Delay, d1	31.6	13.8	27.5	22.9	29.9	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.3	5.0	3.5	0.4	19.3	0.4
Delay (s)	40.9	18.7	30.9	23.3	49.2	6.6
Level of Service	D	B	C	C	D	A
Approach Delay (s)	29.7		28.3			30.4
Approach LOS	C		C			C

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.7
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	295	15	27	25	11	51	43	926	0	70	1328	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.92		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1665			1691		1770	3539		1770	3480	
Flt Permitted	0.95	0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1665			1691		1770	3539		1770	3480	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	311	16	28	26	12	54	45	975	0	74	1398	175
RTOR Reduction (vph)	0	5	0	0	40	0	0	0	0	0	7	0
Lane Group Flow (vph)	180	170	0	0	52	0	45	975	0	74	1566	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	17.4	17.4			7.8		4.8	79.6		8.3	82.7	
Effective Green, g (s)	17.4	17.4			7.8		4.8	79.6		8.3	82.7	
Actuated g/C Ratio	0.13	0.13			0.06		0.04	0.61		0.06	0.64	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.9		4.0	5.3	
Vehicle Extension (s)	2.0	2.0			2.0		2.0	4.2		2.0	3.2	
Lane Grp Cap (vph)	225	223			101		65	2167		113	2214	
v/s Ratio Prot	c0.11	0.10			c0.03		0.03	0.28		c0.04	c0.45	
v/s Ratio Perm												
v/c Ratio	0.80	0.76			0.51		0.69	0.45		0.65	0.71	
Uniform Delay, d1	54.6	54.3			59.2		61.9	13.5		59.5	15.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.2	12.9			1.8		22.6	0.7		9.9	1.1	
Delay (s)	71.8	67.2			61.1		84.5	14.2		69.4	16.7	
Level of Service	E	E			E		F	B		E	B	
Approach Delay (s)		69.5			61.1			17.3			19.1	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.3
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

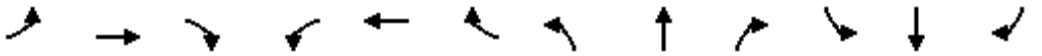


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	20	127	135	7	48	130	793	20	25	1154	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1778	1583	1770	3526		1770	3523	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1778	1583	1770	3526		1770	3523	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	166	21	134	142	7	51	137	835	21	26	1215	39
RTOR Reduction (vph)	0	0	116	0	0	46	0	1	0	0	1	0
Lane Group Flow (vph)	0	187	18	0	149	5	137	855	0	26	1253	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		17.2	17.2		14.0	14.0	13.4	78.3		3.6	68.5	
Effective Green, g (s)		17.2	17.2		14.0	14.0	13.4	78.3		3.6	68.5	
Actuated g/C Ratio		0.13	0.13		0.11	0.11	0.10	0.60		0.03	0.53	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.9		4.0	4.9	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)		236	209		191	170	182	2124		49	1856	
v/s Ratio Prot		c0.10			c0.08		c0.08	0.24		0.01	c0.36	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.79	0.08		0.78	0.03	0.75	0.40		0.53	0.67	
Uniform Delay, d1		54.7	49.5		56.5	51.9	56.7	13.6		62.4	22.6	
Progression Factor		1.00	1.00		1.00	1.00	0.89	1.00		1.00	1.00	
Incremental Delay, d2		15.5	0.1		17.1	0.0	5.2	0.2		5.4	1.1	
Delay (s)		70.2	49.6		73.6	52.0	55.7	13.8		67.8	23.7	
Level of Service		E	D		E	D	E	B		E	C	
Approach Delay (s)		61.6			68.1			19.6			24.6	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

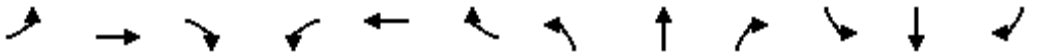
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	72	287	669	48	352	733
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	1583	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	1583	1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	302	704	51	371	772
RTOR Reduction (vph)	0	227	0	36	0	0
Lane Group Flow (vph)	76	76	704	15	371	772
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	11.8	11.8	13.8	13.8	15.9	33.7
Effective Green, g (s)	13.8	13.8	16.5	16.5	17.9	36.4
Actuated g/C Ratio	0.25	0.25	0.30	0.30	0.32	0.66
Clearance Time (s)	4.0	4.0	5.7	5.7	4.0	5.7
Vehicle Extension (s)	2.0	2.0	4.5	4.5	2.0	4.5
Lane Grp Cap (vph)	858	396	1520	473	574	3353
v/s Ratio Prot	0.02		c0.14		c0.21	0.15
v/s Ratio Perm		c0.05		0.01		
v/c Ratio	0.09	0.19	0.46	0.03	0.65	0.23
Uniform Delay, d1	15.9	16.3	15.7	13.7	15.9	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	0.4	0.0	1.9	0.1
Delay (s)	15.9	16.4	16.1	13.7	17.8	3.8
Level of Service	B	B	B	B	B	A
Approach Delay (s)	16.3		16.0			8.4
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	7.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	724	30	139	758	122	113	17	477	256	6	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5055		1770	5085	1583		1785	1583	1681	1689	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5055		1770	5085	1583		1785	1583	1681	1689	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	762	32	146	798	128	119	18	502	269	6	86
RTOR Reduction (vph)	0	5	0	0	0	83	0	0	183	0	0	71
Lane Group Flow (vph)	74	789	0	146	798	45	0	137	319	137	138	15
Turn Type	Prot			Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases						6			4			3
Actuated Green, G (s)	6.1	24.1		8.2	26.2	26.2		19.3	19.3	12.8	12.8	12.8
Effective Green, g (s)	7.1	26.4		9.2	28.5	28.5		20.3	20.3	13.8	13.8	13.8
Actuated g/C Ratio	0.09	0.32		0.11	0.35	0.35		0.25	0.25	0.17	0.17	0.17
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.9		2.0	4.9	4.9		2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	154	1633		199	1774	552		444	393	284	285	267
v/s Ratio Prot	0.04	0.16		c0.08	c0.16			0.08		0.08	c0.08	
v/s Ratio Perm						0.03			c0.20			0.01
v/c Ratio	0.48	0.48		0.73	0.45	0.08		0.31	0.81	0.48	0.48	0.05
Uniform Delay, d1	35.5	22.2		35.1	20.5	17.8		25.0	28.9	30.7	30.7	28.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.5		11.4	0.4	0.1		0.1	11.5	0.5	0.5	0.0
Delay (s)	36.4	22.6		46.4	20.9	18.0		25.1	40.4	31.2	31.2	28.5
Level of Service	D	C		D	C	B		C	D	C	C	C
Approach Delay (s)		23.8			24.0			37.1			30.6	
Approach LOS		C			C			D			C	

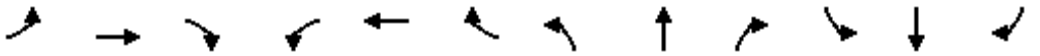
Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	195	664	526	80	599	183	483	683	57	160	639	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.9	2.9	3.0	2.6	2.6	3.0	3.0	4.3	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	205	699	554	84	631	193	508	719	60	168	673	343
RTOR Reduction (vph)	0	0	211	0	0	134	0	0	43	0	0	189
Lane Group Flow (vph)	205	699	343	84	631	59	508	719	17	168	673	154
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.2	22.8	22.8	6.1	20.3	20.3	10.2	20.5	20.5	8.2	18.5	18.5
Effective Green, g (s)	9.2	24.8	24.8	7.1	23.0	23.0	11.2	22.8	21.5	9.2	20.8	20.8
Actuated g/C Ratio	0.12	0.33	0.33	0.09	0.30	0.30	0.15	0.30	0.28	0.12	0.27	0.27
Clearance Time (s)	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	2.0	4.9	4.9	2.0	4.3	4.3	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	215	1158	518	166	1074	480	507	1530	449	431	1444	450
v/s Ratio Prot	c0.12	0.20		0.05	0.18		c0.15	c0.14		0.05	0.13	
v/s Ratio Perm			c0.22			0.04			0.01			0.09
v/c Ratio	0.95	0.60	0.66	0.51	0.59	0.12	1.00	0.47	0.04	0.39	0.47	0.34
Uniform Delay, d1	33.1	21.4	21.9	32.7	22.4	19.1	32.3	21.6	19.7	30.7	22.9	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.7	1.3	4.1	0.9	1.1	0.2	40.5	0.4	0.1	0.2	0.4	0.7
Delay (s)	80.7	22.7	26.0	33.6	23.4	19.3	72.8	21.9	19.7	30.9	23.3	22.8
Level of Service	F	C	C	C	C	B	E	C	B	C	C	C
Approach Delay (s)		32.1			23.5			41.9			24.2	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

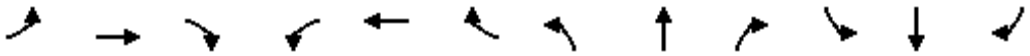


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	22	105	155	13	392	94	769	47	288	894	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	12	12	15	12
Grade (%)		0%			-3%			0%			-7%	
Total Lost time (s)		4.0	4.0		4.0	3.0	4.0	3.0		3.0	3.0	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.91	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1792	1583		1807	1597	1770	3730		1832	5790	1639
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1792	1583		1807	1597	1770	3730		1832	5790	1639
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	23	111	163	14	413	99	809	49	303	941	76
RTOR Reduction (vph)	0	0	100	0	0	87	0	5	0	0	0	47
Lane Group Flow (vph)	0	107	11	0	177	326	99	853	0	303	941	29
Confl. Peds. (#/hr)						1			8			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		Perm
Protected Phases	5	5		6	6	7	3	8		7	4	
Permitted Phases			5			6						4
Actuated Green, G (s)		6.7	6.7		12.1	24.5	6.5	20.5		12.4	26.4	26.4
Effective Green, g (s)		6.7	6.7		12.1	26.5	6.5	22.8		13.4	28.7	26.4
Actuated g/C Ratio		0.10	0.10		0.18	0.38	0.09	0.33		0.19	0.42	0.38
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.1		2.0	5.1	5.1
Lane Grp Cap (vph)		174	154		317	683	167	1233		356	2408	627
v/s Ratio Prot		c0.06			c0.10	0.09	0.06	c0.23		c0.17	0.16	
v/s Ratio Perm			0.01			0.11						0.02
v/c Ratio		0.61	0.07		0.56	0.48	0.59	0.69		0.85	0.39	0.05
Uniform Delay, d1		29.9	28.3		26.0	16.0	30.0	20.0		26.8	14.1	13.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		4.5	0.1		1.2	0.2	3.7	2.2		16.9	0.2	0.1
Delay (s)		34.4	28.4		27.2	16.2	33.7	22.2		43.7	14.3	13.5
Level of Service		C	C		C	B	C	C		D	B	B
Approach Delay (s)		31.3			19.5			23.4			21.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

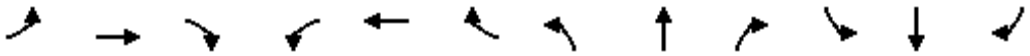
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	3	68	844	7	206	915
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.8		3.0	1.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3535		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3535		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	72	888	7	217	963
RTOR Reduction (vph)	0	61	1	0	0	0
Lane Group Flow (vph)	3	11	894	0	217	963
Turn Type		Perm			Prot	
Protected Phases	6		8		7	4
Permitted Phases		6				
Actuated Green, G (s)	6.0	6.0	19.2		7.5	32.5
Effective Green, g (s)	7.0	7.0	21.2		8.5	34.5
Actuated g/C Ratio	0.15	0.15	0.47		0.19	0.76
Clearance Time (s)	4.0	4.0	4.8		4.0	3.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	272	244	1647		331	2683
v/s Ratio Prot	0.00		c0.25		c0.12	0.27
v/s Ratio Perm		c0.01				
v/c Ratio	0.01	0.05	0.54		0.66	0.36
Uniform Delay, d1	16.3	16.4	8.7		17.1	1.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.1	0.4		4.6	0.1
Delay (s)	16.3	16.5	9.1		21.8	1.9
Level of Service	B	B	A		C	A
Approach Delay (s)	16.5		9.1			5.6
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	8.8
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	24	0	21	0	1383	28	32	1633	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0		3.0		2.9		2.0	2.9	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frt				1.00		0.85		1.00		1.00	1.00	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3529		1770	3539	
Flt Permitted				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1770		1583		3529		1770	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	25	0	22	0	1456	29	34	1719	0
RTOR Reduction (vph)	0	0	0	0	0	21	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	25	0	1	0	1484	0	34	1719	0
Turn Type	Perm		Perm	Prot		custom				Prot		
Protected Phases		4		3				2		1	6	
Permitted Phases	4		4			3						
Actuated Green, G (s)				2.2		2.2		46.0		1.5	50.5	
Effective Green, g (s)				3.2		3.2		48.0		2.5	52.5	
Actuated g/C Ratio				0.05		0.05		0.69		0.04	0.76	
Clearance Time (s)				4.0		4.0		4.9		3.0	4.9	
Vehicle Extension (s)				2.0		2.0		5.5		2.0	5.2	
Lane Grp Cap (vph)				82		73		2441		64	2677	
v/s Ratio Prot				c0.01				0.42		0.02	c0.49	
v/s Ratio Perm						0.00						
v/c Ratio				0.30		0.01		0.61		0.53	0.64	
Uniform Delay, d1				32.0		31.6		5.7		32.9	4.0	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.8		0.0		0.7		4.2	0.8	
Delay (s)				32.8		31.6		6.4		37.1	4.8	
Level of Service				C		C		A		D	A	
Approach Delay (s)		0.0			32.2			6.4			5.4	
Approach LOS		A			C			A			A	

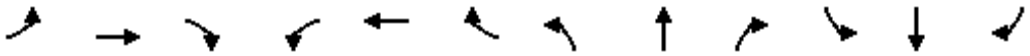
Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	13.7
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	11	53	62	17	65	34	1641	43	30	1799	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.3		3.0	2.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.88		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1605		1770	3521		1770	3525	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1605		1770	3521		1770	3525	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	12	56	65	18	68	36	1727	45	32	1894	38
RTOR Reduction (vph)	0	0	52	0	61	0	0	1	0	0	1	0
Lane Group Flow (vph)	65	12	4	65	25	0	36	1771	0	32	1931	0
Confl. Peds. (#/hr)						10			10			10
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3									
Actuated Green, G (s)	6.1	6.1	6.1	7.8	7.8		3.8	55.1		3.8	55.5	
Effective Green, g (s)	7.1	7.1	7.1	8.8	8.8		4.8	57.1		4.8	57.5	
Actuated g/C Ratio	0.08	0.08	0.08	0.10	0.10		0.05	0.63		0.05	0.64	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	5.3		4.0	4.9	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.0	4.3		2.0	3.9	
Lane Grp Cap (vph)	139	147	125	173	157		94	2231		94	2250	
v/s Ratio Prot	c0.04	0.01		c0.04	0.02		c0.02	0.50		0.02	c0.55	
v/s Ratio Perm			0.00									
v/c Ratio	0.47	0.08	0.04	0.38	0.16		0.38	0.79		0.34	0.86	
Uniform Delay, d1	39.7	38.5	38.3	38.1	37.3		41.2	12.2		41.1	13.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	0.2	0.1	1.1	0.4		0.9	2.2		0.8	3.6	
Delay (s)	41.8	38.7	38.4	39.2	37.6		42.2	14.4		41.9	16.6	
Level of Service	D	D	D	D	D		D	B		D	B	
Approach Delay (s)		40.1			38.3			14.9			17.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.1	Sum of lost time (s)	11.9
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

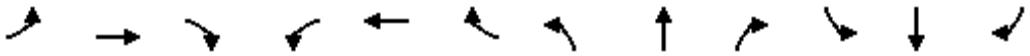
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	26	10	105	31	58	5	2163	9	39	2494	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2013			1964		1770	4984		1770	4965	
Flt Permitted		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2013			1964		1770	4984		1770	4965	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	27	11	111	33	61	5	2277	9	41	2625	77
RTOR Reduction (vph)	0	3	0	0	10	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	93	0	0	195	0	5	2286	0	41	2700	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split			Split			Prot			Prot		
Protected Phases	1	1		2	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)		10.3			19.4		2.4	95.6		7.0	100.2	
Effective Green, g (s)		11.3			20.4		3.4	98.3		8.0	102.9	
Actuated g/C Ratio		0.08			0.14		0.02	0.66		0.05	0.69	
Clearance Time (s)		4.0			4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.0			2.0		2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		152			267		40	3266		94	3406	
v/s Ratio Prot		c0.05			c0.10		0.00	c0.46		0.02	c0.54	
v/s Ratio Perm												
v/c Ratio		0.61			0.73		0.12	0.70		0.44	0.79	
Uniform Delay, d1		67.2			62.1		71.8	16.5		68.8	16.2	
Progression Factor		1.00			1.00		0.77	0.39		1.00	1.44	
Incremental Delay, d2		5.1			8.2		0.4	0.5		0.6	1.0	
Delay (s)		72.3			70.3		55.9	6.9		69.1	24.4	
Level of Service		E			E		E	A		E	C	
Approach Delay (s)		72.3			70.3			7.0			25.0	
Approach LOS		E			E			A			C	

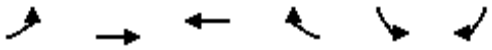
Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



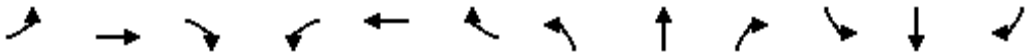
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	0	211	370	0	7	60	2189	43	4	2443	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0		3.0	3.0	4.2		2.0	4.2	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00		0.97	1.00		0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1540	1770		1554	1770	5067		1770	5019	
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1540	1770		1554	1770	5067		1770	5019	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	0	222	389	0	7	63	2304	45	4	2572	189
RTOR Reduction (vph)	0	0	73	0	0	5	0	1	0	0	5	0
Lane Group Flow (vph)	26	0	149	389	0	2	63	2348	0	4	2756	0
Confl. Peds. (#/hr)	4		4	4		4	4		4	4		4
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Prot		custom	Prot		custom	Prot			Prot		
Protected Phases	6			5			7	4		3	8	
Permitted Phases			6			5						
Actuated Green, G (s)	36.0		36.0	36.0		36.0	8.5	96.7		0.6	88.8	
Effective Green, g (s)	37.0		37.0	37.0		37.0	9.5	98.2		2.6	90.3	
Actuated g/C Ratio	0.25		0.25	0.25		0.25	0.06	0.65		0.02	0.60	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0		2.0	2.0		2.0	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)	437		380	437		383	112	3317		31	3021	
v/s Ratio Prot	0.01			c0.22			c0.04	0.46		0.00	c0.55	
v/s Ratio Perm			0.10			0.00						
v/c Ratio	0.06		0.39	0.89		0.01	0.56	0.71		0.13	0.91	
Uniform Delay, d1	43.2		47.1	54.5		42.6	68.2	16.7		72.6	26.4	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		0.75	0.72	
Incremental Delay, d2	0.0		0.2	19.3		0.0	3.8	1.3		0.4	3.2	
Delay (s)	43.2		47.4	73.8		42.6	72.0	18.0		54.9	22.2	
Level of Service	D		D	E		D	E	B		D	C	
Approach Delay (s)		46.9			73.3			19.4			22.2	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



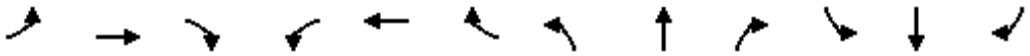
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	2	313	340	52	187	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.7	4.7	4.7	3.9	3.9
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	329	358	55	197	32
RTOR Reduction (vph)	0	0	0	32	0	24
Lane Group Flow (vph)	2	329	358	23	197	8
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.6	21.3	16.7	16.7	10.1	10.1
Effective Green, g (s)	1.6	22.3	17.7	17.7	11.1	11.1
Actuated g/C Ratio	0.04	0.53	0.42	0.42	0.26	0.26
Clearance Time (s)	4.0	5.7	5.7	5.7	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	4.5	2.0	2.0
Lane Grp Cap (vph)	67	1879	1491	667	468	418
v/s Ratio Prot	0.00	c0.09	c0.10		c0.11	
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.03	0.18	0.24	0.03	0.42	0.02
Uniform Delay, d1	19.5	5.1	7.8	7.1	12.8	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.1	0.0	0.2	0.0
Delay (s)	19.5	5.2	8.0	7.2	13.0	11.4
Level of Service	B	A	A	A	B	B
Approach Delay (s)		5.3	7.9		12.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



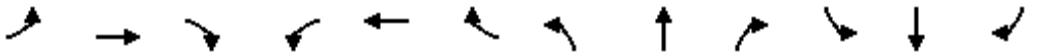
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	396	502	162	306	151	399	534	166	33	478	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.6	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4983	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	4983	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	417	528	171	322	159	420	562	175	35	503	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	24	0
Lane Group Flow (vph)	40	417	528	171	322	159	420	562	175	35	557	0
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			
Actuated Green, G (s)	3.4	17.5	83.8	8.1	22.6	83.8	20.1	35.2	83.8	4.0	19.1	
Effective Green, g (s)	4.4	20.2	83.8	9.1	25.3	83.8	21.1	37.5	83.8	5.0	21.4	
Actuated g/C Ratio	0.05	0.24	1.00	0.11	0.30	1.00	0.25	0.45	1.00	0.06	0.26	
Clearance Time (s)	4.0	5.7		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	4.3		2.0	4.9		2.0	4.9		2.0	4.9	
Lane Grp Cap (vph)	93	853	1583	192	1068	1583	446	1584	1583	106	1273	
v/s Ratio Prot	0.02	c0.12		c0.10	0.09		c0.24	0.16		0.02	c0.11	
v/s Ratio Perm			0.33			0.10			0.11			
v/c Ratio	0.43	0.49	0.33	0.89	0.30	0.10	0.94	0.35	0.11	0.33	0.44	
Uniform Delay, d1	38.5	27.4	0.0	36.9	22.5	0.0	30.7	15.2	0.0	37.8	26.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.7	0.6	35.5	0.3	0.1	28.1	0.3	0.1	0.7	0.5	
Delay (s)	39.6	28.1	0.6	72.4	22.8	0.1	58.8	15.5	0.1	38.5	26.6	
Level of Service	D	C	A	E	C	A	E	B	A	D	C	
Approach Delay (s)		13.8			30.3			28.9			27.3	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	26	109	162	33	127	45	841	28	64	1370	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.3	3.3		3.3	3.3	2.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844	1583		1789	1583	1770	3522		1770	3526	
Flt Permitted		0.93	1.00		0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1734	1583		1376	1583	1770	3522		1770	3526	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	27	115	171	35	134	47	885	29	67	1442	36
RTOR Reduction (vph)	0	0	62	0	0	104	0	4	0	0	3	0
Lane Group Flow (vph)	0	34	53	0	206	30	47	910	0	67	1475	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		6			6		3	8		7	4	
Permitted Phases	6		6	6		6						
Actuated Green, G (s)		11.7	11.7		11.7	11.7	2.8	30.7		3.0	31.9	
Effective Green, g (s)		13.3	13.3		13.3	13.3	3.8	33.4		4.0	34.6	
Actuated g/C Ratio		0.22	0.22		0.22	0.22	0.06	0.56		0.07	0.58	
Clearance Time (s)		4.9	4.9		4.9	4.9	3.0	5.7		4.0	5.7	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.0	3.8		2.0	3.8	
Lane Grp Cap (vph)		384	351		305	351	112	1961		118	2033	
v/s Ratio Prot							0.03	c0.26		0.04	c0.42	
v/s Ratio Perm		0.02	0.03		c0.15	0.02						
v/c Ratio		0.09	0.15		0.68	0.08	0.42	0.46		0.57	0.73	
Uniform Delay, d1		18.5	18.8		21.4	18.5	27.0	8.0		27.2	9.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.1		5.3	0.1	0.9	0.2		3.7	2.3	
Delay (s)		18.6	18.9		26.7	18.6	28.0	8.2		30.9	11.5	
Level of Service		B	B		C	B	C	A		C	B	
Approach Delay (s)		18.9			23.5			9.1			12.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.3
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

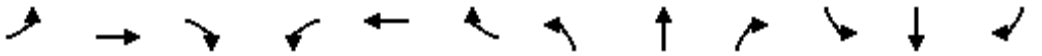


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	2	1	53	5	55	1	911	27	95	1556	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.7	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1583		1781	1583	1770	3524		1770	3537	
Flt Permitted		0.86	1.00		0.76	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1596	1583		1417	1583	1770	3524		1770	3537	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	2	1	56	5	58	1	959	28	100	1638	6
RTOR Reduction (vph)	0	0	1	0	0	50	0	2	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	61	8	1	985	0	100	1644	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4		4						
Actuated Green, G (s)		12.1	12.1		12.1	12.1	0.6	56.0		8.2	63.6	
Effective Green, g (s)		13.1	13.1		13.1	13.1	1.6	59.0		9.2	66.6	
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.02	0.66		0.10	0.74	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.7	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.0	4.3		3.0	4.3	
Lane Grp Cap (vph)		232	230		206	230	31	2310		181	2617	
v/s Ratio Prot							0.00	c0.28		0.06	c0.46	
v/s Ratio Perm		0.01	0.00		c0.04	0.01						
v/c Ratio		0.04	0.00		0.30	0.04	0.03	0.43		0.55	0.63	
Uniform Delay, d1		33.0	32.9		34.3	33.0	43.4	7.4		38.4	5.7	
Progression Factor		1.00	1.00		1.00	1.00	0.71	0.11		1.00	1.00	
Incremental Delay, d2		0.1	0.0		0.8	0.1	0.1	0.2		3.6	1.2	
Delay (s)		33.1	32.9		35.1	33.1	31.0	1.0		42.1	6.8	
Level of Service		C	C		D	C	C	A		D	A	
Approach Delay (s)		33.1			34.1			1.0			8.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

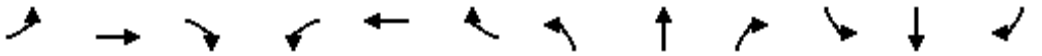
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	8	101	875	57	128	1484
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	2.7		3.0	2.7
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3507		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3507		1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	106	921	60	135	1562
RTOR Reduction (vph)	0	93	4	0	0	0
Lane Group Flow (vph)	8	13	977	0	135	1562
Turn Type		Perm			Prot	
Protected Phases	4		6		5	2
Permitted Phases		4				
Actuated Green, G (s)	9.8	9.8	47.8		18.7	70.5
Effective Green, g (s)	10.8	10.8	50.8		19.7	73.5
Actuated g/C Ratio	0.12	0.12	0.56		0.22	0.82
Clearance Time (s)	4.0	4.0	5.7		4.0	5.7
Vehicle Extension (s)	2.0	2.0	3.6		2.0	3.6
Lane Grp Cap (vph)	212	190	1980		387	2890
v/s Ratio Prot	0.00		0.28		0.08	c0.44
v/s Ratio Perm		c0.01				
v/c Ratio	0.04	0.07	0.49		0.35	0.54
Uniform Delay, d1	35.0	35.1	11.8		29.7	2.7
Progression Factor	1.00	1.00	1.00		0.78	0.09
Incremental Delay, d2	0.0	0.1	0.2		0.2	0.6
Delay (s)	35.0	35.2	12.1		23.2	0.9
Level of Service	D	D	B		C	A
Approach Delay (s)	35.2		12.1			2.6
Approach LOS	D		B			A

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.7
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



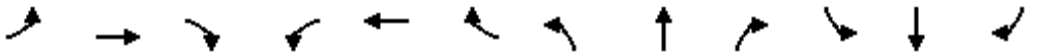
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	274	0	234	2	0	2	248	752	4	0	909	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	12	12	12	12	12	12	12	12	10
Grade (%)		0%			0%			5%			-5%	
Total Lost time (s)	3.5	3.5			3.0		3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00	0.98			1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85			0.93		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400	1542			1695		1660	3417	1544		3491	1500
Flt Permitted	0.95	1.00			0.98		0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400	1542			1695		1660	3417	1544		3491	1500
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	288	0	246	2	0	2	261	792	4	0	957	147
RTOR Reduction (vph)	0	188	0	0	2	0	0	0	1	0	0	89
Lane Group Flow (vph)	288	58	0	0	2	0	261	792	3	0	957	58
Confl. Bikes (#/hr)			5									
Heavy Vehicles (%)	3%	2%	3%	2%	2%	2%	6%	3%	2%	2%	6%	3%
Turn Type	Split			Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.9	12.9			1.3		8.3	35.0	35.0		22.7	22.7
Effective Green, g (s)	15.4	15.4			2.3		9.3	38.4	38.4		26.1	26.1
Actuated g/C Ratio	0.23	0.23			0.04		0.14	0.59	0.59		0.40	0.40
Clearance Time (s)	6.0	6.0			4.0		4.0	6.4	6.4		6.4	6.4
Vehicle Extension (s)	4.1	4.1			2.0		2.0	4.3	4.3		4.3	4.3
Lane Grp Cap (vph)	798	362			59		235	2000	904		1389	597
v/s Ratio Prot	c0.08	0.04			c0.00		c0.16	0.23			c0.27	
v/s Ratio Perm									0.00			0.04
v/c Ratio	0.36	0.16			0.04		1.11	0.40	0.00		0.69	0.10
Uniform Delay, d1	21.0	20.0			30.6		28.1	7.3	5.6		16.4	12.4
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.3			0.1		91.6	0.2	0.0		1.6	0.1
Delay (s)	21.4	20.3			30.7		119.7	7.5	5.7		18.0	12.5
Level of Service	C	C			C		F	A	A		B	B
Approach Delay (s)		20.9			30.7			35.2			17.3	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



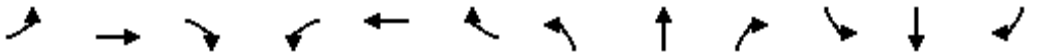
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	0	53	1	0	6	118	992	1	1	1085	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	3.0		4.0	4.0	3.0	5.4	6.4	4.0	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	0	56	1	0	6	124	1044	1	1	1142	63
RTOR Reduction (vph)	0	0	49	0	0	6	0	0	0	0	0	18
Lane Group Flow (vph)	0	27	7	0	1	0	124	1044	1	1	1142	45
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	2	2		6	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)		7.8	7.8		4.0	4.0	7.2	43.2	43.2	0.7	36.7	36.7
Effective Green, g (s)		7.8	8.8		4.0	4.0	8.2	44.2	43.2	0.7	37.7	37.7
Actuated g/C Ratio		0.11	0.12		0.05	0.05	0.11	0.60	0.58	0.01	0.51	0.51
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	6.4	6.4	4.0	6.4	6.4
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)		186	188		96	85	196	2111	923	17	1801	805
v/s Ratio Prot		c0.02			c0.00		c0.07	0.29		0.00	c0.32	
v/s Ratio Perm			0.00			0.00			0.00			0.03
v/c Ratio		0.15	0.04		0.01	0.00	0.63	0.49	0.00	0.06	0.63	0.06
Uniform Delay, d1		30.1	28.9		33.2	33.2	31.5	8.6	6.4	36.4	13.2	9.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.0		0.0	0.0	4.8	0.3	0.0	0.5	0.9	0.0
Delay (s)		30.3	28.9		33.2	33.2	36.3	8.8	6.4	36.9	14.1	9.2
Level of Service		C	C		C	C	D	A	A	D	B	A
Approach Delay (s)		29.4			33.2			11.8			13.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	16.4
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



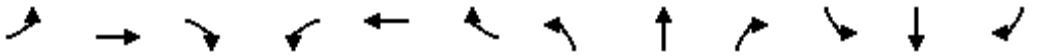
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	1	501	7	1	5	295	1005	10	4	1053	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	4.7	4.7		3.0	2.6	2.6	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1583	1610	3034		1770	3539	1583	1770	5085	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1583	1610	3034		1770	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	114	1	527	7	1	5	311	1058	11	4	1108	77
RTOR Reduction (vph)	0	0	278	0	8	0	0	0	5	0	0	48
Lane Group Flow (vph)	57	58	249	5	0	0	311	1058	6	4	1108	29
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.9	13.9	13.9	1.3	1.3		10.6	33.1	33.1	0.8	22.9	22.9
Effective Green, g (s)	16.6	16.6	16.6	2.3	2.3		11.6	36.5	36.5	1.8	26.3	26.3
Actuated g/C Ratio	0.24	0.24	0.24	0.03	0.03		0.16	0.52	0.52	0.03	0.37	0.37
Clearance Time (s)	5.7	5.7	5.7	5.7	5.7		4.0	6.0	6.0	4.0	6.4	6.4
Vehicle Extension (s)	4.3	4.3	4.3	4.3	4.3		2.0	4.8	4.8	2.0	4.3	4.3
Lane Grp Cap (vph)	396	397	373	53	99		291	1832	820	45	1897	591
v/s Ratio Prot	0.03	0.03		c0.00	0.00		c0.18	c0.30		0.00	0.22	
v/s Ratio Perm			c0.16						0.00			0.02
v/c Ratio	0.14	0.15	0.67	0.09	0.00		1.07	0.58	0.01	0.09	0.58	0.05
Uniform Delay, d1	21.3	21.3	24.4	33.1	33.0		29.4	11.7	8.2	33.5	17.7	14.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	5.2	1.2	0.0		72.2	0.7	0.0	0.3	0.6	0.1
Delay (s)	21.6	21.6	29.6	34.3	33.0		101.6	12.4	8.2	33.9	18.3	14.2
Level of Service	C	C	C	C	C		F	B	A	C	B	B
Approach Delay (s)		28.2			33.5			32.4			18.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	10.7
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	256	4	288	120	5	65	147	1372	45	94	1554	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	2.7		3.0	2.0	
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1688	1583		1777	1583	1770	5061		1770	5005	
Flt Permitted	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1688	1583		1777	1583	1770	5061		1770	5005	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	269	4	303	126	5	68	155	1444	47	99	1636	193
RTOR Reduction (vph)	0	0	263	0	0	60	0	2	0	0	10	0
Lane Group Flow (vph)	137	136	40	0	131	8	155	1489	0	99	1819	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)	14.8	14.8	14.8		13.0	13.0	14.1	63.0		11.5	61.1	
Effective Green, g (s)	15.8	15.8	15.8		14.0	14.0	15.1	66.0		12.5	64.1	
Actuated g/C Ratio	0.13	0.13	0.13		0.12	0.12	0.13	0.55		0.10	0.53	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	5.7		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	5.3		2.0	5.3	
Lane Grp Cap (vph)	221	222	208		207	185	223	2784		184	2674	
v/s Ratio Prot	c0.08	0.08			c0.07		c0.09	0.29		0.06	c0.36	
v/s Ratio Perm			0.03			0.01						
v/c Ratio	0.62	0.61	0.19		0.63	0.04	0.70	0.53		0.54	0.68	
Uniform Delay, d1	49.3	49.2	46.4		50.5	47.1	50.2	17.2		51.0	20.4	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	3.5	0.2		4.6	0.0	7.4	0.7		1.5	1.0	
Delay (s)	52.9	52.7	46.6		55.1	47.1	57.6	18.0		52.5	21.4	
Level of Service	D	D	D		E	D	E	B		D	C	
Approach Delay (s)		49.5			52.4			21.7			23.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

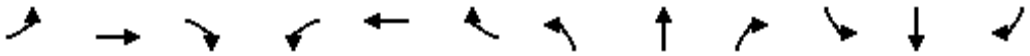


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	333	108	74	22	87	37	256	1436	23	54	2080	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.91	0.91			0.95		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.97			0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3205			3380		3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	0.72			0.76		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	2372			2591		3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	351	114	78	23	92	39	269	1512	24	57	2189	411
RTOR Reduction (vph)	0	17	0	0	28	0	0	0	11	0	0	142
Lane Group Flow (vph)	183	343	0	0	126	0	269	1512	13	57	2189	269
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	16.2	35.1			13.2		11.6	63.7	63.7	7.2	59.3	59.3
Effective Green, g (s)	17.2	37.8			15.9		12.6	66.7	66.7	8.2	62.3	62.3
Actuated g/C Ratio	0.14	0.31			0.13		0.10	0.56	0.56	0.07	0.52	0.52
Clearance Time (s)	4.0	5.7			5.7		4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.3			4.3		2.0	4.6	4.6	2.0	4.6	4.6
Lane Grp Cap (vph)	231	878			343		360	2826	880	121	2640	822
v/s Ratio Prot	c0.11	0.06					c0.08	0.30		0.03	c0.43	
v/s Ratio Perm		c0.06			0.05				0.01			0.17
v/c Ratio	0.79	0.39			1.22dr		0.75	0.54	0.02	0.47	0.83	0.33
Uniform Delay, d1	49.7	32.1			47.5		52.2	16.8	11.9	53.8	24.4	16.7
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.8	0.5			1.1		7.2	0.7	0.0	1.1	2.5	0.4
Delay (s)	65.4	32.6			48.5		59.4	17.6	12.0	54.9	26.9	17.1
Level of Service	E	C			D		E	B	B	D	C	B
Approach Delay (s)		43.6			48.5			23.7			26.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

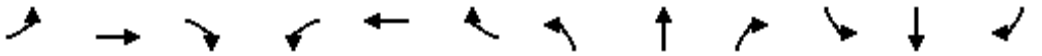
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	557	17	14	258	8	14	2	15	7	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.93			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	3523		1770	3524			1702			1708	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (perm)	1770	3523		1770	3524			1702			1708	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	586	18	15	272	8	15	2	16	7	0	5
RTOR Reduction (vph)	0	2	0	0	2	0	0	14	0	0	5	0
Lane Group Flow (vph)	6	602	0	15	278	0	0	19	0	0	7	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		1	1	
Permitted Phases												
Actuated Green, G (s)	0.8	25.4		0.6	25.2			4.1			0.9	
Effective Green, g (s)	1.8	28.1		1.6	27.9			5.1			1.9	
Actuated g/C Ratio	0.04	0.58		0.03	0.57			0.10			0.04	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0			4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	65	2033		58	2019			178			67	
v/s Ratio Prot	0.00	c0.17		c0.01	0.08			c0.01			c0.00	
v/s Ratio Perm												
v/c Ratio	0.09	0.30		0.26	0.14			0.10			0.11	
Uniform Delay, d1	22.7	5.3		23.0	4.8			19.7			22.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.1		0.9	0.1			0.1			0.3	
Delay (s)	22.9	5.4		23.8	4.9			19.8			22.8	
Level of Service	C	A		C	A			B			C	
Approach Delay (s)		5.6			5.8			19.8			22.8	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	539	12	39	323	34	4	0	13	12	0	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.7	3.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.90			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1649			1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1649			1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	166	567	13	41	340	36	4	0	14	13	0	129
RTOR Reduction (vph)	0	0	6	0	0	22	0	13	0	0	0	105
Lane Group Flow (vph)	166	567	7	41	340	14	0	5	0	0	13	24
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		5	5		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	7.7	23.9	23.9	2.3	18.5	18.5		1.0			8.5	8.5
Effective Green, g (s)	8.7	26.9	26.9	3.3	21.5	21.5		2.0			10.5	10.5
Actuated g/C Ratio	0.16	0.49	0.49	0.06	0.39	0.39		0.04			0.19	0.19
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			5.7	5.7
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0			2.0	2.0
Lane Grp Cap (vph)	278	1718	769	105	1373	614		60			335	300
v/s Ratio Prot	c0.09	c0.16		0.02	0.10			c0.00			0.01	
v/s Ratio Perm			0.00			0.01						c0.02
v/c Ratio	0.60	0.33	0.01	0.39	0.25	0.02		0.08			0.04	0.08
Uniform Delay, d1	21.7	8.7	7.4	25.1	11.5	10.5		25.8			18.3	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	2.3	0.1	0.0	0.9	0.1	0.0		0.2			0.0	0.0
Delay (s)	24.0	8.9	7.4	26.0	11.6	10.5		26.0			18.3	18.5
Level of Service	C	A	A	C	B	B		C			B	B
Approach Delay (s)		12.2			12.9			26.0			18.5	
Approach LOS		B			B			C			B	

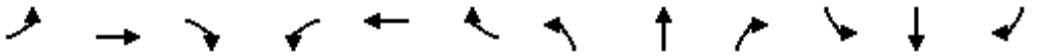
Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	9.7
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	348	2	50	239	6	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	366	2	53	252	6	57
RTOR Reduction (vph)	0	1	0	0	0	44
Lane Group Flow (vph)	366	1	53	252	6	13
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	9.9	9.9	2.3	17.2	7.7	7.7
Effective Green, g (s)	9.9	9.9	2.3	17.2	7.7	7.7
Actuated g/C Ratio	0.28	0.28	0.07	0.49	0.22	0.22
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1004	449	117	1744	391	349
v/s Ratio Prot	c0.10		c0.03	0.07	0.00	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.36	0.00	0.45	0.14	0.02	0.04
Uniform Delay, d1	10.0	9.0	15.7	4.8	10.6	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	2.8	0.0	0.0	0.0
Delay (s)	10.2	9.0	18.5	4.9	10.7	10.7
Level of Service	B	A	B	A	B	B
Approach Delay (s)	10.2			7.2	10.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	34.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

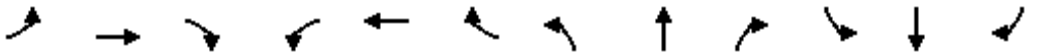
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1183	492	243	609	102	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1245	518	256	641	107	343
RTOR Reduction (vph)	0	278	0	502	0	0
Lane Group Flow (vph)	1245	240	256	139	107	343
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	32.2	32.2	15.0	15.0	7.2	27.2
Effective Green, g (s)	32.2	32.2	15.0	15.0	7.2	27.2
Actuated g/C Ratio	0.46	0.46	0.22	0.22	0.10	0.39
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1593	734	765	342	184	1387
v/s Ratio Prot	c0.36		0.07		c0.06	0.10
v/s Ratio Perm		0.15		c0.09		
v/c Ratio	0.78	0.33	0.33	0.41	0.58	0.25
Uniform Delay, d1	15.6	11.8	23.0	23.4	29.7	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.3	0.3	0.8	4.6	0.1
Delay (s)	18.2	12.0	23.2	24.2	34.3	14.3
Level of Service	B	B	C	C	C	B
Approach Delay (s)	16.4		23.9			19.1
Approach LOS	B		C			B

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	352	6	1	648	566	2	13	5	198	10	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	2.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1851	1583		1778	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1851	1583		1778	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	371	6	1	682	596	2	14	5	208	11	61
RTOR Reduction (vph)	0	0	3	0	0	358	0	0	5	0	0	45
Lane Group Flow (vph)	52	371	3	1	682	238	0	16	0	0	219	16
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	1.4	20.4	20.4	0.7	18.7	18.7		2.8	2.8		13.4	13.4
Effective Green, g (s)	2.4	23.4	23.4	1.7	21.7	21.7		3.8	3.8		14.4	14.4
Actuated g/C Ratio	0.04	0.43	0.43	0.03	0.40	0.40		0.07	0.07		0.27	0.27
Clearance Time (s)	4.0	6.0	6.0	3.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.4	3.4	2.0	3.4	3.4		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	78	1525	682	55	1414	633		130	111		472	420
v/s Ratio Prot	c0.03	0.10		0.00	c0.19			c0.01			c0.12	
v/s Ratio Perm			0.00			0.15			0.00			0.01
v/c Ratio	0.67	0.24	0.00	0.02	0.48	0.38		0.12	0.00		0.46	0.04
Uniform Delay, d1	25.6	9.8	8.8	25.5	12.1	11.5		23.7	23.5		16.7	14.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	15.4	0.1	0.0	0.0	0.3	0.4		0.2	0.0		0.3	0.0
Delay (s)	41.0	9.9	8.8	25.5	12.4	11.9		23.8	23.5		17.0	14.8
Level of Service	D	A	A	C	B	B		C	C		B	B
Approach Delay (s)		13.7			12.2			23.8			16.5	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

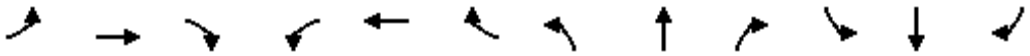


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	524	10	86	1204	61	7	5	43	43	4	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	552	11	91	1267	64	7	5	45	45	4	22
RTOR Reduction (vph)	0	0	6	0	0	33	0	0	38	0	0	18
Lane Group Flow (vph)	33	552	5	91	1267	31	7	5	7	45	4	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.6	29.7	29.7	5.2	32.3	32.3	1.0	10.4	10.4	4.3	11.7	11.7
Effective Green, g (s)	2.6	29.7	29.7	5.2	32.3	32.3	1.0	10.4	10.4	4.3	11.7	11.7
Actuated g/C Ratio	0.04	0.44	0.44	0.08	0.48	0.48	0.01	0.15	0.15	0.06	0.17	0.17
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	68	1555	695	136	1691	756	26	287	244	113	322	274
v/s Ratio Prot	0.02	0.16		c0.05	c0.36		0.00	0.00		c0.03	0.00	
v/s Ratio Perm			0.00			0.02			c0.00			c0.00
v/c Ratio	0.49	0.35	0.01	0.67	0.75	0.04	0.27	0.02	0.03	0.40	0.01	0.01
Uniform Delay, d1	31.8	12.6	10.7	30.4	14.4	9.4	32.9	24.3	24.3	30.4	23.2	23.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	0.1	0.0	11.8	1.9	0.0	5.5	0.0	0.0	2.3	0.0	0.0
Delay (s)	37.2	12.7	10.7	42.2	16.2	9.4	38.5	24.3	24.4	32.7	23.2	23.2
Level of Service	D	B	B	D	B	A	D	C	C	C	C	C
Approach Delay (s)		14.0			17.6			26.1			29.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	23.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

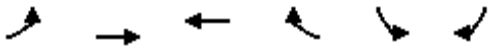
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	372	297	25	144	925	152	35	578	134	270	606	548
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.7	3.0	2.0	2.7	3.0	3.0	3.3	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	392	313	26	152	974	160	37	608	141	284	638	577
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	392	313	26	152	974	160	37	608	141	284	638	577
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.0	29.0	84.6	8.4	26.4	84.6	4.7	20.5	84.6	8.0	24.1	84.6
Effective Green, g (s)	11.0	32.0	84.6	9.4	29.4	84.6	5.7	23.2	84.6	9.0	26.8	84.6
Actuated g/C Ratio	0.13	0.38	1.00	0.11	0.35	1.00	0.07	0.27	1.00	0.11	0.32	1.00
Clearance Time (s)	4.0	5.7		3.0	5.7		4.0	6.0		4.0	5.7	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	4.1		2.0	4.5	
Lane Grp Cap (vph)	446	1339	1583	381	1230	1583	231	971	1583	365	1121	1583
v/s Ratio Prot	c0.11	0.09		0.04	c0.28		0.01	0.17		c0.08	c0.18	
v/s Ratio Perm			0.02			0.10			0.09			c0.36
v/c Ratio	0.88	0.23	0.02	0.40	0.79	0.10	0.16	0.63	0.09	0.78	0.57	0.36
Uniform Delay, d1	36.1	17.9	0.0	35.0	24.8	0.0	37.2	26.9	0.0	36.8	24.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.1	0.2	0.0	0.3	4.0	0.1	0.1	1.5	0.1	9.2	1.0	0.7
Delay (s)	53.2	18.1	0.0	35.2	28.8	0.1	37.3	28.4	0.1	46.0	25.0	0.7
Level of Service	D	B	A	D	C	A	D	C	A	D	C	A
Approach Delay (s)		36.3			26.0			23.7			19.6	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	8.7
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



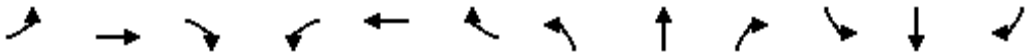
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	486	180	145	1041	50	164	243	13	60	138	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	2.6		3.0	2.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3396		1770	3515		1770	1848		1770	1790	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3396		1770	3515		1770	1848		1770	1790	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	512	189	153	1096	53	173	256	14	63	145	51
RTOR Reduction (vph)	0	41	0	0	3	0	0	2	0	0	15	0
Lane Group Flow (vph)	42	660	0	153	1146	0	173	268	0	63	181	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.1	23.4		10.6	30.9		10.8	23.2		4.2	16.6	
Effective Green, g (s)	4.1	26.1		11.6	33.6		11.8	25.5		5.2	18.9	
Actuated g/C Ratio	0.05	0.33		0.14	0.42		0.15	0.32		0.07	0.24	
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.0	3.8		2.0	3.8		2.0	3.9		2.0	3.9	
Lane Grp Cap (vph)	91	1108		257	1476		261	589		115	423	
v/s Ratio Prot	0.02	0.19		c0.09	c0.33		c0.10	c0.14		0.04	0.10	
v/s Ratio Perm												
v/c Ratio	0.46	0.60		0.60	0.78		0.66	0.45		0.55	0.43	
Uniform Delay, d1	36.9	22.5		32.0	20.0		32.2	21.7		36.3	26.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	1.0		2.5	2.8		4.8	0.7		2.8	0.9	
Delay (s)	38.2	23.5		34.5	22.7		37.1	22.5		39.1	26.9	
Level of Service	D	C		C	C		D	C		D	C	
Approach Delay (s)		24.3			24.1			28.2			29.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



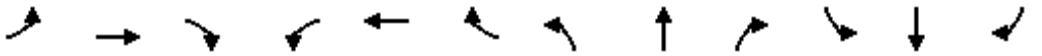
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	515	1351	27	30	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3529		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3529		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	542	1422	28	32	6
RTOR Reduction (vph)	0	0	1	0	0	5
Lane Group Flow (vph)	12	542	1449	0	32	1
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	0.9	44.5	39.6		7.5	7.5
Effective Green, g (s)	1.9	47.2	42.3		8.5	8.5
Actuated g/C Ratio	0.03	0.76	0.69		0.14	0.14
Clearance Time (s)	4.0	5.7	5.7		4.0	4.0
Vehicle Extension (s)	2.0	3.8	3.8		2.0	2.0
Lane Grp Cap (vph)	55	2707	2419		244	218
v/s Ratio Prot	0.01	c0.15	c0.41		c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.22	0.20	0.60		0.13	0.00
Uniform Delay, d1	29.2	2.0	5.2		23.4	22.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.0	0.5		0.1	0.0
Delay (s)	29.9	2.1	5.6		23.4	22.9
Level of Service	C	A	A		C	C
Approach Delay (s)		2.7	5.6		23.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	5.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



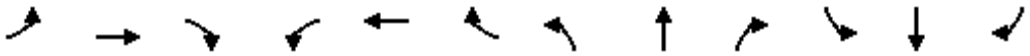
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	472	58	115	1379	0	68	0	59	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.7	4.7	2.0	2.7			2.0	2.0			
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00			
Frt		1.00	0.85	1.00	1.00			1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3539	1583	1770	3539			1770	1583			
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (perm)		3539	1583	1770	3539			1770	1583			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	497	61	121	1452	0	72	0	62	0	0	0
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	49	0	0	0
Lane Group Flow (vph)	0	497	25	121	1452	0	0	72	13	0	0	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2						3			
Actuated Green, G (s)		19.5	19.5	7.5	31.0			8.5	8.5			
Effective Green, g (s)		22.5	20.5	9.5	34.0			10.5	10.5			
Actuated g/C Ratio		0.46	0.42	0.19	0.69			0.21	0.21			
Clearance Time (s)		5.7	5.7	4.0	5.7			4.0	4.0			
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		1618	660	342	2446			378	338			
v/s Ratio Prot		0.14		0.07	c0.41			c0.04				
v/s Ratio Perm			0.02						0.01			
v/c Ratio		0.31	0.04	0.35	0.59			0.19	0.04			
Uniform Delay, d1		8.4	8.5	17.2	4.0			15.9	15.3			
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.1	0.0	0.6	0.4			0.2	0.0			
Delay (s)		8.5	8.5	17.8	4.4			16.1	15.4			
Level of Service		A	A	B	A			B	B			
Approach Delay (s)		8.5			5.4			15.8			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	4.7
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



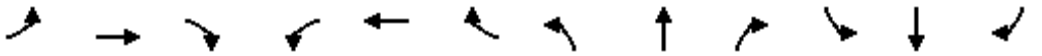
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	604	38	104	1423	5	46	17	115	24	15	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3508		1770	3537			1797	1583		1808	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.79	1.00		0.83	1.00
Satd. Flow (perm)	1770	3508		1770	3537			1471	1583		1548	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	39	636	40	109	1498	5	48	18	121	25	16	26
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	101	0	0	22
Lane Group Flow (vph)	39	672	0	109	1503	0	0	66	20	0	41	4
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		4
Actuated Green, G (s)	1.9	30.7		6.2	35.0			9.0	9.0		9.0	9.0
Effective Green, g (s)	2.9	33.4		7.2	37.7			10.0	10.0		10.0	10.0
Actuated g/C Ratio	0.05	0.56		0.12	0.63			0.17	0.17		0.17	0.17
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	86	1966		214	2237			247	266		260	266
v/s Ratio Prot	0.02	0.19		c0.06	c0.42							
v/s Ratio Perm								c0.04	0.01		0.03	0.00
v/c Ratio	0.45	0.34		0.51	0.67			0.27	0.08		0.16	0.02
Uniform Delay, d1	27.6	7.1		24.5	7.0			21.6	20.9		21.2	20.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.4	0.1		0.7	0.9			0.2	0.0		0.1	0.0
Delay (s)	29.0	7.3		25.2	7.9			21.8	21.0		21.3	20.7
Level of Service	C	A		C	A			C	C		C	C
Approach Delay (s)		8.4			9.0			21.3			21.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



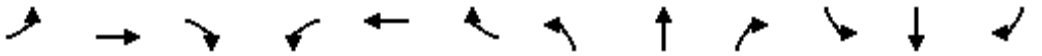
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	404	6	2	645	78	2	0	2	138	0	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98			0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3532		1770	3482			1695		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (perm)	1770	3532		1770	3482			1695		1770	1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	425	6	2	679	82	2	0	2	145	0	223
RTOR Reduction (vph)	0	1	0	0	9	0	0	2	0	0	175	0
Lane Group Flow (vph)	105	430	0	2	752	0	0	2	0	145	48	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	6.8	27.0		0.9	21.1			1.0		11.5	11.5	
Effective Green, g (s)	7.8	29.7		1.9	23.8			2.0		12.5	12.5	
Actuated g/C Ratio	0.13	0.51		0.03	0.41			0.03		0.22	0.22	
Clearance Time (s)	4.0	5.7		4.0	5.7			4.0		4.0	4.0	
Vehicle Extension (s)	2.0	3.8		2.0	3.8			2.5		2.0	2.0	
Lane Grp Cap (vph)	238	1806		58	1426			58		381	341	
v/s Ratio Prot	c0.06	0.12		0.00	c0.22			c0.00		c0.08	0.03	
v/s Ratio Perm												
v/c Ratio	0.44	0.24		0.03	0.53			0.04		0.38	0.14	
Uniform Delay, d1	23.1	7.9		27.2	12.9			27.1		19.5	18.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		0.1	0.4			0.2		0.2	0.1	
Delay (s)	23.6	8.0		27.3	13.4			27.3		19.7	18.5	
Level of Service	C	A		C	B			C		B	B	
Approach Delay (s)		11.1			13.4			27.3			19.0	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



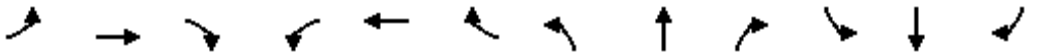
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	6	33	150	4	72	21	1149	142	15	1230	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	6	35	158	4	76	22	1209	149	16	1295	18
RTOR Reduction (vph)	0	0	32	0	0	59	0	0	87	0	0	10
Lane Group Flow (vph)	27	6	3	158	4	17	22	1209	62	16	1295	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.6	5.1	5.1	10.5	14.0	14.0	0.6	25.4	25.4	0.5	25.3	25.3
Effective Green, g (s)	1.6	5.1	5.1	10.5	14.0	14.0	0.6	25.4	25.4	0.5	25.3	25.3
Actuated g/C Ratio	0.03	0.08	0.08	0.17	0.23	0.23	0.01	0.41	0.41	0.01	0.41	0.41
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	46	154	131	302	424	360	17	2100	654	14	2092	651
v/s Ratio Prot	0.02	0.00		c0.09	0.00		c0.01	0.24		0.01	c0.25	
v/s Ratio Perm			0.00			c0.01			0.04			0.01
v/c Ratio	0.59	0.04	0.02	0.52	0.01	0.05	1.29	0.58	0.09	1.14	0.62	0.01
Uniform Delay, d1	29.6	25.9	25.9	23.2	18.4	18.5	30.4	13.9	11.0	30.5	14.3	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.7	0.1	0.1	1.6	0.0	0.1	323.2	0.4	0.1	291.3	0.6	0.0
Delay (s)	47.3	26.0	26.0	24.9	18.4	18.6	353.6	14.3	11.1	321.8	14.8	10.7
Level of Service	D	C	C	C	B	B	F	B	B	F	B	B
Approach Delay (s)		34.4			22.8			19.3			18.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	61.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



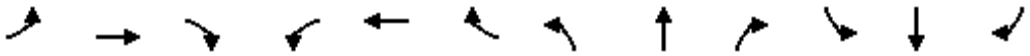
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	14	25	184	36	18	60	1285	287	35	1357	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	15	26	194	38	19	63	1353	302	37	1428	21
RTOR Reduction (vph)	0	0	23	0	0	14	0	0	163	0	0	11
Lane Group Flow (vph)	9	15	3	194	38	5	63	1353	139	37	1428	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.5	6.8	6.8	11.6	17.9	17.9	3.3	26.0	26.0	1.3	24.0	24.0
Effective Green, g (s)	0.5	6.8	6.8	11.6	17.9	17.9	3.3	26.0	26.0	1.3	24.0	24.0
Actuated g/C Ratio	0.01	0.10	0.10	0.18	0.27	0.27	0.05	0.40	0.40	0.02	0.37	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	13	193	164	313	508	431	89	2012	626	35	1858	578
v/s Ratio Prot	0.01	0.01		c0.11	c0.02		c0.04	0.27		0.02	c0.28	
v/s Ratio Perm			0.00			0.00			0.09			0.01
v/c Ratio	0.69	0.08	0.02	0.62	0.07	0.01	0.71	0.67	0.22	1.06	0.77	0.02
Uniform Delay, d1	32.5	26.6	26.4	25.0	17.8	17.4	30.7	16.3	13.1	32.2	18.4	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	96.3	0.2	0.0	3.6	0.1	0.0	22.6	0.9	0.2	169.8	2.0	0.0
Delay (s)	128.8	26.8	26.5	28.6	17.8	17.5	53.3	17.2	13.3	202.0	20.4	13.3
Level of Service	F	C	C	C	B	B	D	B	B	F	C	B
Approach Delay (s)		45.0			26.2			17.9			24.8	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	7	39	44	15	91	96	1526	101	42	1461	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	7	41	46	16	96	101	1606	106	44	1538	59
RTOR Reduction (vph)	0	0	35	0	0	81	0	0	46	0	0	28
Lane Group Flow (vph)	25	7	6	46	16	15	101	1606	60	44	1538	31
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.3	9.1	9.1	2.1	9.9	9.9	6.5	36.0	36.0	2.1	31.6	31.6
Effective Green, g (s)	2.3	10.1	10.1	3.1	10.9	10.9	7.5	38.0	37.0	3.1	33.6	32.6
Actuated g/C Ratio	0.03	0.15	0.15	0.04	0.16	0.16	0.11	0.55	0.53	0.04	0.48	0.47
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	59	272	231	79	293	249	192	2788	845	79	2465	745
v/s Ratio Prot	0.01	0.00		c0.03	0.01		c0.06	0.32		0.02	c0.30	
v/s Ratio Perm			0.00			c0.01			0.04			0.02
v/c Ratio	0.42	0.03	0.03	0.58	0.05	0.06	0.53	0.58	0.07	0.56	0.62	0.04
Uniform Delay, d1	32.9	25.4	25.4	32.5	24.8	24.8	29.2	10.3	7.8	32.4	13.2	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.0	0.0	10.5	0.1	0.1	2.6	0.3	0.0	8.3	0.5	0.0
Delay (s)	37.7	25.4	25.4	42.9	24.9	24.9	31.8	10.6	7.9	40.7	13.7	9.9
Level of Service	D	C	C	D	C	C	C	B	A	D	B	A
Approach Delay (s)		29.6			30.2			11.6			14.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	11.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	61	50	43	53	2	50	101	13	2	39	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1549	1770	1852		1770	1826		1770	1697	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1549	1770	1852		1770	1826		1770	1697	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	64	53	45	56	2	53	106	14	2	41	45
RTOR Reduction (vph)	0	0	41	0	2	0	0	6	0	0	38	0
Lane Group Flow (vph)	89	64	12	45	56	0	53	114	0	2	48	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	4.3	7.8	7.8	2.1	5.6		2.2	7.2		0.5	5.5	
Effective Green, g (s)	4.3	7.8	7.8	2.1	5.6		2.2	7.2		0.5	5.5	
Actuated g/C Ratio	0.12	0.22	0.22	0.06	0.16		0.06	0.20		0.01	0.15	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	214	408	339	104	291		109	369		25	262	
v/s Ratio Prot	c0.05	c0.03		0.03	0.03		c0.03	c0.06		0.00	0.03	
v/s Ratio Perm			0.01									
v/c Ratio	0.42	0.16	0.03	0.43	0.19		0.49	0.31		0.08	0.18	
Uniform Delay, d1	14.5	11.2	10.9	16.2	13.0		16.2	12.1		17.3	13.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.2	0.0	2.9	0.3		3.4	0.5		1.4	0.3	
Delay (s)	15.8	11.4	11.0	19.0	13.4		19.5	12.6		18.7	13.4	
Level of Service	B	B	B	B	B		B	B		B	B	
Approach Delay (s)		13.2			15.8			14.7			13.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	35.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

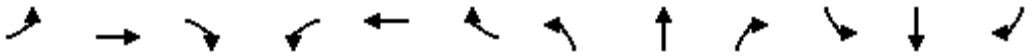
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	141	293	418	66	337	848
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	148	308	440	69	355	893
RTOR Reduction (vph)	0	254	0	47	0	0
Lane Group Flow (vph)	148	54	440	22	355	893
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	10.8	10.8	19.6	19.6	16.6	41.2
Effective Green, g (s)	10.8	10.8	19.6	19.6	16.6	41.2
Actuated g/C Ratio	0.17	0.17	0.32	0.32	0.27	0.66
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	308	276	589	500	474	1238
v/s Ratio Prot	c0.08		0.24		0.20	c0.48
v/s Ratio Perm		0.03		0.01		
v/c Ratio	0.48	0.19	0.75	0.04	0.75	0.72
Uniform Delay, d1	23.1	21.9	19.0	14.7	20.8	6.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.3	5.1	0.0	6.4	2.1
Delay (s)	24.3	22.2	24.1	14.7	27.2	8.8
Level of Service	C	C	C	B	C	A
Approach Delay (s)	22.9		22.9			14.0
Approach LOS	C		C			B

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	18	29	552	13	27	701
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.44	1.00
Satd. Flow (perm)	1770	1583	1863	1583	825	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	31	581	14	28	738
RTOR Reduction (vph)	0	29	0	5	0	0
Lane Group Flow (vph)	19	2	581	9	28	738
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	1.7	1.7	17.2	17.2	17.2	17.2
Effective Green, g (s)	1.7	1.7	17.2	17.2	17.2	17.2
Actuated g/C Ratio	0.06	0.06	0.62	0.62	0.62	0.62
Clearance Time (s)	4.0	4.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	108	96	1149	976	509	1149
v/s Ratio Prot	c0.01		0.31			c0.40
v/s Ratio Perm		0.00		0.01	0.03	
v/c Ratio	0.18	0.02	0.51	0.01	0.06	0.64
Uniform Delay, d1	12.4	12.3	3.0	2.1	2.1	3.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	0.4	0.0	0.0	1.2
Delay (s)	13.2	12.4	3.3	2.1	2.2	4.6
Level of Service	B	B	A	A	A	A
Approach Delay (s)	12.7		3.3			4.5
Approach LOS	B		A			A

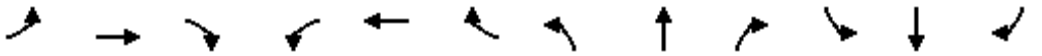
Intersection Summary			
HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	27.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	368	11	53	449	0	8	4	8	15	2	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1549	1770	3539		1770	1662		1770	1606	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1549	1770	3539		1770	1662		1770	1606	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	387	12	56	473	0	8	4	8	16	2	12
RTOR Reduction (vph)	0	0	7	0	0	0	0	7	0	0	11	0
Lane Group Flow (vph)	5	387	5	56	473	0	8	5	0	16	3	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	0.4	11.4	11.4	0.6	11.6		0.4	1.9		0.4	1.9	
Effective Green, g (s)	0.4	11.4	11.4	0.6	11.6		0.4	1.9		0.4	1.9	
Actuated g/C Ratio	0.01	0.38	0.38	0.02	0.38		0.01	0.06		0.01	0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	23	1332	583	35	1355		23	104		23	101	
v/s Ratio Prot	0.00	0.11		c0.03	c0.13		0.00	c0.00		c0.01	0.00	
v/s Ratio Perm			0.00									
v/c Ratio	0.22	0.29	0.01	1.60	0.35		0.35	0.04		0.70	0.03	
Uniform Delay, d1	14.8	6.6	5.9	14.8	6.7		14.8	13.3		14.9	13.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.7	0.1	0.0	370.1	0.2		8.9	0.2		63.9	0.1	
Delay (s)	19.5	6.7	5.9	384.9	6.8		23.7	13.5		78.8	13.4	
Level of Service	B	A	A	F	A		C	B		E	B	
Approach Delay (s)		6.9			46.8			17.6			48.3	
Approach LOS		A			D			B			D	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	30.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

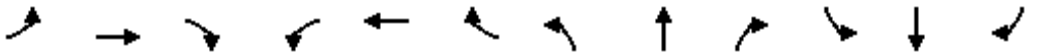


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	2	3	396	7	129	9	522	193	52	530	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	2	3	417	7	136	9	549	203	55	558	1
RTOR Reduction (vph)	0	0	3	0	0	101	0	0	148	0	0	1
Lane Group Flow (vph)	4	2	0	417	7	35	9	549	55	55	558	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.7	1.8	1.8	11.2	12.3	12.3	0.7	13.0	13.0	2.0	14.3	14.3
Effective Green, g (s)	0.7	1.8	1.8	11.2	12.3	12.3	0.7	13.0	13.0	2.0	14.3	14.3
Actuated g/C Ratio	0.01	0.04	0.04	0.23	0.26	0.26	0.01	0.27	0.27	0.04	0.30	0.30
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	50	70	59	801	477	406	50	1377	429	143	1515	472
v/s Ratio Prot	0.00	0.00		c0.12	0.00		0.00	0.11		c0.02	c0.11	
v/s Ratio Perm			0.00			c0.02			0.03			0.00
v/c Ratio	0.08	0.03	0.00	0.52	0.01	0.09	0.18	0.40	0.13	0.38	0.37	0.00
Uniform Delay, d1	23.3	22.3	22.2	16.1	13.3	13.6	23.4	14.3	13.2	22.4	13.3	11.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	0.0	0.6	0.0	0.1	1.7	0.2	0.1	1.7	0.2	0.0
Delay (s)	24.0	22.4	22.2	16.7	13.3	13.7	25.1	14.5	13.4	24.1	13.4	11.8
Level of Service	C	C	C	B	B	B	C	B	B	C	B	B
Approach Delay (s)		23.1			15.9			14.3			14.4	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

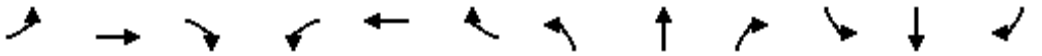
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	183	21	32	507	69	10	22	8	31	24	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	193	22	34	534	73	11	23	8	33	25	77
RTOR Reduction (vph)	0	0	15	0	0	50	0	0	7	0	0	64
Lane Group Flow (vph)	55	193	7	34	534	23	11	23	1	33	25	13
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	18.5	18.5	2.3	16.8	16.8	4.8	4.8	4.8	8.9	8.9	8.9
Effective Green, g (s)	4.0	18.5	18.5	2.3	16.8	16.8	4.8	4.8	4.8	8.9	8.9	8.9
Actuated g/C Ratio	0.07	0.34	0.34	0.04	0.31	0.31	0.09	0.09	0.09	0.16	0.16	0.16
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	129	1201	537	74	1090	487	155	164	139	289	304	258
v/s Ratio Prot	c0.03	0.05		0.02	c0.15		0.01	c0.01		c0.02	0.01	
v/s Ratio Perm			0.00			0.01			0.00			0.01
v/c Ratio	0.43	0.16	0.01	0.46	0.49	0.05	0.07	0.14	0.01	0.11	0.08	0.05
Uniform Delay, d1	24.2	12.6	11.9	25.5	15.4	13.2	22.8	22.9	22.7	19.4	19.3	19.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.1	0.0	4.5	0.3	0.0	0.2	0.4	0.0	0.2	0.1	0.1
Delay (s)	26.4	12.6	12.0	30.0	15.7	13.3	23.0	23.3	22.7	19.6	19.5	19.3
Level of Service	C	B	B	C	B	B	C	C	C	B	B	B
Approach Delay (s)		15.4			16.2			23.1			19.4	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	54.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



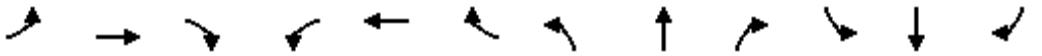
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	20	110	29	30	109	120	695	25	71	753	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	21	116	31	32	115	126	732	26	75	793	95
RTOR Reduction (vph)	0	0	94	0	0	100	0	0	16	0	0	62
Lane Group Flow (vph)	105	21	22	31	32	15	126	732	10	75	793	33
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.7	12.2	12.2	2.6	8.1	8.1	7.0	24.4	24.4	4.8	22.2	22.2
Effective Green, g (s)	6.7	12.2	12.2	2.6	8.1	8.1	7.0	24.4	24.4	4.8	22.2	22.2
Actuated g/C Ratio	0.10	0.19	0.19	0.04	0.13	0.13	0.11	0.38	0.38	0.07	0.35	0.35
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	185	355	302	72	236	200	194	1939	604	133	1764	549
v/s Ratio Prot	c0.06	0.01		0.02	c0.02		c0.07	0.14		0.04	c0.16	
v/s Ratio Perm			c0.01			0.01			0.01			0.02
v/c Ratio	0.57	0.06	0.07	0.43	0.14	0.07	0.65	0.38	0.02	0.56	0.45	0.06
Uniform Delay, d1	27.3	21.2	21.3	30.0	24.8	24.6	27.3	14.3	12.3	28.6	16.2	13.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.1	0.1	4.1	0.3	0.2	7.3	0.1	0.0	5.4	0.2	0.0
Delay (s)	31.2	21.3	21.4	34.1	25.1	24.8	34.6	14.4	12.3	34.0	16.4	14.0
Level of Service	C	C	C	C	C	C	C	B	B	C	B	B
Approach Delay (s)		25.6			26.5			17.3			17.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



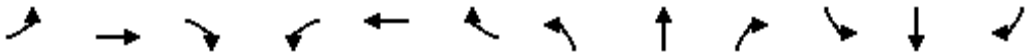
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	66	11	438	160	8	17	5	180	21	9	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	69	12	461	168	8	18	5	189	22	9	15
RTOR Reduction (vph)	0	0	11	0	0	4	0	0	164	0	0	13
Lane Group Flow (vph)	11	69	1	461	168	4	18	5	25	22	9	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.9	7.7	7.7	27.1	33.9	33.9	1.0	8.5	8.5	1.0	8.5	8.5
Effective Green, g (s)	0.9	7.7	7.7	27.1	33.9	33.9	1.0	8.5	8.5	1.0	8.5	8.5
Actuated g/C Ratio	0.01	0.12	0.12	0.42	0.53	0.53	0.02	0.13	0.13	0.02	0.13	0.13
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	25	424	190	746	1866	835	28	246	209	28	246	209
v/s Ratio Prot	0.01	c0.02		c0.26	0.05		0.01	0.00		c0.01	0.00	
v/s Ratio Perm			0.00			0.00			c0.02			0.00
v/c Ratio	0.44	0.16	0.01	0.62	0.09	0.01	0.64	0.02	0.12	0.79	0.04	0.01
Uniform Delay, d1	31.4	25.4	24.9	14.6	7.5	7.2	31.5	24.3	24.6	31.5	24.3	24.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.9	0.2	0.0	1.5	0.0	0.0	40.9	0.0	0.3	82.7	0.1	0.0
Delay (s)	43.3	25.6	24.9	16.1	7.6	7.2	72.4	24.3	24.9	114.3	24.4	24.3
Level of Service	D	C	C	B	A	A	E	C	C	F	C	C
Approach Delay (s)		27.6			13.7			28.9			67.3	
Approach LOS		C			B			C			E	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	9	72	364	46	0	169	715	200	0	869	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00	0.97	1.00		0.97	0.91	1.00		0.91	
Frt		1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1863	1583	3433	1863		3433	5085	1583		5085	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (perm)		1863	1583	3433	1863		3433	5085	1583		5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	9	76	383	48	0	178	753	211	0	915	0
RTOR Reduction (vph)	0	0	69	0	0	0	0	0	111	0	0	0
Lane Group Flow (vph)	0	9	7	383	48	0	178	753	100	0	915	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		5.8	5.8	11.1	21.9		6.5	28.7	28.7		17.2	
Effective Green, g (s)		5.8	5.8	11.1	21.9		6.5	28.7	28.7		17.2	
Actuated g/C Ratio		0.10	0.10	0.18	0.36		0.11	0.47	0.47		0.28	
Clearance Time (s)		5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		178	152	629	673		368	2408	750		1443	
v/s Ratio Prot		0.00		c0.11	c0.03		c0.05	0.15			c0.18	
v/s Ratio Perm			0.00						0.06			
v/c Ratio		0.05	0.05	0.61	0.07		0.48	0.31	0.13		0.63	
Uniform Delay, d1		24.9	24.9	22.8	12.7		25.5	9.9	9.0		19.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.1	0.1	1.7	0.0		1.0	0.1	0.1		0.9	
Delay (s)		25.0	25.0	24.4	12.7		26.5	9.9	9.0		19.9	
Level of Service		C	C	C	B		C	A	A		B	
Approach Delay (s)		25.0			23.1			12.3			19.9	
Approach LOS		C			C			B			B	

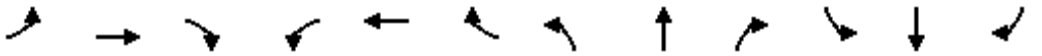
Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	848	0	9	344	7	0	1	17	21	1	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.87		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1770	3528			1604		1770	1574	
Flt Permitted	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539		1770	3528			1604		1770	1574	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	893	0	9	362	7	0	1	18	22	1	25
RTOR Reduction (vph)	0	0	0	0	1	0	0	17	0	0	23	0
Lane Group Flow (vph)	24	893	0	9	368	0	0	2	0	22	3	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Perm			Split		
Protected Phases	7	4		3	8			2		6	6	
Permitted Phases							2					
Actuated Green, G (s)	0.4	23.1		0.4	23.1			1.9		3.3	3.3	
Effective Green, g (s)	0.4	23.1		0.4	23.1			1.9		3.3	3.3	
Actuated g/C Ratio	0.01	0.52		0.01	0.52			0.04		0.07	0.07	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	16	1829		16	1823			68		131	116	
v/s Ratio Prot	c0.01	c0.25		0.01	0.10			c0.00		c0.01	0.00	
v/s Ratio Perm												
v/c Ratio	1.50	0.49		0.56	0.20			0.03		0.17	0.02	
Uniform Delay, d1	22.2	7.0		22.1	5.8			20.5		19.4	19.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	410.1	0.2		38.3	0.1			0.2		0.6	0.1	
Delay (s)	432.3	7.2		60.3	5.9			20.7		20.0	19.3	
Level of Service	F	A		E	A			C		C	B	
Approach Delay (s)		18.3			7.2			20.7			19.6	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	44.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

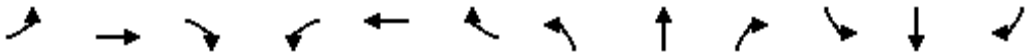
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	1	17	19	0	29	8	131	42	74	135	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00		0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1550	1770		1550	1770	1863	1550	1770	1863	1550
Flt Permitted	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1550	1770		1550	1770	1863	1550	1770	1863	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	1	18	20	0	31	8	138	44	78	142	12
RTOR Reduction (vph)	0	0	17	0	0	29	0	0	32	0	0	8
Lane Group Flow (vph)	18	1	1	20	0	2	8	138	12	78	142	4
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.3	1.7	1.7	0.3		1.7	0.3	7.7	7.7	1.9	9.3	9.3
Effective Green, g (s)	0.3	1.7	1.7	0.3		1.7	0.3	7.7	7.7	1.9	9.3	9.3
Actuated g/C Ratio	0.01	0.06	0.06	0.01		0.06	0.01	0.28	0.28	0.07	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	19	115	95	19		95	19	520	432	122	628	522
v/s Ratio Prot	0.01	0.00		c0.01			0.00	0.07		c0.04	c0.08	
v/s Ratio Perm			0.00			c0.00			0.01			0.00
v/c Ratio	0.95	0.01	0.01	1.05		0.02	0.42	0.27	0.03	0.64	0.23	0.01
Uniform Delay, d1	13.6	12.2	12.2	13.7		12.2	13.6	7.7	7.2	12.5	6.6	6.1
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	179.6	0.0	0.0	224.0		0.1	14.4	0.3	0.0	10.5	0.2	0.0
Delay (s)	193.2	12.2	12.2	237.7		12.3	27.9	8.0	7.3	23.0	6.8	6.1
Level of Service	F	B	B	F		B	C	A	A	C	A	A
Approach Delay (s)		100.3			100.6			8.7			12.2	
Approach LOS		F			F			A			B	

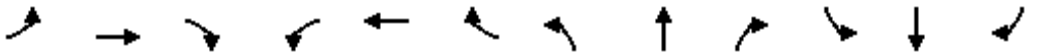
Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	27.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



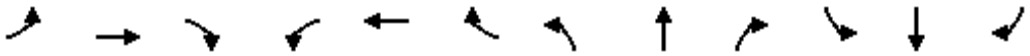
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	36	71	185	46	18	57	637	226	7	768	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0		3.0	4.3	4.3	2.0	3.2	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	0.95	
Frt		1.00	0.85		0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1825	1583		1778		1770	1863	1583	1770	3534	
Flt Permitted		0.98	1.00		0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1825	1583		1778		1770	1863	1583	1770	3534	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	38	75	195	48	19	60	671	238	7	808	8
RTOR Reduction (vph)	0	0	68	0	3	0	0	0	127	0	1	0
Lane Group Flow (vph)	0	65	7	0	259	0	60	671	111	7	815	0
Turn Type	Split		Perm	Split			Prot		Perm	Prot		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			
Actuated Green, G (s)		6.0	6.0		16.5		3.6	32.8	32.8	0.9	30.2	
Effective Green, g (s)		7.0	7.0		17.5		4.6	33.8	33.8	1.9	31.2	
Actuated g/C Ratio		0.10	0.10		0.24		0.06	0.47	0.47	0.03	0.43	
Clearance Time (s)		4.0	4.0		4.0		4.0	5.3	5.3	3.0	4.2	
Vehicle Extension (s)		2.0	2.0		2.0		2.0	2.0	2.0	2.0	2.9	
Lane Grp Cap (vph)		176	153		429		112	869	738	46	1521	
v/s Ratio Prot		c0.04			c0.15		c0.03	c0.36		0.00	0.23	
v/s Ratio Perm			0.00						0.07			
v/c Ratio		0.37	0.05		0.60		0.54	0.77	0.15	0.15	0.54	
Uniform Delay, d1		30.7	29.7		24.4		32.9	16.1	11.1	34.5	15.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.0		1.6		2.5	3.9	0.0	0.6	0.3	
Delay (s)		31.2	29.8		26.1		35.4	20.1	11.1	35.1	15.6	
Level of Service		C	C		C		D	C	B	D	B	
Approach Delay (s)		30.4			26.1			18.8			15.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



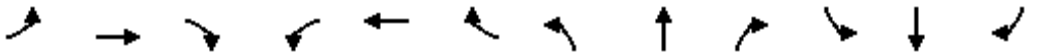
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	179	0	402	392	5	0	395	372	0	359	383
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3		3.9	3.9			3.2	3.2		3.2	3.0
Lane Util. Factor	0.95	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1681	1757		1770	3533			1863	1583		1863	1583
Flt Permitted	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	1681	1757		1770	3533			1863	1583		1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	243	188	0	423	413	5	0	416	392	0	378	403
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	304	0	0	0
Lane Group Flow (vph)	211	220	0	423	417	0	0	416	88	0	378	403
Turn Type	Split			Split					Perm			Free
Protected Phases	4	4		3	3			2			6	
Permitted Phases									2			Free
Actuated Green, G (s)	16.8	16.8		25.2	25.2			22.8	22.8		22.7	106.1
Effective Green, g (s)	17.8	17.8		26.2	26.2			23.8	23.8		23.7	106.1
Actuated g/C Ratio	0.17	0.17		0.25	0.25			0.22	0.22		0.22	1.00
Clearance Time (s)	5.3	5.3		4.9	4.9			4.2	4.2		4.2	
Vehicle Extension (s)	2.5	2.5		5.0	5.0			3.0	3.0		2.5	
Lane Grp Cap (vph)	282	295		437	872			418	355		416	1583
v/s Ratio Prot	c0.13	0.13		c0.24	0.12			c0.22			c0.20	
v/s Ratio Perm									0.06			0.25
v/c Ratio	0.75	0.75		0.97	0.48			1.00	0.25		0.91	0.25
Uniform Delay, d1	42.0	42.0		39.5	34.1			41.1	33.8		40.1	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	9.8	9.3		34.9	0.9			42.5	0.4		23.1	0.4
Delay (s)	51.9	51.3		74.4	35.0			83.6	34.2		63.3	0.4
Level of Service	D	D		E	C			F	C		E	A
Approach Delay (s)		51.6			54.8			59.6			30.8	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM Average Control Delay	49.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	106.1	Sum of lost time (s)	14.6
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



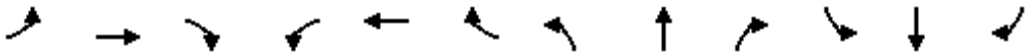
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	555	217	37	483	21	130	54	64	8	40	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.2		3.2			3.0	3.0		3.0	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00		1.00			0.97	1.00		0.99	
Satd. Flow (prot)		1859	1583		1847			1799	1583		1786	
Flt Permitted		0.98	1.00		0.95			0.81	1.00		0.96	
Satd. Flow (perm)		1820	1583		1754			1517	1583		1723	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	584	228	39	508	22	137	57	67	8	42	18
RTOR Reduction (vph)	0	0	72	0	2	0	0	0	52	0	14	0
Lane Group Flow (vph)	0	606	156	0	567	0	0	194	15	0	54	0
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Actuated Green, G (s)		31.9	31.9		31.9			9.9	9.9		9.9	
Effective Green, g (s)		32.9	32.9		32.9			10.9	10.9		10.9	
Actuated g/C Ratio		0.66	0.66		0.66			0.22	0.22		0.22	
Clearance Time (s)		4.2	4.2		4.2			4.0	4.0		4.0	
Vehicle Extension (s)		2.6	2.6		2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)		1198	1042		1154			331	345		376	
v/s Ratio Prot												
v/s Ratio Perm		c0.33	0.10		0.32			c0.13	0.01		0.03	
v/c Ratio		0.51	0.15		0.49			0.59	0.04		0.14	
Uniform Delay, d1		4.4	3.2		4.3			17.5	15.4		15.8	
Progression Factor		1.00	1.00		0.74			1.00	1.00		1.00	
Incremental Delay, d2		1.5	0.3		1.4			1.7	0.0		0.1	
Delay (s)		5.9	3.5		4.6			19.2	15.4		15.8	
Level of Service		A	A		A			B	B		B	
Approach Delay (s)		5.3			4.6			18.3			15.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



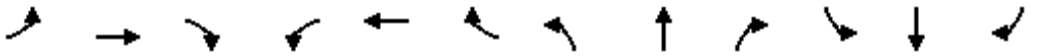
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	613	20	42	642	61	12	43	17	118	72	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.2		3.2	3.2		3.0	3.0			3.0	3.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	1854		1770	1839		1770	1783			1807	1583
Flt Permitted	0.28	1.00		0.33	1.00		0.52	1.00			0.77	1.00
Satd. Flow (perm)	528	1854		609	1839		970	1783			1442	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	48	645	21	44	676	64	13	45	18	124	76	100
RTOR Reduction (vph)	0	2	0	0	5	0	0	14	0	0	0	78
Lane Group Flow (vph)	48	664	0	44	735	0	13	49	0	0	200	22
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		4
Actuated Green, G (s)	32.0	32.0		32.0	32.0		9.8	9.8			9.8	9.8
Effective Green, g (s)	33.0	33.0		33.0	33.0		10.8	10.8			10.8	10.8
Actuated g/C Ratio	0.66	0.66		0.66	0.66		0.22	0.22			0.22	0.22
Clearance Time (s)	4.2	4.2		4.2	4.2		4.0	4.0			4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	348	1224		402	1214		210	385			311	342
v/s Ratio Prot		0.36			c0.40			0.03				
v/s Ratio Perm	0.09			0.07			0.01				c0.14	0.01
v/c Ratio	0.14	0.54		0.11	0.61		0.06	0.13			0.64	0.06
Uniform Delay, d1	3.2	4.5		3.1	4.8		15.6	15.8			17.8	15.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.8	1.7		0.5	2.2		0.0	0.1			3.4	0.0
Delay (s)	4.0	6.2		3.7	7.1		15.6	15.9			21.2	15.6
Level of Service	A	A		A	A		B	B			C	B
Approach Delay (s)		6.1			6.9			15.8			19.4	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	6.2
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



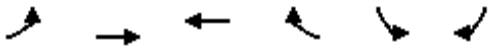
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	541	33	427	495	16	42	40	328	73	104	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2		3.0	3.2			3.0	3.0		3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.98	
Satd. Flow (prot)	1770	1847		1770	1854			1816	1583		1782	
Flt Permitted	0.95	1.00		0.95	1.00			0.66	1.00		0.86	
Satd. Flow (perm)	1770	1847		1770	1854			1231	1583		1564	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	569	35	449	521	17	44	42	345	77	109	48
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	285	0	9	0
Lane Group Flow (vph)	44	602	0	449	537	0	0	86	60	0	225	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4		4	4		
Actuated Green, G (s)	3.0	43.1		28.3	68.4			16.4	16.4		16.4	
Effective Green, g (s)	4.0	44.1		29.3	69.4			17.4	17.4		17.4	
Actuated g/C Ratio	0.04	0.44		0.29	0.69			0.17	0.17		0.17	
Clearance Time (s)	4.0	4.2		4.0	4.2			4.0	4.0		4.0	
Vehicle Extension (s)	2.0	2.6		2.0	2.6			2.0	2.0		2.0	
Lane Grp Cap (vph)	71	815		519	1287			214	275		272	
v/s Ratio Prot	0.02	c0.33		c0.25	0.29							
v/s Ratio Perm								0.07	0.04		c0.14	
v/c Ratio	0.62	0.74		0.87	0.42			0.40	0.22		0.83	
Uniform Delay, d1	47.3	23.2		33.5	6.6			36.7	35.5		39.8	
Progression Factor	1.10	0.82		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	9.9	3.1		13.6	1.0			0.5	0.1		17.5	
Delay (s)	62.0	22.0		47.1	7.6			37.1	35.6		57.3	
Level of Service	E	C		D	A			D	D		E	
Approach Delay (s)		24.8			25.5			35.9			57.3	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	127	249	144	75	13	599	1059	43	30	1206	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.6	3.9	3.0	1.6	2.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	75	134	262	152	79	14	631	1115	45	32	1269	3
RTOR Reduction (vph)	0	0	219	0	0	12	0	0	25	0	0	2
Lane Group Flow (vph)	75	134	43	152	79	2	631	1115	20	32	1269	1
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	14.0	14.0	14.0	14.0	14.0	14.0	17.0	40.7	40.7	6.0	31.7	31.7
Effective Green, g (s)	15.0	15.0	15.0	15.0	15.0	15.0	18.0	43.0	41.7	7.0	34.0	32.7
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.20	0.47	0.46	0.08	0.37	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.9	4.9	4.0	3.9	3.9
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.9	3.9	2.0	3.9	3.9
Lane Grp Cap (vph)	290	305	259	290	305	259	675	1661	721	135	1314	565
v/s Ratio Prot	0.04	c0.07		c0.09	0.04		c0.18	0.32		0.02	c0.36	
v/s Ratio Perm			0.03			0.00			0.01			0.00
v/c Ratio	0.26	0.44	0.17	0.52	0.26	0.01	0.93	0.67	0.03	0.24	0.97	0.00
Uniform Delay, d1	33.4	34.5	32.9	35.0	33.4	32.1	36.2	18.8	13.8	39.8	28.2	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.4	0.1	0.8	0.2	0.0	19.9	1.2	0.0	0.3	17.2	0.0
Delay (s)	33.6	34.9	33.0	35.8	33.6	32.1	56.1	20.0	13.8	40.1	45.5	19.0
Level of Service	C	C	C	D	C	C	E	B	B	D	D	B
Approach Delay (s)		33.7			34.9			32.6			45.3	
Approach LOS		C			C			C			D	

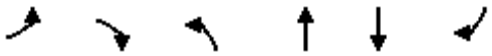
Intersection Summary			
HCM Average Control Delay	37.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	91.6	Sum of lost time (s)	9.6
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	40	504	504	209	328	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	3539	1863	1546	3428	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1770	3539	1863	1546	3428	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	531	531	220	345	11
RTOR Reduction (vph)	0	0	0	130	4	0
Lane Group Flow (vph)	42	531	531	90	352	0
Confl. Peds. (#/hr)				4		4
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	1.2	22.1	16.9	16.9	11.2	
Effective Green, g (s)	1.2	22.1	16.9	16.9	11.2	
Actuated g/C Ratio	0.03	0.54	0.41	0.41	0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	51	1894	762	633	930	
v/s Ratio Prot	c0.02	0.15	c0.29		c0.10	
v/s Ratio Perm				0.06		
v/c Ratio	0.82	0.28	0.70	0.14	0.38	
Uniform Delay, d1	19.9	5.3	10.1	7.7	12.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	64.6	0.1	2.8	0.1	0.3	
Delay (s)	84.6	5.3	12.9	7.8	12.5	
Level of Service	F	A	B	A	B	
Approach Delay (s)		11.1	11.4		12.5	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	41.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	298	592	785	12	7	489
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	0.95	1.00	1.00
Satd. Flow (prot)	1770	1546	1681	1688	1863	1561
Flt Permitted	0.95	1.00	0.95	0.58	1.00	1.00
Satd. Flow (perm)	1770	1546	1681	1033	1863	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	314	623	826	13	7	515
RTOR Reduction (vph)	0	471	0	0	0	372
Lane Group Flow (vph)	314	152	421	418	7	143
Confl. Peds. (#/hr)		2				2
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	14.2	14.2	15.9	36.1	16.2	16.2
Effective Green, g (s)	14.2	14.2	15.9	36.1	16.2	16.2
Actuated g/C Ratio	0.24	0.24	0.27	0.62	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	431	377	458	818	518	434
v/s Ratio Prot			c0.25	0.14	0.00	
v/s Ratio Perm	c0.18	0.10		c0.18		0.09
v/c Ratio	0.73	0.40	0.92	0.51	0.01	0.33
Uniform Delay, d1	20.3	18.5	20.6	6.2	15.3	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	0.7	23.3	0.5	0.0	0.4
Delay (s)	26.3	19.2	43.9	6.7	15.3	17.2
Level of Service	C	B	D	A	B	B
Approach Delay (s)	21.6			25.4	17.2	
Approach LOS	C			C	B	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection 13 **New Meadow Dr/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	24	25	102.9%	59.1	7.0	E
	Through						
	Right Turn	6	6	101.7%	18.5	12.3	B
	Subtotal	**30**	**31**	**102.7%**	**50.9**	**5.4**	**D**
EB	Left Turn	9	9	100.0%	47.9	7.1	D
	Through	651	612	94.0%	10.6	1.4	B
	Right Turn						
	Subtotal	**660**	**621**	**94.1%**	**11.1**	**1.3**	**B**
WB	Left Turn						
	Through	804	664	82.6%	15.2	1.3	B
	Right Turn	138	109	78.7%	18.8	1.4	B
	Subtotal	**942**	**773**	**82.0%**	**15.7**	**1.3**	**B**
Total		**1,632**	**1,424**	**87.3%**	**14.5**	**0.8**	**B**

Intersection 10 **Diamond Creek Blvd/Blue Oaks Blvd-Wal-Mart** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	21	19	92.4%	54.0	8.9	D
	Through	7	6	91.4%	60.2	24.0	E
	Right Turn	8	10	120.0%	15.5	4.5	B
	Subtotal	**36**	**35**	**98.3%**	**44.8**	**9.9**	**D**
SB	Left Turn	75	73	96.9%	50.4	4.5	D
	Through	8	9	108.8%	56.6	14.6	E
	Right Turn	47	46	97.2%	49.6	7.3	D
	Subtotal	**130**	**127**	**97.8%**	**50.5**	**4.6**	**D**
EB	Left Turn	19	19	101.1%	75.3	19.2	E
	Through	353	344	97.4%	23.9	2.3	C
	Right Turn	9	10	107.8%	5.8	0.9	A
	Subtotal	**381**	**373**	**97.8%**	**26.2**	**2.7**	**C**
WB	Left Turn	7	6	85.7%	73.8	16.3	E
	Through	697	557	79.9%	41.1	10.6	D
	Right Turn	57	48	83.5%	20.8	9.9	C
	Subtotal	**761**	**611**	**80.2%**	**39.8**	**10.5**	**D**
Total		**1,308**	**1,146**	**87.6%**	**36.6**	**6.2**	**D**

Intersection 15 **Foothills Blvd/Blue Oaks Blvd-Hwy 65 NB Ramp** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	151	119	78.6%	203.4	39.0	F
	Through	239	186	77.9%	205.9	37.9	F
	Right Turn	63	59	93.5%	4.2	2.7	A
	Subtotal	**453**	**364**	**80.3%**	**172.2**	**31.1**	**F**
SB	Left Turn	206	126	61.1%	354.1	34.6	F
	Through	198	193	97.5%	54.9	4.0	D
	Right Turn	75	67	88.8%	35.6	8.3	D
	Subtotal	**479**	**386**	**80.5%**	**149.6**	**14.1**	**F**
EB	Left Turn	33	34	104.2%	81.9	10.9	F
	Through	551	474	86.0%	83.0	8.2	F
	Right Turn	91	76	83.1%	102.3	17.0	F
	Subtotal	**675**	**584**	**86.5%**	**85.4**	**8.2**	**F**
WB	Left Turn	78	68	87.7%	64.8	8.9	E
	Through	716	589	82.2%	53.1	1.5	D
	Right Turn	110	82	74.7%	29.0	3.5	C
	Subtotal	**904**	**740**	**81.8%**	**51.5**	**1.4**	**D**
Total		**2,511**	**2,072**	**82.5%**	**100.3**	**4.9**	**F**

Intersection 11 **Woodcreek Oaks Blvd-Pleasant Grove Blvd/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	30	29	98.0%	66.1	12.5	E
	Through	85	75	88.0%	144.0	46.4	F
	Right Turn	57	56	98.8%	45.1	27.5	D
	Subtotal	**172**	**161**	**93.3%**	**96.4**	**36.2**	**F**
SB	Left Turn	152	131	86.4%	141.7	34.5	F
	Through	156	145	92.7%	139.3	25.5	F
	Right Turn	13	10	77.7%	83.6	26.5	F
	Subtotal	**321**	**286**	**89.1%**	**138.7**	**24.7**	**F**
EB	Left Turn	34	30	89.1%	56.4	5.5	E
	Through	389	384	98.8%	57.7	4.3	E
	Right Turn	40	36	89.5%	31.5	5.4	C
	Subtotal	**463**	**450**	**97.3%**	**55.5**	**3.5**	**E**
WB	Left Turn	176	143	81.5%	48.6	9.3	D
	Through	780	657	84.2%	33.0	6.8	C
	Right Turn						
	Subtotal	**956**	**800**	**83.7%**	**35.9**	**7.1**	**D**
Total		**1,912**	**1,697**	**88.8%**	**64.0**	**5.0**	**E**

Intersection 17 **Washington Blvd/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	178	154	86.2%	164.5	33.8	F
	Through						
	Right Turn	292	291	99.8%	55.7	12.2	E
	Subtotal	**470**	**445**	**94.7%**	**93.4**	**15.9**	**F**
SB	Left Turn	18	17	96.7%	79.9	32.1	E
	Through	128	127	99.1%	80.7	30.0	F
	Right Turn	50	48	95.2%	33.8	29.7	C
	Subtotal	**196**	**192**	**97.9%**	**69.0**	**30.5**	**E**
EB	Left Turn						
	Through	382	312	81.8%	74.0	10.8	E
	Right Turn	151	123	81.2%	14.1	2.4	B
	Subtotal	**533**	**435**	**81.6%**	**57.2**	**8.2**	**E**
WB	Left Turn	92	91	98.4%	58.8	4.7	E
	Through	303	307	101.5%	25.1	2.0	C
	Right Turn	99	105	105.6%	5.1	0.7	A
	Subtotal	**494**	**502**	**101.7%**	**27.1**	**1.7**	**C**
Total		**1,693**	**1,574**	**93.0%**	**59.3**	**8.3**	**E**

Intersection 12 **Wood Meadow Dwy/Blue Oaks Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	172	163	94.7%	95.4	34.1	F
	Through	1	2	160.0%	88.4	56.2	F
	Right Turn	30	32	105.7%	69.6	34.8	E
	Subtotal	**203**	**196**	**96.7%**	**91.3**	**34.4**	**F**
SB	Left Turn	46	30	64.3%	288.7	60.0	F
	Through	1	1	60.0%	63.8	82.1	E
	Right Turn	8	6	70.0%	189.9	94.1	F
	Subtotal	**55**	**36**	**65.1%**	**274.1**	**67.9**	**F**
EB	Left Turn						
	Through	584	561	96.1%	12.4	2.2	B
	Right Turn	14	11	75.7%	7.7	1.8	A
	Subtotal	**598**	**572**	**95.6%**	**12.3**	**2.1**	**B**
WB	Left Turn	26	21	79.6%	76.8	5.7	E
	Through	776	643	82.9%	17.9	3.6	B
	Right Turn	7	6	78.6%	2.1	1.9	A
	Subtotal	**809**	**669**	**82.7%**	**19.6**	**3.5**	**B**
Total		**1,665**	**1,473**	**88.5%**	**32.5**	**5.5**	**C**

Intersection 14 **Collector C/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	32	33	103.8%	74.8	21.0	E
	Through						
	Right Turn	72	72	99.4%	49.6	11.0	D
	Subtotal	**104**	**105**	**100.8%**	**58.2**	**12.3**	**E**
SB	Left Turn	44	40	90.9%	106.9	36.7	F
	Through						
	Right Turn	20	23	116.0%	56.4	31.5	E
	Subtotal	**64**	**63**	**98.8%**	**88.6**	**35.2**	**F**
EB	Left Turn	52	45	86.9%	80.8	14.5	F
	Through	2,584	1,831	70.9%	112.9	20.5	F
	Right Turn	64	35	54.4%	171.1	38.6	F
	Subtotal	**2,700**	**1,911**	**70.8%**	**113.1**	**20.0**	**F**
WB	Left Turn	32	26	82.5%	66.7	13.0	E
	Through	3,712	2,784	75.0%	14.6	1.1	B
	Right Turn	20	16	82.0%	12.1	3.4	B
	Subtotal	**3,764**	**2,827**	**75.1%**	**15.0**	**1.0**	**B**
Total		**6,632**	**4,906**	**74.0%**	**54.9**	**6.8**	**D**

Intersection 16 **Fidelity Way/Blue Oaks Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	408	382	93.5%	11.8	2.6	B
	Subtotal	**408**	**382**	**93.5%**	**11.8**	**2.6**	**B**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,720	1,276	74.2%	6.2	0.9	A
	Right Turn	16	11	67.5%	1.5	0.8	A
	Subtotal	**1,736**	**1,287**	**74.1%**	**6.1**	**0.9**	**A**
WB	Left Turn	36	29	81.1%	14.1	4.6	B
	Through	2,088	1,883	90.2%	13.7	28.4	B
	Right Turn						
	Subtotal	**2,124**	**1,912**	**90.0%**	**13.6**	**27.8**	**B**
Total		**4,268**	**3,580**	**83.9%**	**9.6**	**11.3**	**A**

SimTraffic Post-Processor **Amoruso Ranch Specific Plan EIR - Eureka Douglas**
Average Results from 10 Runs **2035 Cumulative Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 90 **Eureka Rd/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	576	580	100.6%	72.5	14.1	E
	Through	660	663	100.5%	51.1	4.0	D
	Right Turn	20	20	102.0%	37.4	14.0	D
	Subtotal	**1,256**	**1,263**	**100.6%**	**60.8**	**7.1**	**E**
SB	Left Turn	980	824	84.1%	180.1	24.7	F
	Through	844	797	94.4%	52.9	4.4	D
	Right Turn						
	Subtotal	**1,824**	**1,621**	**88.9%**	**117.7**	**11.9**	**F**
EB	Left Turn	168	154	91.4%	79.3	20.1	E
	Through	1,360	1,340	98.5%	43.6	2.7	D
	Right Turn	452	407	90.0%	42.2	2.5	D
	Subtotal	**1,980**	**1,900**	**96.0%**	**46.4**	**3.3**	**D**
WB	Left Turn	68	61	90.0%	87.0	13.8	F
	Through	1,704	1,639	96.2%	48.4	7.8	D
	Right Turn	572	497	86.9%	29.5	6.1	C
	Subtotal	**2,344**	**2,197**	**93.7%**	**45.2**	**7.5**	**D**
Total		**7,404**	**6,981**	**94.3%**	**65.1**	**5.1**	**E**

Intersection 105 **Rocky Ridge Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	308	302	98.1%	99.7	24.3	F
	Through	524	502	95.9%	41.6	4.8	D
	Right Turn	268	270	100.6%	29.4	3.9	C
	Subtotal	**1,100**	**1,074**	**97.6%**	**55.1**	**9.3**	**E**
SB	Left Turn	264	263	99.5%	93.6	9.0	F
	Through	1,196	1,204	100.7%	47.8	3.3	D
	Right Turn	512	478	93.3%	59.6	19.3	E
	Subtotal	**1,972**	**1,944**	**98.6%**	**57.1**	**5.5**	**E**
EB	Left Turn	132	128	97.0%	129.8	44.7	F
	Through	1,504	1,450	96.4%	31.2	2.9	C
	Right Turn	160	141	88.0%	15.1	2.6	B
	Subtotal	**1,796**	**1,719**	**95.7%**	**37.4**	**4.3**	**D**
WB	Left Turn	172	152	88.4%	65.6	11.6	E
	Through	1,904	1,766	92.8%	48.7	8.2	D
	Right Turn	184	165	89.6%	25.5	7.4	C
	Subtotal	**2,260**	**2,083**	**92.2%**	**48.1**	**7.7**	**D**
Total		**7,128**	**6,820**	**95.7%**	**49.1**	**4.0**	**D**

Intersection 102 **Santa Clara Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	88	90	102.7%	70.4	15.0	E
	Through	36	36	100.0%	60.9	11.6	E
	Right Turn	120	122	101.7%	21.5	6.9	C
	Subtotal	**244**	**248**	**101.8%**	**45.8**	**5.8**	**D**
SB	Left Turn	176	164	93.2%	61.0	6.4	E
	Through	92	84	90.9%	55.2	10.5	E
	Right Turn	136	148	109.1%	36.4	8.4	D
	Subtotal	**404**	**396**	**98.0%**	**50.7**	**6.3**	**D**
EB	Left Turn	148	130	87.8%	63.9	19.8	E
	Through	1,744	1,683	96.5%	25.8	3.4	C
	Right Turn	44	46	104.5%	30.9	6.8	C
	Subtotal	**1,936**	**1,859**	**96.0%**	**28.7**	**4.0**	**C**
WB	Left Turn	176	150	85.2%	44.4	7.4	D
	Through	2,472	2,236	90.5%	21.7	2.1	C
	Right Turn	44	40	91.8%	11.9	3.6	B
	Subtotal	**2,692**	**2,427**	**90.1%**	**23.0**	**2.5**	**C**
Total		**5,276**	**4,930**	**93.4%**	**28.6**	**1.8**	**C**

Intersection 103 **Sierra Gardens Dr/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	176	164	93.4%	88.7	27.8	F
	Through	40	45	112.0%	90.7	29.3	F
	Right Turn	32	32	98.8%	79.4	21.8	E
	Subtotal	**248**	**241**	**97.1%**	**87.7**	**25.0**	**F**
SB	Left Turn	244	236	96.7%	61.3	14.0	E
	Through	52	51	97.7%	69.3	27.0	E
	Right Turn	40	51	128.0%	56.5	18.1	E
	Subtotal	**336**	**338**	**100.6%**	**61.7**	**14.7**	**E**
EB	Left Turn	48	41	85.0%	79.5	24.8	E
	Through	1,792	1,728	96.4%	14.7	1.2	B
	Right Turn	40	44	111.0%	8.8	1.3	A
	Subtotal	**1,880**	**1,813**	**96.4%**	**16.0**	**1.3**	**B**
WB	Left Turn	28	24	85.7%	101.6	14.0	F
	Through	2,660	2,415	90.8%	26.7	4.4	C
	Right Turn						
	Subtotal	**2,688**	**2,439**	**90.7%**	**27.5**	**4.5**	**C**
Total		**5,152**	**4,830**	**93.8%**	**28.7**	**3.2**	**C**

Intersection 101 **N. Sunrise Ave/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	420	393	93.5%	131.9	48.6	F
	Through	508	498	98.1%	47.0	6.0	D
	Right Turn	172	190	110.5%	25.0	3.1	C
	Subtotal	**1,100**	**1,081**	**98.3%**	**74.5**	**21.1**	**E**
SB	Left Turn	184	183	99.6%	66.9	8.0	E
	Through	812	831	102.4%	49.4	3.9	D
	Right Turn	492	482	98.0%	23.7	6.9	C
	Subtotal	**1,488**	**1,496**	**100.6%**	**43.3**	**3.7**	**D**
EB	Left Turn	448	332	74.0%	252.3	29.5	F
	Through	1,692	1,599	94.5%	65.1	6.8	E
	Right Turn	208	220	105.8%	12.9	2.2	B
	Subtotal	**2,348**	**2,151**	**91.6%**	**88.7**	**9.6**	**F**
WB	Left Turn	216	205	94.8%	59.8	5.4	E
	Through	2,332	2,057	88.2%	45.0	2.8	D
	Right Turn	152	130	85.8%	52.3	8.6	D
	Subtotal	**2,700**	**2,392**	**88.6%**	**46.7**	**2.6**	**D**
Total		**7,636**	**7,121**	**93.3%**	**62.9**	**4.0**	**E**

Intersection 104 **Target Dwy/Douglas Blvd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	144	150	104.2%	88.0	26.9	F
	Through	24	24	101.7%	78.3	31.6	E
	Right Turn	56	54	95.7%	58.1	25.5	E
	Subtotal	**224**	**228**	**101.8%**	**79.9**	**23.6**	**E**
SB	Left Turn	116	106	91.0%	57.5	19.1	E
	Through	12	16	130.0%	65.3	32.7	E
	Right Turn	132	127	96.1%	47.3	20.6	D
	Subtotal	**260**	**248**	**95.4%**	**53.4**	**18.8**	**D**
EB	Left Turn	168	141	84.0%	72.0	14.8	E
	Through	1,668	1,589	95.3%	18.1	2.5	B
	Right Turn	64	66	102.5%	18.0	4.9	B
	Subtotal	**1,900**	**1,796**	**94.5%**	**22.4**	**3.5**	**C**
WB	Left Turn	72	70	96.7%	111.5	15.7	F
	Through	2,488	2,243	90.1%	41.3	1.9	D
	Right Turn	16	15	92.5%	41.2	8.2	D
	Subtotal	**2,576**	**2,327**	**90.3%**	**43.4**	**2.0**	**D**
Total		**4,960**	**4,599**	**92.7%**	**37.6**	**3.1**	**D**

Intersection 77 **Douglas Blvd/E. Roseville Pkwy** **Signal**

SimTraffic Post-Processor **Amoruso Ranch Specific Plan EIR - Eureka Douglas**
Average Results from 10 Runs **2035 Cumulative Plus Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	264	258	97.6%	65.7	3.6	E
	Through	736	734	99.7%	52.0	4.2	D
	Right Turn	56	57	101.4%	21.5	4.6	C
	Subtotal	**1,056**	**1,048**	**99.2%**	**53.8**	**3.4**	**D**
SB	Left Turn	820	746	91.0%	135.4	32.6	F
	Through	1,144	1,133	99.1%	51.8	4.2	D
	Right Turn	148	142	95.7%	6.6	1.3	A
	Subtotal	**2,112**	**2,021**	**95.7%**	**79.5**	**12.3**	**E**
EB	Left Turn	224	203	90.7%	56.8	4.7	E
	Through	1,872	1,724	92.1%	31.7	1.9	C
	Right Turn	412	381	92.5%	24.4	1.9	C
	Subtotal	**2,508**	**2,308**	**92.0%**	**32.7**	**1.8**	**C**
WB	Left Turn	124	113	91.3%	74.2	9.8	E
	Through	1,664	1,602	96.3%	64.8	7.6	E
	Right Turn	1,000	951	95.1%	60.1	19.6	E
	Subtotal	**2,788**	**2,666**	**95.6%**	**63.5**	**11.7**	**E**
Total		**8,464**	**8,043**	**95.0%**	**57.5**	**4.8**	**E**

Intersection 87 **N. Sunrise Ave/Eureka Rd** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	556	561	100.9%	70.5	11.6	E
	Through	548	558	101.9%	43.8	4.1	D
	Right Turn	216	211	97.6%	4.0	0.5	A
	Subtotal	**1,320**	**1,330**	**100.8%**	**48.7**	**5.1**	**D**
SB	Left Turn	172	178	103.5%	69.3	11.5	E
	Through	496	496	99.9%	50.6	6.2	D
	Right Turn	256	258	100.8%	28.0	4.4	C
	Subtotal	**924**	**932**	**100.8%**	**47.8**	**3.3**	**D**
EB	Left Turn	236	226	95.9%	124.7	51.3	F
	Through	1,688	1,645	97.5%	30.6	3.6	C
	Right Turn	392	370	94.4%	14.3	1.5	B
	Subtotal	**2,316**	**2,242**	**96.8%**	**37.6**	**7.1**	**D**
WB	Left Turn	192	181	94.4%	114.4	22.2	F
	Through	2,612	2,416	92.5%	79.1	21.9	E
	Right Turn	64	57	89.4%	34.3	20.6	C
	Subtotal	**2,868**	**2,655**	**92.6%**	**80.6**	**21.6**	**F**
Total		**7,428**	**7,158**	**96.4%**	**56.9**	**7.5**	**E**

Intersection 85 **I-80 WB Ramps/Atlantic** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn						
	Through						
	Right Turn	1,160	1,184	102.1%	1.8	0.4	A
	Subtotal	**1,160**	**1,184**	**102.1%**	**1.8**	**0.4**	**A**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	860	797	92.7%	18.2	0.9	B
	Right Turn	736	675	91.7%	30.5	3.0	C
	Subtotal	**1,596**	**1,472**	**92.2%**	**23.9**	**1.9**	**C**
WB	Left Turn	1,000	817	81.7%	111.5	27.0	F
	Through	1,284	1,141	88.9%	7.7	1.4	A
	Right Turn						
	Subtotal	**2,284**	**1,958**	**85.7%**	**51.0**	**11.6**	**D**
Total		**5,040**	**4,614**	**91.5%**	**29.7**	**4.9**	**C**

Intersection 86 **I-80 EB Ramps/Eureka Rd-Atlantic St** **Signal**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	164	144	87.8%	46.5	13.5	D
	Through	456	460	100.8%	51.6	6.0	D
	Right Turn	588	607	103.3%	7.4	1.1	A
	Subtotal	**1,208**	**1,211**	**100.2%**	**28.8**	**4.2**	**C**
SB	Left Turn	392	332	84.8%	173.0	53.3	F
	Through						
	Right Turn	356	316	88.7%	177.9	86.8	F
	Subtotal	**748**	**648**	**86.6%**	**174.2**	**61.4**	**F**
EB	Left Turn	224	161	71.8%	246.1	41.7	F
	Through	1,480	1,481	100.1%	34.6	2.3	C
	Right Turn	316	282	89.1%	14.1	1.0	B
	Subtotal	**2,020**	**1,924**	**95.2%**	**49.3**	**4.2**	**D**
WB	Left Turn						
	Through	1,812	1,654	91.3%	41.9	13.5	D
	Right Turn	1,632	1,497	91.7%	46.1	13.6	D
	Subtotal	**3,444**	**3,150**	**91.5%**	**43.9**	**13.4**	**D**
Total		**7,420**	**6,933**	**93.4%**	**54.5**	**5.8**	**D**

Intersection 38 **Pleasant Grove Blvd/Fairway Dr** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	156	135	86.7%	98.5	19.4	F
	Through	341	306	89.6%	44.7	5.5	D
	Right Turn	162	141	86.9%	22.9	2.2	C
	Subtotal	**659**	**582**	**88.2%**	**52.0**	**7.6**	**D**
SB	Left Turn	32	25	77.8%	118.6	24.3	F
	Through	244	212	87.0%	145.4	31.4	F
	Right Turn	44	35	78.4%	133.8	42.0	F
	Subtotal	**320**	**272**	**84.9%**	**141.4**	**31.5**	**F**
EB	Left Turn	69	68	98.3%	57.5	4.3	E
	Through	129	129	99.6%	51.4	4.4	D
	Right Turn	143	119	83.1%	124.4	35.5	F
	Subtotal	**341**	**315**	**92.4%**	**80.6**	**14.9**	**F**
WB	Left Turn	173	141	81.3%	159.1	44.6	F
	Through	146	144	98.3%	37.6	3.0	D
	Right Turn	47	45	94.7%	17.3	2.1	B
	Subtotal	**366**	**329**	**89.8%**	**87.0**	**18.5**	**F**
Total		**1,686**	**1,497**	**88.8%**	**81.8**	**6.3**	**F**

Intersection 35 **Pleasant Grove Blvd/Highland Pointe Dr-Wal-Mart** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	104	91	87.0%	143.2	26.4	F
	Through	697	588	84.3%	129.0	24.3	F
	Right Turn	11	8	71.8%	124.5	24.7	F
	Subtotal	**812**	**686**	**84.5%**	**131.0**	**22.7**	**F**
SB	Left Turn	46	42	90.7%	91.4	23.6	F
	Through	531	481	90.5%	52.2	15.3	D
	Right Turn	78	66	84.4%	7.0	1.4	A
	Subtotal	**655**	**588**	**89.8%**	**50.1**	**12.9**	**D**
EB	Left Turn	167	108	64.7%	281.2	40.4	F
	Through	2	2	85.0%	67.2	53.9	E
	Right Turn	119	104	87.3%	88.6	21.4	F
	Subtotal	**288**	**214**	**74.2%**	**187.0**	**30.1**	**F**
WB	Left Turn	65	68	104.0%	52.2	3.1	D
	Through	6	7	113.3%	52.3	11.9	D
	Right Turn	77	77	100.3%	51.1	19.3	D
	Subtotal	**148**	**152**	**102.4%**	**51.7**	**11.0**	**D**
Total		**1,903**	**1,640**	**86.2%**	**101.9**	**8.6**	**F**

Intersection 37 **Pleasant Grove Blvd/Hwy 65 NB Ramp** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	201	199	99.0%	57.2	6.0	E
	Through						
	Right Turn	166	163	98.4%	39.5	8.0	D
	Subtotal	**367**	**362**	**98.7%**	**49.3**	**5.6**	**D**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	567	493	86.9%	14.2	1.5	B
	Right Turn	170	133	78.0%	11.8	0.6	B
	Subtotal	**737**	**625**	**84.8%**	**13.7**	**1.3**	**B**
WB	Left Turn						
	Through	535	457	85.5%	8.3	2.0	A
	Right Turn	57	47	82.6%	1.6	0.3	A
	Subtotal	**592**	**504**	**85.2%**	**7.7**	**1.9**	**A**
Total		**1,696**	**1,492**	**88.0%**	**20.3**	**2.1**	**C**

Intersection 36 **Pleasant Grove Blvd/Hwy 65 SB Ramp** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	41	43	103.9%	25.2	7.3	C
	Through						
	Right Turn	116	121	104.5%	26.0	13.8	C
	Subtotal	**157**	**164**	**104.3%**	**25.7**	**11.7**	**C**
EB	Left Turn						
	Through	696	587	84.3%	15.5	2.2	B
	Right Turn	3	2	50.0%	6.1	6.8	A
	Subtotal	**699**	**588**	**84.2%**	**15.4**	**2.2**	**B**
WB	Left Turn						
	Through	737	667	90.5%	15.7	7.1	B
	Right Turn						
	Subtotal	**737**	**667**	**90.5%**	**15.7**	**7.2**	**B**
Total		**1,593**	**1,419**	**89.1%**	**16.7**	**5.3**	**B**

Intersection 64 **Chase Dr/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	20	18	92.0%	59.0	6.8	E
	Through						
	Right Turn	19	20	106.8%	1.2	0.2	A
	Subtotal	**39**	**39**	**99.2%**	**28.7**	**4.7**	**C**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	616	430	69.7%	26.9	5.3	C
	Right Turn	34	25	74.7%	15.1	5.7	B
	Subtotal	**650**	**455**	**70.0%**	**26.3**	**5.2**	**C**
WB	Left Turn	122	88	71.8%	76.0	17.2	E
	Through	605	470	77.7%	11.0	2.0	B
	Right Turn						
	Subtotal	**727**	**558**	**76.7%**	**21.3**	**4.5**	**C**
Total		**1,416**	**1,052**	**74.3%**	**23.7**	**2.2**	**C**

Intersection 69 **Creekside Ridge Dr/Roseville Pkwy-North Drwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	15	14	95.3%	82.0	10.0	F
	Through						
	Right Turn	18	17	92.8%	21.5	8.4	C
	Subtotal	**33**	**31**	**93.9%**	**50.1**	**11.2**	**D**
SB	Left Turn	72	74	103.2%	57.9	6.3	E
	Through	1	0	40.0%	11.1	18.1	B
	Right Turn	76	72	95.3%	53.3	10.5	D
	Subtotal	**149**	**147**	**98.7%**	**55.9**	**5.8**	**E**
EB	Left Turn	26	19	74.2%	56.8	15.9	E
	Through	686	480	69.9%	16.1	1.4	B
	Right Turn	3	2	70.0%	0.3	0.5	A
	Subtotal	**715**	**501**	**70.1%**	**17.6**	**1.5**	**B**
WB	Left Turn	10	7	70.0%	69.0	21.9	E
	Through	703	571	81.3%	24.4	2.7	C
	Right Turn	57	47	81.8%	20.3	3.3	C
	Subtotal	**770**	**625**	**81.2%**	**24.6**	**2.4**	**C**
Total		**1,667**	**1,304**	**78.2%**	**26.1**	**2.1**	**C**

Intersection 65 **Gibson Dr-Castaic Ct/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1	0	40.0%	7.3	14.0	A
	Through	1	2	160.0%	51.7	44.4	D
	Right Turn	11	14	123.6%	24.8	12.8	C
	Subtotal	**13**	**16**	**120.0%**	**30.3**	**9.9**	**C**
SB	Left Turn	299	242	80.8%	156.7	22.5	F
	Through	2	1	40.0%	105.4	88.2	F
	Right Turn	92	65	70.5%	177.6	32.2	F
	Subtotal	**393**	**307**	**78.2%**	**161.1**	**22.7**	**F**
EB	Left Turn	54	39	71.5%	80.0	7.9	E
	Through	580	408	70.3%	11.8	1.4	B
	Right Turn						
	Subtotal	**634**	**447**	**70.4%**	**17.8**	**1.7**	**B**
WB	Left Turn	16	11	67.5%	64.4	12.3	E
	Through	635	499	78.6%	33.7	4.0	C
	Right Turn	165	129	78.4%	5.5	1.0	A
	Subtotal	**816**	**640**	**78.4%**	**28.5**	**3.1**	**C**
Total		**1,856**	**1,409**	**75.9%**	**53.9**	**4.4**	**D**

Intersection 71 **N. Sunrise/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	168	159	94.6%	109.2	13.3	F
	Through	17	17	100.0%	43.6	16.4	D
	Right Turn	72	71	98.5%	10.3	2.3	B
	Subtotal	**257**	**247**	**96.0%**	**76.4**	**10.0**	**E**
SB	Left Turn	4	4	87.5%	99.4	63.0	F
	Through	49	47	95.9%	91.8	26.8	F
	Right Turn	94	86	91.8%	45.7	8.0	D
	Subtotal	**147**	**137**	**93.1%**	**64.5**	**10.2**	**E**
EB	Left Turn	24	15	64.2%	58.7	10.4	E
	Through	646	448	69.4%	32.3	2.5	C
	Right Turn	174	122	69.8%	14.9	1.9	B
	Subtotal	**844**	**585**	**69.3%**	**29.4**	**2.3**	**C**
WB	Left Turn	69	40	58.4%	270.0	25.0	F
	Through	694	486	70.0%	63.7	12.6	E
	Right Turn						
	Subtotal	**763**	**526**	**69.0%**	**79.6**	**12.6**	**E**
Total		**2,011**	**1,495**	**74.3%**	**57.9**	**5.2**	**E**

Intersection 67 **Reserve Dr/Roseville Pkwy-Burger King Drwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	96	73	75.6%	236.1	26.8	F
	Through	24	20	81.3%	251.8	31.0	F
	Right Turn	118	86	72.6%	186.4	40.7	F
	Subtotal	**238**	**178**	**74.7%**	**213.8**	**28.4**	**F**
SB	Left Turn	75	77	103.1%	48.2	4.2	D
	Through	49	46	94.1%	50.0	6.1	D
	Right Turn	21	21	98.1%	7.7	4.4	A
	Subtotal	**145**	**144**	**99.3%**	**43.0**	**5.2**	**D**
EB	Left Turn	8	6	75.0%	73.7	17.2	E
	Through	781	571	73.1%	48.3	6.2	D
	Right Turn	59	40	67.8%	44.9	14.6	D
	Subtotal	**848**	**617**	**72.7%**	**48.3**	**6.4**	**D**
WB	Left Turn	89	62	69.2%	83.4	22.6	F
	Through	668	516	77.2%	16.3	3.3	B
	Right Turn	65	52	79.2%	3.2	0.5	A
	Subtotal	**822**	**629**	**76.5%**	**21.9**	**4.3**	**C**
Total		**2,053**	**1,567**	**76.3%**	**56.0**	**4.0**	**E**

Intersection 72 **Secret Ravine Pkwy/Roseville Pkwy-Douglas Blvd** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	41	37	89.8%	129.6	41.7	F
	Through						
	Right Turn	132	118	89.7%	97.1	33.9	F
	Subtotal	**173**	**155**	**89.7%**	**105.3**	**29.2**	**F**
EB	Left Turn	167	121	72.2%	50.0	9.7	D
	Through	512	364	71.0%	4.2	1.8	A
	Right Turn	1	1	80.0%	2.9	7.0	A
	Subtotal	**680**	**485**	**71.3%**	**15.6**	**3.3**	**B**
WB	Left Turn	4	3	67.5%	147.7	49.0	F
	Through	592	457	77.1%	97.0	28.4	F
	Right Turn	38	32	84.2%	68.1	27.6	E
	Subtotal	**634**	**491**	**77.5%**	**95.3**	**28.0**	**F**
Total		**1,487**	**1,131**	**76.1%**	**61.9**	**11.6**	**E**

Intersection 70 **Taylor Rd/Roseville Pkwy** **Signal**

SimTraffic Post-Processor **Amoruso Ranch EIR**
Average Results from 10 Runs **2035 Cumulative Plus Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	83	88	106.5%	61.7	7.1	E
	Through	110	105	95.0%	46.6	3.7	D
	Right Turn	57	60	104.7%	29.8	4.0	C
	Subtotal	**250**	**253**	**101.0%**	**48.0**	**2.9**	**D**
SB	Left Turn	111	49	44.5%	425.6	28.1	F
	Through	71	58	82.3%	52.8	6.1	D
	Right Turn	51	43	83.9%	30.9	5.0	C
	Subtotal	**233**	**151**	**64.6%**	**169.9**	**16.3**	**F**
EB	Left Turn	73	47	64.4%	137.6	49.7	F
	Through	661	476	72.1%	25.2	2.2	C
	Right Turn	26	19	73.5%	5.8	2.8	A
	Subtotal	**760**	**542**	**71.4%**	**34.4**	**5.1**	**C**
WB	Left Turn	52	33	63.3%	71.8	16.7	E
	Through	649	503	77.5%	68.4	10.2	E
	Right Turn	253	178	70.4%	49.5	4.5	D
	Subtotal	**954**	**714**	**74.8%**	**64.0**	**8.6**	**E**
Total		**2,197**	**1,659**	**75.5%**	**61.4**	**4.2**	**E**

Intersection 66 **Roseville Pkwy/West Mall Dwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	8	6	78.8%	70.4	28.7	E
	Through	721	549	76.2%	18.7	3.5	B
	Right Turn	26	20	76.9%	3.2	1.4	A
	Subtotal	**755**	**576**	**76.3%**	**18.7**	**3.4**	**B**
SB	Left Turn	81	60	73.6%	75.0	12.6	E
	Through	800	593	74.1%	13.9	5.6	B
	Right Turn	9	6	67.8%	8.7	5.5	A
	Subtotal	**890**	**659**	**74.0%**	**19.4**	**4.6**	**B**
EB	Left Turn	6	6	106.7%	55.9	15.1	E
	Through	1	1	110.0%	56.5	30.6	E
	Right Turn	6	7	118.3%	24.8	9.5	C
	Subtotal	**13**	**15**	**112.3%**	**39.7**	**8.2**	**D**
WB	Left Turn	34	36	104.7%	45.6	7.4	D
	Through	1	1	80.0%	15.6	17.5	B
	Right Turn	90	89	99.3%	2.8	0.4	A
	Subtotal	**125**	**126**	**100.6%**	**15.1**	**3.0**	**B**
Total		**1,783**	**1,375**	**77.1%**	**19.0**	**3.1**	**B**

Intersection 63 **Gibson Dr/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**

NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	19	19	98.9%	70.0	21.2	E
	Through						
	Right Turn	254	235	92.6%	31.3	19.0	C
	Subtotal	**273**	**254**	**93.1%**	**33.9**	**17.5**	**C**
EB	Left Turn	117	83	70.5%	74.5	14.7	E
	Through	631	437	69.3%	6.5	1.8	A
	Right Turn						
	Subtotal	**748**	**520**	**69.5%**	**17.2**	**2.2**	**B**
WB	Left Turn						
	Through	599	420	70.2%	51.6	21.3	D
	Right Turn	26	19	73.8%	44.8	32.5	D
	Subtotal	**625**	**439**	**70.3%**	**51.3**	**21.8**	**D**
Total		**1,646**	**1,213**	**73.7%**	**32.9**	**9.9**	**C**

Intersection 174 **Galleria/Antelope Creek** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	28	21	75.7%	49.0	8.5	D
	Through	497	423	85.1%	17.3	2.5	B
	Right Turn	50	40	80.2%	1.8	0.1	A
	Subtotal	**575**	**484**	**84.2%**	**17.4**	**2.2**	**B**
SB	Left Turn	71	54	76.1%	180.3	38.3	F
	Through	455	348	76.4%	118.7	30.5	F
	Right Turn	43	42	96.7%	5.9	1.8	A
	Subtotal	**569**	**443**	**77.9%**	**115.6**	**27.5**	**F**
EB	Left Turn	135	128	94.9%	70.0	30.8	E
	Through	18	18	98.9%	49.2	14.9	D
	Right Turn	28	26	94.3%	1.4	1.6	A
	Subtotal	**181**	**172**	**95.2%**	**57.5**	**25.3**	**E**
WB	Left Turn	123	81	66.0%	196.8	73.1	F
	Through	24	23	95.8%	59.1	12.6	E
	Right Turn	84	84	99.6%	6.2	5.3	A
	Subtotal	**231**	**188**	**81.3%**	**92.3**	**27.8**	**F**
Total		**1,556**	**1,288**	**82.7%**	**67.0**	**13.5**	**E**

Intersection 68 **Galleria/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	173	101	58.2%	314.0	26.1	F
	Through	225	204	90.8%	51.4	3.5	D

NB	Right Turn	21	20	94.3%	4.6	0.5	A
	Subtotal	**419**	**325**	**77.5%**	**130.1**	**9.4**	**F**
SB	Left Turn	210	118	56.0%	248.4	21.8	F
	Through	248	208	84.0%	36.2	3.9	D
	Right Turn	123	105	85.7%	4.3	0.5	A
	Subtotal	**581**	**431**	**74.3%**	**86.2**	**4.3**	**F**
EB	Left Turn	183	122	66.6%	110.1	20.2	F
	Through	486	365	75.0%	52.6	11.0	D
	Right Turn	281	201	71.4%	7.4	1.3	A
	Subtotal	**950**	**687**	**72.3%**	**49.7**	**7.7**	**D**
WB	Left Turn	86	72	83.8%	75.0	21.5	E
	Through	504	411	81.6%	45.6	9.0	D
	Right Turn	173	140	80.6%	3.3	0.3	A
	Subtotal	**763**	**623**	**81.6%**	**39.7**	**7.5**	**D**
Total		**2,713**	**2,066**	**76.2%**	**66.9**	**4.3**	**E**

Intersection 34 **Pleasant Grove Blvd/Roseville Pkwy** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	241	148	61.4%	113.3	14.6	F
	Through	391	292	74.7%	56.2	7.2	E
	Right Turn	292	223	76.5%	7.3	1.3	A
	Subtotal	**924**	**663**	**71.8%**	**52.6**	**3.3**	**D**
SB	Left Turn	81	63	77.4%	179.1	39.8	F
	Through	323	239	73.9%	203.4	42.6	F
	Right Turn	6	5	83.3%	98.9	50.6	F
	Subtotal	**410**	**306**	**74.7%**	**197.0**	**41.6**	**F**
EB	Left Turn	17	14	82.9%	115.8	24.7	F
	Through	345	242	70.3%	248.8	33.1	F
	Right Turn	203	139	68.4%	236.6	34.0	F
	Subtotal	**565**	**395**	**70.0%**	**239.7**	**32.9**	**F**
WB	Left Turn	236	152	64.4%	276.8	34.9	F
	Through	435	432	99.3%	48.6	6.2	D
	Right Turn	63	64	102.2%	14.6	3.5	B
	Subtotal	**734**	**648**	**88.3%**	**98.7**	**11.4**	**F**
Total		**2,633**	**2,013**	**76.5%**	**125.9**	**8.9**	**F**

Intersection 107 **Foothills Blvd/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	165	112	67.9%	128.2	5.3	F
	Right Turn	139	80	57.7%	119.8	12.7	F
	Subtotal	**304**	**192**	**63.3%**	**124.6**	**7.5**	**F**
SB	Left Turn	494	377	76.3%	39.1	1.4	D
	Through	123	107	86.7%	13.6	7.8	B
	Right Turn						
	Subtotal	**617**	**483**	**78.3%**	**33.5**	**1.9**	**C**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	214	120	55.9%	123.7	12.6	F
	Through						
	Right Turn	592	323	54.5%	77.3	10.9	E
	Subtotal	**806**	**442**	**54.9%**	**89.9**	**11.7**	**F**
Total		**1,727**	**1,118**	**64.7%**	**71.4**	**4.8**	**E**

Intersection 110 **Melody Ln/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through						
	Right Turn	63	51	80.3%	84.9	142.1	F
	Subtotal	**63**	**51**	**80.3%**	**84.9**	**142.1**	**F**
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	588	416	70.8%	13.8	7.6	B
	Right Turn	4	2	60.0%	9.6	9.1	A
	Subtotal	**592**	**419**	**70.7%**	**13.7**	**7.5**	**B**
WB	Left Turn	86	60	69.4%	25.3	5.2	C
	Through	704	457	64.9%	5.0	0.6	A
	Right Turn						
	Subtotal	**790**	**517**	**65.4%**	**7.4**	**1.0**	**A**
Total		**1,445**	**986**	**68.2%**	**12.8**	**6.9**	**B**

Intersection 109 **Northridge Dr/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1	1	80.0%	24.5	32.3	C
	Through						
	Right Turn	6	7	108.3%	20.4	8.6	C
	Subtotal	**7**	**7**	**104.3%**	**24.3**	**13.0**	**C**
SB	Left Turn	9	9	94.4%	62.2	8.6	E
	Through						
	Right Turn	6	6	101.7%	22.1	10.9	C
	Subtotal	**15**	**15**	**97.3%**	**45.3**	**6.0**	**D**
EB	Left Turn	4	3	85.0%	71.4	35.5	E
	Through	581	424	72.9%	6.8	2.0	A
	Right Turn	7	5	68.6%	4.2	3.7	A
	Subtotal	**592**	**432**	**72.9%**	**7.2**	**2.0**	**A**
WB	Left Turn	3	2	53.3%	64.4	32.2	E
	Through	684	439	64.1%	10.3	3.6	B
	Right Turn						
	Subtotal	**687**	**440**	**64.1%**	**10.5**	**3.6**	**B**
Total		**1,301**	**894**	**68.7%**	**9.6**	**2.3**	**A**

Intersection 111 **Riverside Ave/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	361	209	57.8%	136.9	6.0	F
	Through	169	110	65.3%	46.3	4.2	D
	Right Turn	71	46	64.6%	11.9	2.9	B
	Subtotal	**601**	**365**	**60.7%**	**93.9**	**4.9**	**F**
SB	Left Turn	76	55	72.8%	232.2	70.1	F
	Through	183	113	61.5%	359.6	82.8	F
	Right Turn	60	40	66.3%	291.5	91.6	F
	Subtotal	**319**	**208**	**65.1%**	**313.1**	**79.6**	**F**
EB	Left Turn	62	26	41.9%	421.7	120.3	F
	Through	281	206	73.5%	28.2	4.0	C
	Right Turn	307	225	73.2%	3.2	0.2	A
	Subtotal	**650**	**457**	**70.3%**	**38.0**	**7.3**	**D**
WB	Left Turn	10	7	71.0%	252.0	63.1	F
	Through	406	299	73.6%	235.5	42.5	F
	Right Turn						
	Subtotal	**416**	**306**	**73.6%**	**235.7**	**42.2**	**F**
Total		**1,986**	**1,336**	**67.3%**	**140.2**	**18.0**	**F**

Intersection 108 **Vernon St/Cirby Way** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	4	3	65.0%	83.9	46.4	F
	Through	14	13	90.7%	60.2	11.3	E
	Right Turn	28	28	100.0%	36.4	6.9	D
	Subtotal	**46**	**43**	**94.1%**	**46.2**	**6.8**	**D**
SB	Left Turn	16	14	87.5%	116.1	32.6	F
	Through	16	12	74.4%	118.0	39.9	F
	Right Turn	176	109	61.6%	264.0	52.2	F
	Subtotal	**208**	**134**	**64.6%**	**235.2**	**47.1**	**F**
EB	Left Turn	92	62	67.5%	56.1	8.2	E
	Through	535	392	73.2%	23.0	2.6	C
	Right Turn	5	4	86.0%	19.5	6.3	B
	Subtotal	**632**	**458**	**72.5%**	**27.4**	**3.1**	**C**
WB	Left Turn	23	13	56.1%	95.7	18.2	F
	Through	626	368	58.7%	60.4	13.3	E
	Right Turn	11	9	79.1%	41.0	16.5	D
	Subtotal	**660**	**389**	**59.0%**	**61.1**	**13.2**	**E**
Total		**1,546**	**1,025**	**66.3%**	**67.9**	**5.7**	**E**

Intersection 203 **Riverside Ave/I-80 WB Ramps** **Signal**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	466	271	58.1%	195.1	19.9	F
	Right Turn	47	36	76.4%	29.5	11.9	C
	Subtotal	**513**	**307**	**59.8%**	**175.8**	**19.3**	**F**
SB	Left Turn						
	Through	256	174	68.0%	11.1	2.0	B
	Right Turn	244	170	69.8%	0.6	0.1	A
	Subtotal	**500**	**344**	**68.9%**	**5.9**	**0.9**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	215	181	84.0%	58.9	29.5	E
	Through						
	Right Turn	114	79	68.9%	197.8	80.4	F
	Subtotal	**329**	**259**	**78.8%**	**100.1**	**38.2**	**F**
Total		**1,342**	**910**	**67.8%**	**89.6**	**15.1**	**F**

Intersection 204 **Riverside Ave/I-80 EB Ramps** **Signal**

SimTraffic Post-Processor **Amoruso EIR**
Average Results from 10 Runs **2035 Cumulative Plus Project**
Volume and Delay by Movement **PM Peak Hour**

		Volume (vehicles)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	384	301	78.3%	122.9	39.5	F
	Right Turn	18	12	65.6%	128.0	39.1	F
	Subtotal	**402**	**312**	**77.7%**	**123.1**	**39.2**	**F**
SB	Left Turn	27	20	75.2%	92.1	18.6	F
	Through	395	296	74.8%	23.2	2.9	C
	Right Turn						
	Subtotal	**422**	**316**	**74.9%**	**27.6**	**3.2**	**C**
EB	Left Turn						
	Through	108	110	102.2%	61.7	7.1	E
	Right Turn	33	35	104.8%	23.8	7.0	C
	Subtotal	**141**	**145**	**102.8%**	**52.6**	**5.7**	**D**
WB	Left Turn	32	29	89.4%	51.1	9.0	D
	Through						
	Right Turn	120	96	79.8%	71.6	20.2	E
	Subtotal	**152**	**124**	**81.8%**	**66.8**	**14.9**	**E**
Total		**1,117**	**898**	**80.4%**	**70.2**	**13.3**	**E**

INTERSECTINS OUTSIDE OF ROSEVILLE

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	18	578	997	88	356	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	20	635	1096	97	391	1
RTOR Reduction (vph)	0	0	0	65	0	1
Lane Group Flow (vph)	20	635	1096	32	391	0
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.1	21.2	15.1	15.1	14.0	14.0
Effective Green, g (s)	1.1	21.2	15.1	15.1	14.0	14.0
Actuated g/C Ratio	0.02	0.47	0.33	0.33	0.31	0.31
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	43	2385	1699	529	548	490
v/s Ratio Prot	0.01	c0.12	c0.22		c0.22	
v/s Ratio Perm				0.02		0.00
v/c Ratio	0.47	0.27	0.65	0.06	0.71	0.00
Uniform Delay, d1	21.8	7.3	12.8	10.2	13.8	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	0.1	0.9	0.0	4.4	0.0
Delay (s)	29.5	7.3	13.6	10.3	18.2	10.8
Level of Service	C	A	B	B	B	B
Approach Delay (s)		8.0	13.4		18.2	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	546	389	183	897	184	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	607	432	203	997	204	228
RTOR Reduction (vph)	0	309	0	0	0	140
Lane Group Flow (vph)	607	123	203	997	204	88
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	13.8	13.8	8.3	27.1	11.3	11.3
Effective Green, g (s)	13.8	13.8	8.3	27.1	11.3	11.3
Actuated g/C Ratio	0.29	0.29	0.17	0.56	0.23	0.23
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1450	451	304	2847	413	370
v/s Ratio Prot	c0.12		c0.11	0.20	c0.12	
v/s Ratio Perm		0.08				0.06
v/c Ratio	0.42	0.27	0.67	0.35	0.49	0.24
Uniform Delay, d1	14.0	13.4	18.8	5.8	16.1	15.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	5.5	0.1	0.9	0.3
Delay (s)	14.2	13.7	24.2	5.9	17.0	15.4
Level of Service	B	B	C	A	B	B
Approach Delay (s)	14.0			9.0	16.1	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	317	428	162	40	148	182	10	7	11	146	52	14
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	373	504	191	47	174	214	12	8	13	172	61	16

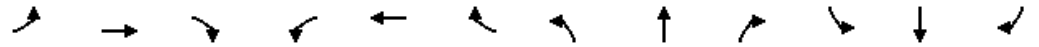
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	1067	435	33	249
Volume Left (vph)	373	47	12	172
Volume Right (vph)	191	214	13	16
Hadj (s)	0.00	-0.24	-0.13	0.13
Departure Headway (s)	5.7	5.7	7.5	6.9
Degree Utilization, x	1.69	0.69	0.07	0.48
Capacity (veh/h)	636	612	411	499
Control Delay (s)	331.0	20.5	11.1	16.0
Approach Delay (s)	331.0	20.5	11.1	16.0
Approach LOS	F	C	B	C

Intersection Summary			
Delay	205.4		
HCM Level of Service	F		
Intersection Capacity Utilization	99.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	307	487	202	244	396	422
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	323	513	213	257	417	444
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			836		1005	323
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			836		1005	323
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			73		0	38
cM capacity (veh/h)			798		196	718

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	323	513	213	257	417	444
Volume Left	0	0	213	0	417	0
Volume Right	0	513	0	0	0	444
cSH	1700	1700	798	1700	196	718
Volume to Capacity	0.19	0.30	0.27	0.15	2.12	0.62
Queue Length 95th (ft)	0	0	27	0	810	108
Control Delay (s)	0.0	0.0	11.1	0.0	561.7	17.8
Lane LOS			B		F	C
Approach Delay (s)	0.0		5.0		281.1	
Approach LOS					F	

Intersection Summary				
Average Delay	112.8			
Intersection Capacity Utilization	59.3%	ICU Level of Service		B
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1089	134	0	1145	409	499	0	1058	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Lane Util. Factor		0.91	1.00		0.91	1.00	0.95	0.95	0.88			
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1681	1681	2787			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1681	1681	2787			
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	1238	152	0	1301	465	567	0	1202	0	0	0
RTOR Reduction (vph)	0	0	80	0	0	328	0	0	728	0	0	0
Lane Group Flow (vph)	0	1238	72	0	1301	137	283	284	474	0	0	0
Turn Type			Perm			Perm	Split		Perm			
Protected Phases		2			6		8	8				
Permitted Phases			2			6			8			
Actuated Green, G (s)		24.1	24.1		25.7	25.7	21.6	21.6	21.6			
Effective Green, g (s)		24.1	24.1		25.7	25.7	21.6	21.6	21.6			
Actuated g/C Ratio		0.28	0.28		0.29	0.29	0.25	0.25	0.25			
Clearance Time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Vehicle Extension (s)		1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Lane Grp Cap (vph)		1404	437		1497	466	416	416	690			
v/s Ratio Prot		c0.24			c0.26		0.17	0.17				
v/s Ratio Perm			0.05			0.09			c0.17			
v/c Ratio		0.88	0.17		0.87	0.29	0.68	0.68	0.69			
Uniform Delay, d1		30.2	24.0		29.2	23.8	29.7	29.7	29.8			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		6.7	0.1		5.5	0.1	3.6	3.7	2.3			
Delay (s)		36.9	24.0		34.7	23.9	33.4	33.4	32.1			
Level of Service		D	C		C	C	C	C	C			
Approach Delay (s)		35.5			31.8			32.5			0.0	
Approach LOS		D			C			C			A	

Intersection Summary			
HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	15.9
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	✣	↱
Volume (vph)	0	678	485	0	1139	510	0	0	0	548	0	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)		5085	1583		5085	1583				1681	1602	1504
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)		5085	1583		5085	1583				1681	1602	1504
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	762	545	0	1280	573	0	0	0	616	0	230
RTOR Reduction (vph)	0	0	434	0	0	367	0	0	0	0	3	161
Lane Group Flow (vph)	0	762	111	0	1280	206	0	0	0	320	316	46
Turn Type			Perm			Perm				Split		Perm
Protected Phases		2			6					4	4	
Permitted Phases			2			6						4
Actuated Green, G (s)		14.4	14.4		25.5	25.5				15.7	15.7	15.7
Effective Green, g (s)		14.4	14.4		25.5	25.5				15.7	15.7	15.7
Actuated g/C Ratio		0.20	0.20		0.36	0.36				0.22	0.22	0.22
Clearance Time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Vehicle Extension (s)		1.0	1.0		1.0	1.0				1.0	1.0	1.0
Lane Grp Cap (vph)		1034	322		1831	570				373	355	334
v/s Ratio Prot		c0.15			c0.25					0.19	c0.20	
v/s Ratio Perm			0.07			0.13						0.03
v/c Ratio		0.74	0.34		0.70	0.36				0.86	0.89	0.14
Uniform Delay, d1		26.4	24.2		19.4	16.7				26.5	26.7	22.1
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		2.4	0.2		1.0	0.1				16.8	22.2	0.1
Delay (s)		28.8	24.4		20.3	16.8				43.3	48.9	22.2
Level of Service		C	C		C	B				D	D	C
Approach Delay (s)		27.0			19.2			0.0			40.2	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	15.2
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	41	240	73	30	36	352	1508	172	134	603	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1624		1681	1732	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1624		1681	1732	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	46	267	81	33	40	391	1676	191	149	670	23
RTOR Reduction (vph)	0	234	0	0	0	36	0	0	111	0	0	18
Lane Group Flow (vph)	30	79	0	56	58	4	391	1676	80	149	670	5
Turn Type	Split			Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	9.0	9.0		6.4	6.4	6.4	20.6	30.5	30.5	6.8	16.7	16.7
Effective Green, g (s)	9.0	9.0		6.4	6.4	6.4	20.6	30.5	30.5	6.8	16.7	16.7
Actuated g/C Ratio	0.12	0.12		0.09	0.09	0.09	0.28	0.42	0.42	0.09	0.23	0.23
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	219	201		148	152	139	502	2133	664	321	1168	364
v/s Ratio Prot	0.02	c0.05		0.03	c0.03		c0.22	c0.33		0.04	0.13	
v/s Ratio Perm						0.00			0.05			0.00
v/c Ratio	0.14	0.39		0.38	0.38	0.03	0.78	0.79	0.12	0.46	0.57	0.01
Uniform Delay, d1	28.4	29.3		31.3	31.3	30.3	24.0	18.3	12.9	31.2	24.8	21.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.3		1.6	1.6	0.1	7.5	2.0	0.1	1.1	0.7	0.0
Delay (s)	28.7	30.6		32.9	32.9	30.4	31.4	20.2	13.0	32.3	25.5	21.7
Level of Service	C	C		C	C	C	C	C	B	C	C	C
Approach Delay (s)		30.4			32.2			21.6			26.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	72.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1077	103	184	299	16	409	612	636	117	444	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	1197	114	204	332	18	454	680	707	130	493	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	1197	114	204	332	18	454	680	707	130	493	39
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	3.1	33.1	91.3	9.9	39.9	91.3	13.0	19.7	91.3	8.6	15.3	91.3
Effective Green, g (s)	3.1	33.1	91.3	9.9	39.9	91.3	13.0	19.7	91.3	8.6	15.3	91.3
Actuated g/C Ratio	0.03	0.36	1.00	0.11	0.44	1.00	0.14	0.22	1.00	0.09	0.17	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	60	1283	1583	372	1547	1583	489	764	1583	323	593	1583
v/s Ratio Prot	0.01	c0.34		0.06	0.09		c0.13	c0.19		0.04	0.14	
v/s Ratio Perm			0.07			0.01			c0.45			0.02
v/c Ratio	0.37	0.93	0.07	0.55	0.21	0.01	0.93	0.89	0.45	0.40	0.83	0.02
Uniform Delay, d1	43.1	28.0	0.0	38.6	16.0	0.0	38.7	34.7	0.0	38.9	36.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	12.3	0.1	1.7	0.1	0.0	23.9	12.5	0.9	0.8	9.7	0.0
Delay (s)	46.9	40.3	0.1	40.2	16.0	0.0	62.6	47.3	0.9	39.8	46.4	0.0
Level of Service	D	D	A	D	B	A	E	D	A	D	D	A
Approach Delay (s)		37.0			24.4			33.3			42.4	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	151	351	34	805	476	131	8	264	266	79	1087	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	168	390	38	894	529	146	9	293	296	88	1208	11
RTOR Reduction (vph)	0	0	32	0	0	93	0	0	205	0	0	5
Lane Group Flow (vph)	168	390	6	894	529	53	9	293	91	88	1208	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	19.9	19.9	36.3	46.2	46.2	1.1	39.1	39.1	10.3	48.3	48.3
Effective Green, g (s)	10.0	19.9	19.9	36.3	46.2	46.2	1.1	39.1	39.1	10.3	48.3	48.3
Actuated g/C Ratio	0.08	0.16	0.16	0.29	0.36	0.36	0.01	0.31	0.31	0.08	0.38	0.38
Clearance Time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	270	554	248	980	1286	575	15	1089	487	143	1345	602
v/s Ratio Prot	0.05	c0.11		c0.26	0.15		0.01	0.08		c0.05	c0.34	
v/s Ratio Perm			0.00			0.03			0.06			0.00
v/c Ratio	0.62	0.70	0.02	0.91	0.41	0.09	0.60	0.27	0.19	0.62	0.90	0.01
Uniform Delay, d1	56.7	50.8	45.4	43.9	30.3	26.6	62.8	33.2	32.3	56.5	37.1	24.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	4.0	0.0	12.2	0.2	0.1	36.3	0.1	0.2	5.4	8.2	0.0
Delay (s)	59.9	54.9	45.4	56.1	30.5	26.7	99.0	33.3	32.5	61.9	45.3	24.5
Level of Service	E	D	D	E	C	C	F	C	C	E	D	C
Approach Delay (s)		55.7			44.7			33.9			46.3	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM Average Control Delay	45.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	127.1	Sum of lost time (s)	21.5
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	1301	818	283	112	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	5085	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	5085	1583	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	1	1430	899	311	123	34
RTOR Reduction (vph)	0	0	0	177	0	27
Lane Group Flow (vph)	1	1430	899	134	123	7
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.9	24.2	18.3	18.3	8.4	8.4
Effective Green, g (s)	0.9	24.2	18.3	18.3	8.4	8.4
Actuated g/C Ratio	0.02	0.57	0.43	0.43	0.20	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	37	2889	2184	680	349	312
v/s Ratio Prot	0.00	c0.28	0.18		c0.07	
v/s Ratio Perm				0.08		0.00
v/c Ratio	0.03	0.49	0.41	0.20	0.35	0.02
Uniform Delay, d1	20.4	5.5	8.4	7.6	14.8	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.1	0.1	0.6	0.0
Delay (s)	20.7	5.7	8.5	7.7	15.4	13.8
Level of Service	C	A	A	A	B	B
Approach Delay (s)		5.7	8.3		15.0	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	42.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰	↑↑↑	↰	↱
Volume (vph)	1147	265	279	759	340	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1274	294	310	843	378	62
RTOR Reduction (vph)	0	213	0	0	0	20
Lane Group Flow (vph)	1274	81	310	843	378	42
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	16.0	16.0	11.9	32.9	15.5	15.5
Effective Green, g (s)	16.0	16.0	11.9	32.9	15.5	15.5
Actuated g/C Ratio	0.27	0.27	0.20	0.56	0.27	0.27
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1393	434	361	2865	470	420
v/s Ratio Prot	c0.25		c0.18	0.17	c0.21	
v/s Ratio Perm		0.05				0.03
v/c Ratio	0.91	0.19	0.86	0.29	0.80	0.10
Uniform Delay, d1	20.5	16.2	22.4	6.7	20.0	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.5	0.2	18.0	0.1	9.6	0.1
Delay (s)	30.0	16.4	40.4	6.7	29.7	16.3
Level of Service	C	B	D	A	C	B
Approach Delay (s)	27.5			15.8	27.8	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	22	158	4	7	360	215	10	22	15	295	2	415
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	26	186	5	8	424	253	12	26	18	347	2	488

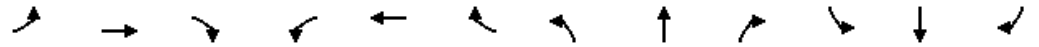
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	216	685	55	838
Volume Left (vph)	26	8	12	347
Volume Right (vph)	5	253	18	488
Hadj (s)	0.04	-0.19	-0.11	-0.23
Departure Headway (s)	7.3	6.3	8.0	6.3
Degree Utilization, x	0.44	1.21	0.12	1.47
Capacity (veh/h)	483	564	427	565
Control Delay (s)	16.0	130.7	12.1	236.8
Approach Delay (s)	16.0	130.7	12.1	236.8
Approach LOS	C	F	B	F

Intersection Summary			
Delay	162.7		
HCM Level of Service	F		
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	307	311	559	271	519	233
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	323	327	588	285	546	245
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			651		1785	323
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			651		1785	323
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			37		0	66
cM capacity (veh/h)			936		33	718

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	323	327	588	285	546	245
Volume Left	0	0	588	0	546	0
Volume Right	0	327	0	0	0	245
cSH	1700	1700	936	1700	33	718
Volume to Capacity	0.19	0.19	0.63	0.17	16.42	0.34
Queue Length 95th (ft)	0	0	115	0	Err	38
Control Delay (s)	0.0	0.0	15.1	0.0	Err	12.6
Lane LOS			C		F	B
Approach Delay (s)	0.0		10.2		6904.8	
Approach LOS					F	

Intersection Summary			
Average Delay	2364.0		
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

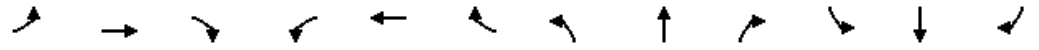


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰	↕	↱↱			
Volume (vph)	0	1524	543	0	864	394	591	0	60	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Lane Util. Factor		0.91	1.00		0.91	1.00	0.95	0.95	0.88			
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1681	1681	2787			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1681	1681	2787			
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	1732	617	0	982	448	672	0	68	0	0	0
RTOR Reduction (vph)	0	0	299	0	0	246	0	0	2	0	0	0
Lane Group Flow (vph)	0	1732	318	0	982	202	336	336	66	0	0	0
Turn Type			Perm			Perm	Split		Perm			
Protected Phases		2			6		8	8				
Permitted Phases			2			6			8			
Actuated Green, G (s)		21.9	21.9		21.9	21.9	16.0	16.0	16.0			
Effective Green, g (s)		21.9	21.9		21.9	21.9	16.0	16.0	16.0			
Actuated g/C Ratio		0.45	0.45		0.45	0.45	0.33	0.33	0.33			
Clearance Time (s)		5.3	5.3		5.3	5.3	5.3	5.3	5.3			
Vehicle Extension (s)		1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Lane Grp Cap (vph)		2296	715		2296	715	555	555	919			
v/s Ratio Prot		c0.34			0.19		c0.20	0.20				
v/s Ratio Perm			0.20			0.13			0.02			
v/c Ratio		0.75	0.44		0.43	0.28	0.61	0.61	0.07			
Uniform Delay, d1		11.1	9.1		9.0	8.4	13.6	13.6	11.2			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		1.3	0.2		0.0	0.1	1.3	1.3	0.0			
Delay (s)		12.3	9.3		9.1	8.4	14.9	14.9	11.2			
Level of Service		B	A		A	A	B	B	B			
Approach Delay (s)		11.5			8.9			14.5			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	10.6
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1506	866	84	1367	4	0	0	0	561	0	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)		5085	1583		5071	1583				1681	1601	1504
Flt Permitted		1.00	1.00		0.72	1.00				0.95	0.96	1.00
Satd. Flow (perm)		5085	1583		3678	1583				1681	1601	1504
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1692	973	94	1536	4	0	0	0	630	0	267
RTOR Reduction (vph)	0	0	444	0	0	2	0	0	0	0	5	20
Lane Group Flow (vph)	0	1692	529	0	1630	2	0	0	0	328	324	220
Turn Type			Perm	Perm		Perm				Split		Perm
Protected Phases		2			6					4	4	
Permitted Phases			2	6		6						4
Actuated Green, G (s)		28.4	28.4		28.4	28.4				13.9	13.9	13.9
Effective Green, g (s)		28.4	28.4		28.4	28.4				13.9	13.9	13.9
Actuated g/C Ratio		0.54	0.54		0.54	0.54				0.27	0.27	0.27
Clearance Time (s)		5.3	5.3		5.3	5.3				4.6	4.6	4.6
Vehicle Extension (s)		1.0	1.0		1.0	1.0				1.0	1.0	1.0
Lane Grp Cap (vph)		2767	861		2001	861				448	426	400
v/s Ratio Prot		0.33								0.20	c0.20	
v/s Ratio Perm			0.33		c0.44	0.00						0.15
v/c Ratio		0.61	0.61		0.81	0.00				0.73	0.76	0.55
Uniform Delay, d1		8.1	8.2		9.7	5.4				17.5	17.6	16.5
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.3	0.9		2.5	0.0				5.3	7.0	0.9
Delay (s)		8.4	9.1		12.3	5.4				22.7	24.7	17.4
Level of Service		A	A		B	A				C	C	B
Approach Delay (s)		8.7			12.3			0.0			22.0	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	52.2	Sum of lost time (s)	9.9
Intersection Capacity Utilization	112.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	44	293	228	49	125	145	1256	86	142	1510	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1620		1681	1714	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1620		1681	1714	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	21	49	326	253	54	139	161	1396	96	158	1678	39
RTOR Reduction (vph)	0	188	0	0	0	120	0	0	56	0	0	19
Lane Group Flow (vph)	21	187	0	152	155	19	161	1396	40	158	1678	20
Turn Type	Split			Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	13.9	13.9		13.1	13.1	13.1	13.2	40.3	40.3	9.5	36.6	36.6
Effective Green, g (s)	13.9	13.9		13.1	13.1	13.1	13.2	40.3	40.3	9.5	36.6	36.6
Actuated g/C Ratio	0.14	0.14		0.14	0.14	0.14	0.14	0.42	0.42	0.10	0.38	0.38
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	254	233		227	232	214	241	2117	659	337	1923	599
v/s Ratio Prot	0.01	c0.12		0.09	c0.09		c0.09	c0.27		0.05	c0.33	
v/s Ratio Perm						0.01			0.03			0.01
v/c Ratio	0.08	0.80		0.67	0.67	0.09	0.67	0.66	0.06	0.47	0.87	0.03
Uniform Delay, d1	35.9	40.1		39.8	39.8	36.6	39.7	22.7	16.9	41.3	27.9	19.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	18.0		7.3	7.1	0.2	6.8	0.8	0.0	1.0	4.7	0.0
Delay (s)	36.1	58.1		47.1	46.9	36.8	46.6	23.5	17.0	42.3	32.6	19.0
Level of Service	D	E		D	D	D	D	C	B	D	C	B
Approach Delay (s)		56.9			43.8			25.4			33.2	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	25.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	439	278	692	870	58	239	813	387	25	744	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	82	488	309	769	967	64	266	903	430	28	827	54
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	82	488	309	769	967	64	266	903	430	28	827	54
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.4	17.4	99.7	24.5	36.5	99.7	9.9	35.5	99.7	2.3	27.9	99.7
Effective Green, g (s)	5.4	17.4	99.7	24.5	36.5	99.7	9.9	35.5	99.7	2.3	27.9	99.7
Actuated g/C Ratio	0.05	0.17	1.00	0.25	0.37	1.00	0.10	0.36	1.00	0.02	0.28	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	96	618	1583	844	1296	1583	341	1260	1583	79	990	1583
v/s Ratio Prot	0.05	0.14		c0.22	c0.27		c0.08	0.26		0.01	c0.23	
v/s Ratio Perm			0.20			0.04			0.27			0.03
v/c Ratio	0.85	0.79	0.20	0.91	0.75	0.04	0.78	0.72	0.27	0.35	0.84	0.03
Uniform Delay, d1	46.8	39.4	0.0	36.5	27.6	0.0	43.8	27.8	0.0	48.0	33.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	48.1	6.7	0.3	13.9	2.4	0.0	11.0	2.0	0.4	2.7	6.2	0.0
Delay (s)	94.9	46.1	0.3	50.4	29.9	0.0	54.8	29.7	0.4	50.7	39.9	0.0
Level of Service	F	D	A	D	C	A	D	C	A	D	D	A
Approach Delay (s)		34.5			37.6			26.0			37.9	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	99.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	315	553	17	305	215	168	29	1130	439	113	489	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	350	614	19	339	239	187	32	1256	488	126	543	61
RTOR Reduction (vph)	0	0	15	0	0	146	0	0	179	0	0	34
Lane Group Flow (vph)	350	614	4	339	239	41	32	1256	309	126	543	27
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.0	25.0	25.0	12.0	25.0	25.0	4.4	44.1	44.1	10.4	50.1	50.1
Effective Green, g (s)	12.0	25.0	25.0	12.0	25.0	25.0	4.4	44.1	44.1	10.4	50.1	50.1
Actuated g/C Ratio	0.11	0.22	0.22	0.11	0.22	0.22	0.04	0.39	0.39	0.09	0.44	0.44
Clearance Time (s)	5.0	5.4	5.4	5.0	5.4	5.4	5.0	6.1	6.1	5.0	6.1	6.1
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	365	783	350	365	783	350	69	1381	618	163	1569	702
v/s Ratio Prot	c0.10	c0.17		0.10	0.07		0.02	c0.35		c0.07	0.15	
v/s Ratio Perm			0.00			0.03			0.20			0.02
v/c Ratio	0.96	0.78	0.01	0.93	0.31	0.12	0.46	0.91	0.50	0.77	0.35	0.04
Uniform Delay, d1	50.3	41.5	34.4	50.1	36.7	35.2	53.1	32.6	26.1	50.1	20.7	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.7	5.2	0.0	28.9	0.2	0.2	1.8	9.0	0.6	18.5	0.1	0.0
Delay (s)	86.0	46.6	34.4	79.0	37.0	35.3	54.9	41.6	26.7	68.6	20.8	17.8
Level of Service	F	D	C	E	D	D	D	D	C	E	C	B
Approach Delay (s)		60.4			55.2			37.7			28.8	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM Average Control Delay	44.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	113.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

City of Roseville
Cumulative Plus Project AM Peak Hour
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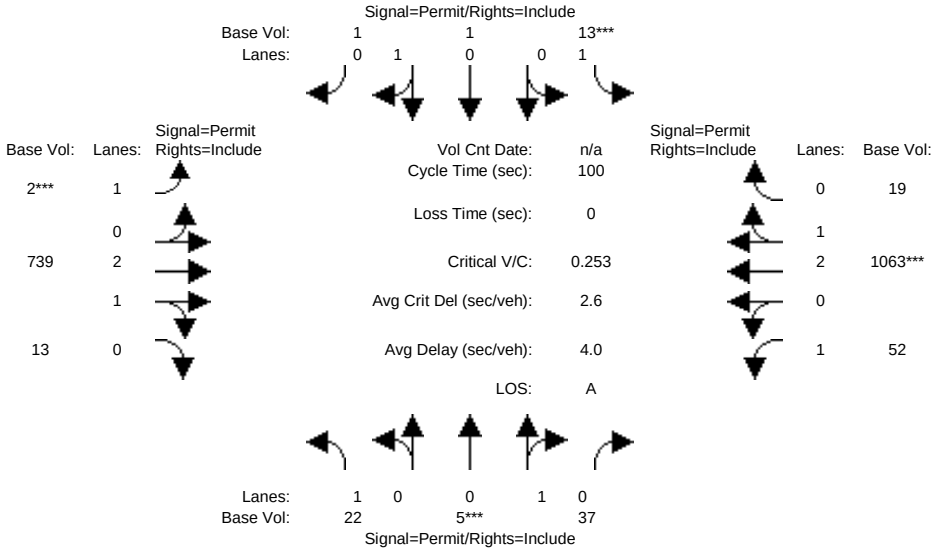
Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project AM Peak Hour

Intersection #301: Locust Rd and Baseline Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	22	5	37	13	1	1	2	739	13	52	1063	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	5	37	13	1	1	2	739	13	52	1063	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	5	37	13	1	1	2	739	13	52	1063	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	5	37	13	1	1	2	739	13	52	1063	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	5	37	13	1	1	2	739	13	52	1063	19
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.12	0.88	1.00	0.50	0.50	1.00	2.95	0.05	1.00	2.95	0.05
Final Sat.:	1650	196	1454	1650	825	825	1650	4864	86	1650	4863	87
Capacity Analysis Module:												
Vol/Sat:	0.01	0.03	0.03	0.01	0.00	0.00	0.00	0.15	0.15	0.03	0.22	0.22
Crit Volume:		42			13			2			361	
Crit Moves:		****			****			****			****	

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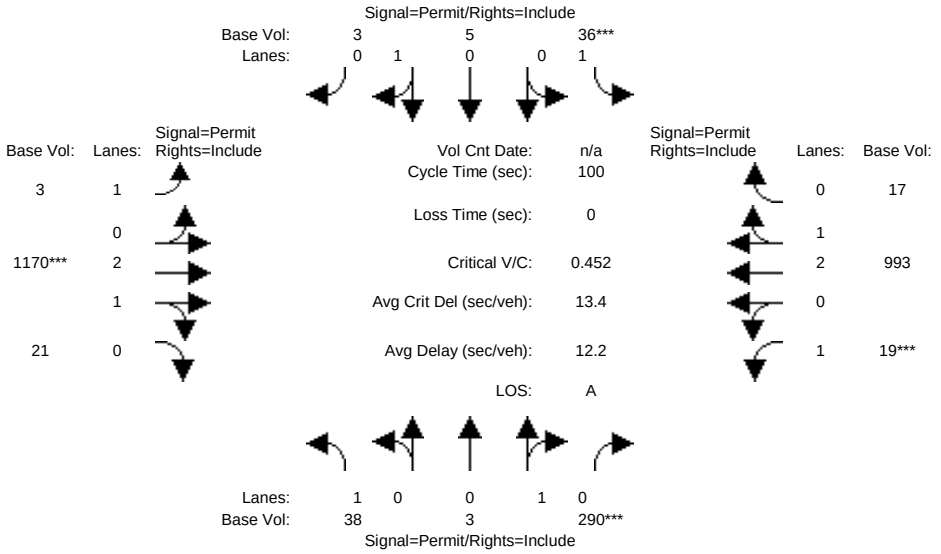
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project PM Peak Hour

Intersection #301: Locust Rd and Baseline Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	38	3	290	36	5	3	3	1170	21	19	993	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	3	290	36	5	3	3	1170	21	19	993	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	38	3	290	36	5	3	3	1170	21	19	993	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	3	290	36	5	3	3	1170	21	19	993	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	3	290	36	5	3	3	1170	21	19	993	17
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.01	0.99	1.00	0.62	0.38	1.00	2.95	0.05	1.00	2.95	0.05
Final Sat.:	1650	17	1633	1650	1031	619	1650	4863	87	1650	4867	83
Capacity Analysis Module:												
Vol/Sat:	0.02	0.18	0.18	0.02	0.00	0.00	0.00	0.24	0.24	0.01	0.20	0.20
Crit Volume:			293	36				397		19		
Crit Moves:			****	****				****		****		

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Circular 212 Planning (Base Volume Alternative)
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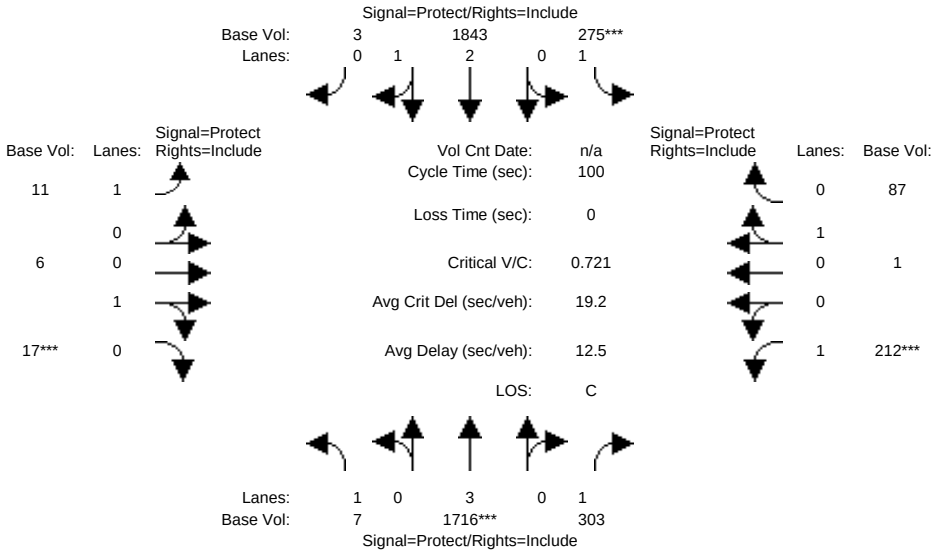
Intersection #305: Watt Ave/PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	7	1716	303	275	1843	3	11	6	17	212	1	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	1716	303	275	1843	3	11	6	17	212	1	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	1716	303	275	1843	3	11	6	17	212	1	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	1716	303	275	1843	3	11	6	17	212	1	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	1716	303	275	1843	3	11	6	17	212	1	87
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.99	0.01	1.00	0.26	0.74	1.00	0.01	0.99
Final Sat.:	1500	4500	1500	1500	4493	7	1500	391	1109	1500	17	1483
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.20	0.18	0.41	0.41	0.01	0.02	0.02	0.14	0.06	0.06
Crit Volume:		572		275					23	212		
Crit Moves:		****		****					****	****		

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Circular 212 Planning (Base Volume Alternative)
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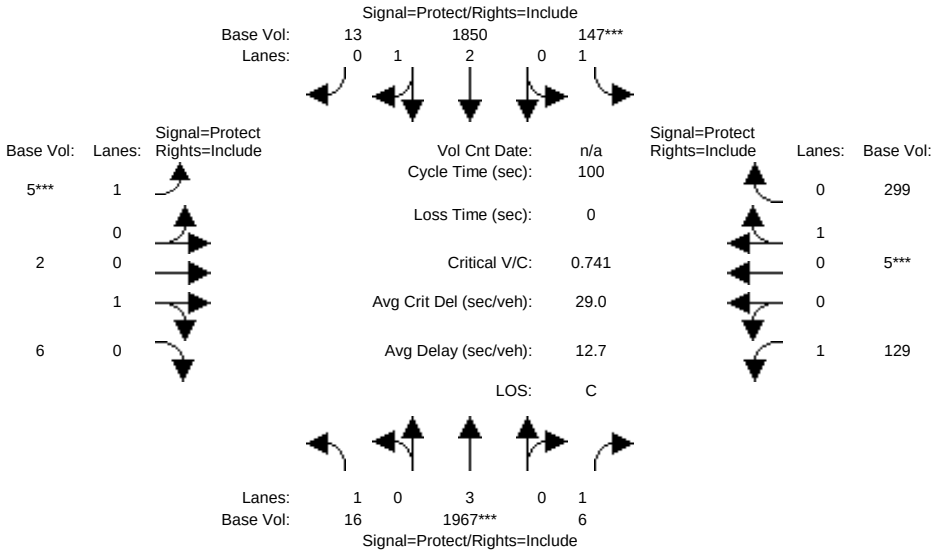
Intersection #305: Watt Ave/PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	16	1967	6	147	1850	13	5	2	6	129	5	299
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	1967	6	147	1850	13	5	2	6	129	5	299
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	1967	6	147	1850	13	5	2	6	129	5	299
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	1967	6	147	1850	13	5	2	6	129	5	299
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	1967	6	147	1850	13	5	2	6	129	5	299
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.98	0.02	1.00	0.25	0.75	1.00	0.02	0.98
Final Sat.:	1500	4500	1500	1500	4469	31	1500	375	1125	1500	25	1475
Capacity Analysis Module:												
Vol/Sat:	0.01	0.44	0.00	0.10	0.41	0.41	0.00	0.01	0.01	0.09	0.20	0.20
Crit Volume:		656			147			5			304	
Crit Moves:		****			****			****			****	

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Circular 212 Planning (Base Volume Alternative)
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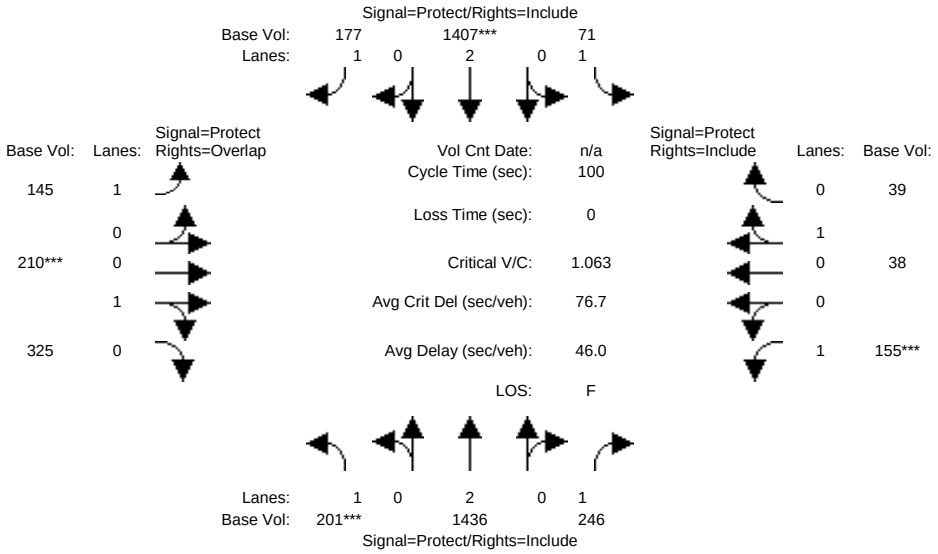
Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	201	1436	246	71	1407	177	145	210	325	155	38	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	1436	246	71	1407	177	145	210	325	155	38	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	201	1436	246	71	1407	177	145	210	325	155	38	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	1436	246	71	1407	177	145	210	325	155	38	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	1436	246	71	1407	177	145	210	325	155	38	39
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.39	0.61	1.00	0.49	0.51
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	589	911	1500	740	760
Capacity Analysis Module:												
Vol/Sat:	0.13	0.48	0.16	0.05	0.47	0.12	0.10	0.36	0.36	0.10	0.05	0.05
Crit Volume:	201				704			535		155		
Crit Moves:	****				****			****		****		

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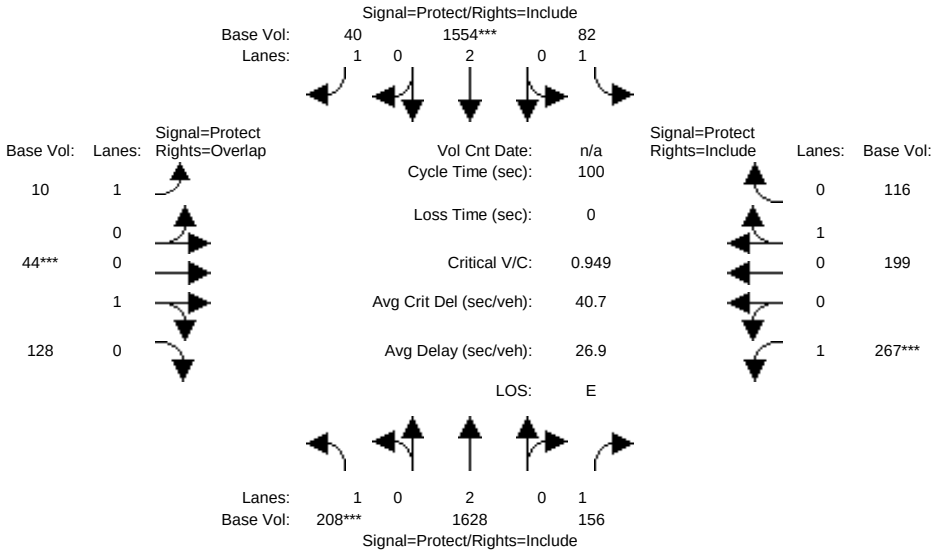
Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	208	1628	156	82	1554	40	10	44	128	267	199	116
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	1628	156	82	1554	40	10	44	128	267	199	116
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	1628	156	82	1554	40	10	44	128	267	199	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	1628	156	82	1554	40	10	44	128	267	199	116
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	208	1628	156	82	1554	40	10	44	128	267	199	116
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.26	0.74	1.00	0.63	0.37
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	384	1116	1500	948	552
Capacity Analysis Module:												
Vol/Sat:	0.14	0.54	0.10	0.05	0.52	0.03	0.01	0.11	0.11	0.18	0.21	0.21
Crit Volume:	208				777			172		267		
Crit Moves:	****				****			****		****		

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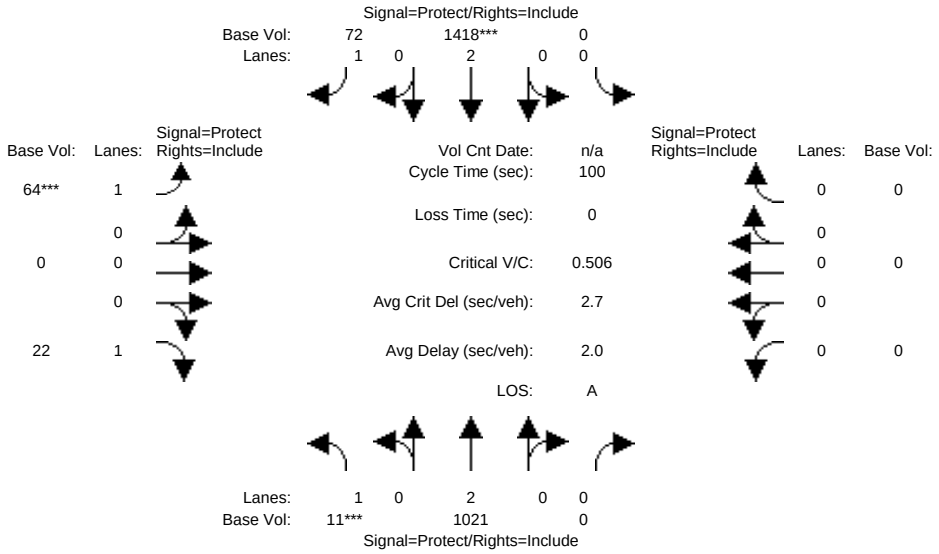
Intersection #308: Fiddyment Rd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	11	1021	0	0	1418	72	64	0	22	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	1021	0	0	1418	72	64	0	22	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	1021	0	0	1418	72	64	0	22	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	1021	0	0	1418	72	64	0	22	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	1021	0	0	1418	72	64	0	22	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	3100	0	0	3100	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.33	0.00	0.00	0.46	0.05	0.04	0.00	0.01	0.00	0.00	0.00
Crit Volume:	11				709		64				0	
Crit Moves:	****				****		****					

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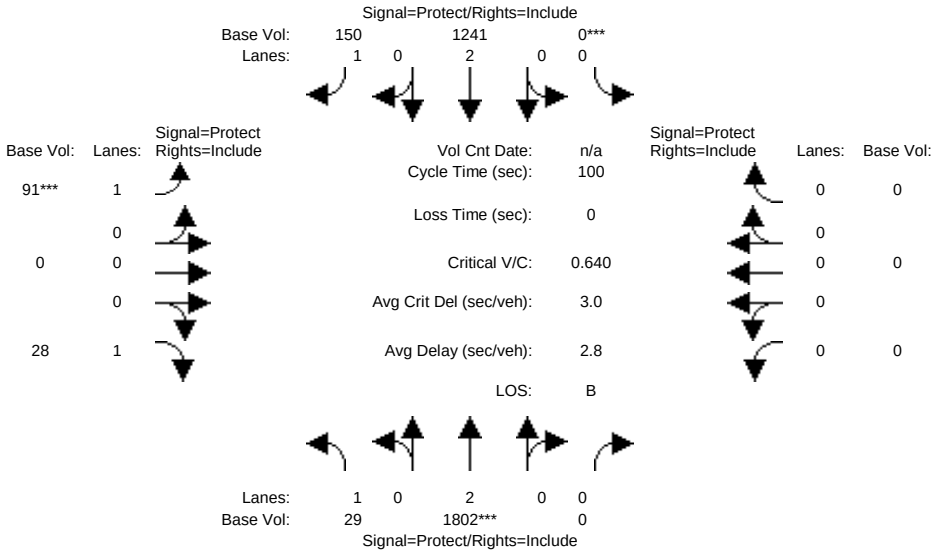
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project PM Peak Hour

Intersection #308: Fiddyment Rd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	29	1802	0	0	1241	150	91	0	28	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	1802	0	0	1241	150	91	0	28	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	29	1802	0	0	1241	150	91	0	28	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	29	1802	0	0	1241	150	91	0	28	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	29	1802	0	0	1241	150	91	0	28	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	3100	0	0	3100	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.58	0.00	0.00	0.40	0.10	0.06	0.00	0.02	0.00	0.00	0.00
Crit Volume:		901			0			91			0	
Crit Moves:		****			****			****				

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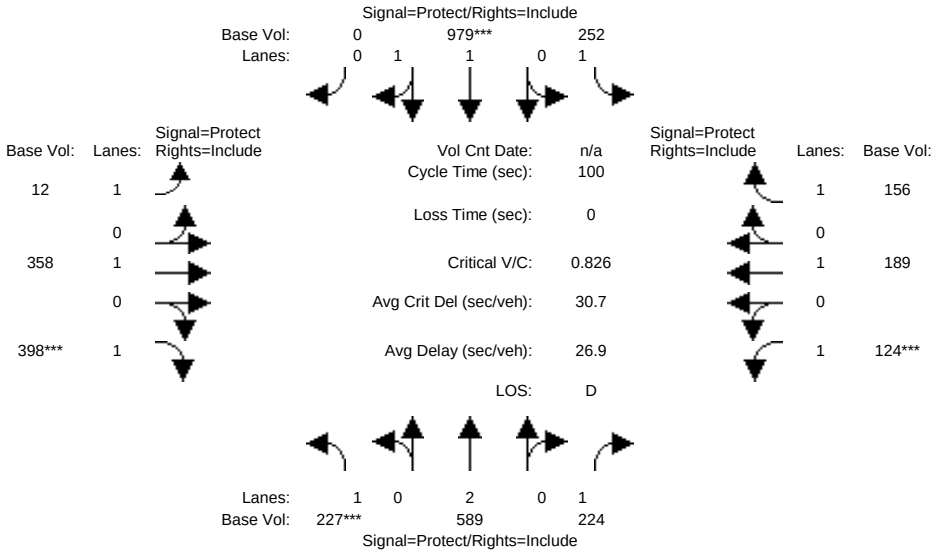
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project AM Peak Hour

Intersection #309: Fiddyment Rd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	227	589	224	252	979	0	12	358	398	124	189	156
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	227	589	224	252	979	0	12	358	398	124	189	156
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	227	589	224	252	979	0	12	358	398	124	189	156
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	227	589	224	252	979	0	12	358	398	124	189	156
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	227	589	224	252	979	0	12	358	398	124	189	156
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1500	3000	1500	1500	3000	0	1500	1500	1500	1500	1500	1500
Capacity Analysis Module:												
Vol/Sat:	0.15	0.20	0.15	0.17	0.33	0.00	0.01	0.24	0.27	0.08	0.13	0.10
Crit Volume:	227				489				398	124		
Crit Moves:	****				****				****	****		

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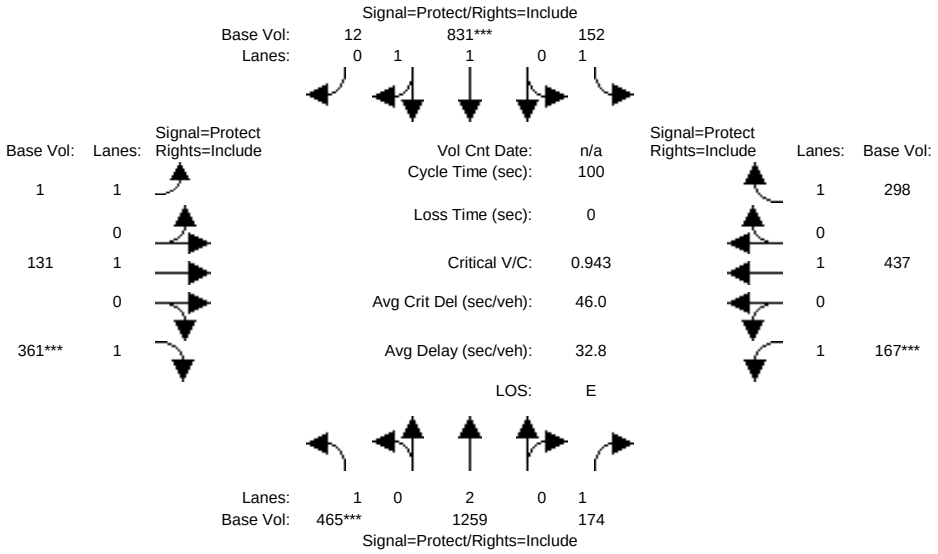
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project PM Peak Hour

Intersection #309: Fiddyment Rd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	465	1259	174	152	831	12	1	131	361	167	437	298
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	465	1259	174	152	831	12	1	131	361	167	437	298
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	465	1259	174	152	831	12	1	131	361	167	437	298
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	465	1259	174	152	831	12	1	131	361	167	437	298
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	465	1259	174	152	831	12	1	131	361	167	437	298
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.97	0.03	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1500	3000	1500	1500	2957	43	1500	1500	1500	1500	1500	1500
Capacity Analysis Module:												
Vol/Sat:	0.31	0.42	0.12	0.10	0.28	0.28	0.00	0.09	0.24	0.11	0.29	0.20
Crit Volume:	465				422				361	167		
Crit Moves:	****				****				****	****		

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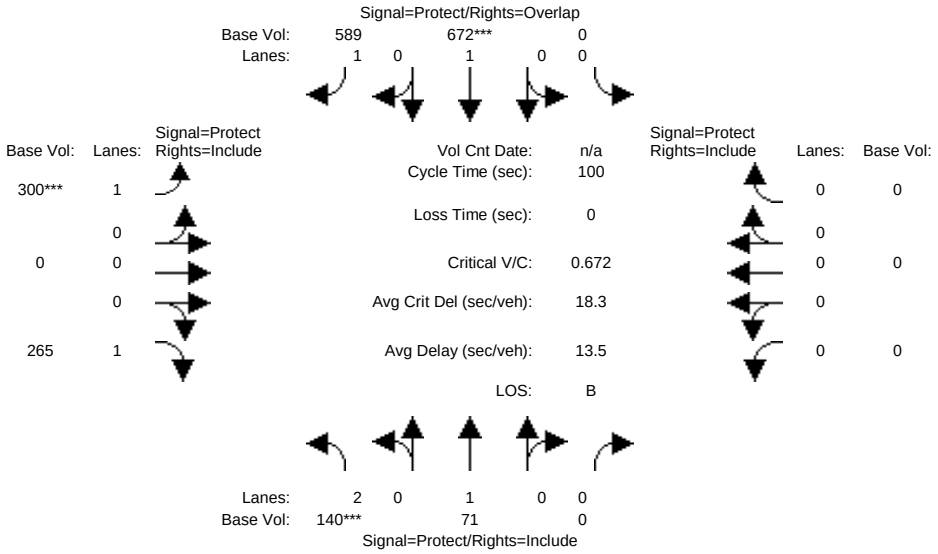
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project AM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	140	71	0	0	672	589	300	0	265	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	140	71	0	0	672	589	300	0	265	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	140	71	0	0	672	589	300	0	265	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	71	0	0	672	589	300	0	265	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	140	71	0	0	672	589	300	0	265	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.00	0.00	0.43	0.38	0.19	0.00	0.17	0.00	0.00	0.00
Crit Volume:	70				672		300				0	
Crit Moves:	****				****		****					

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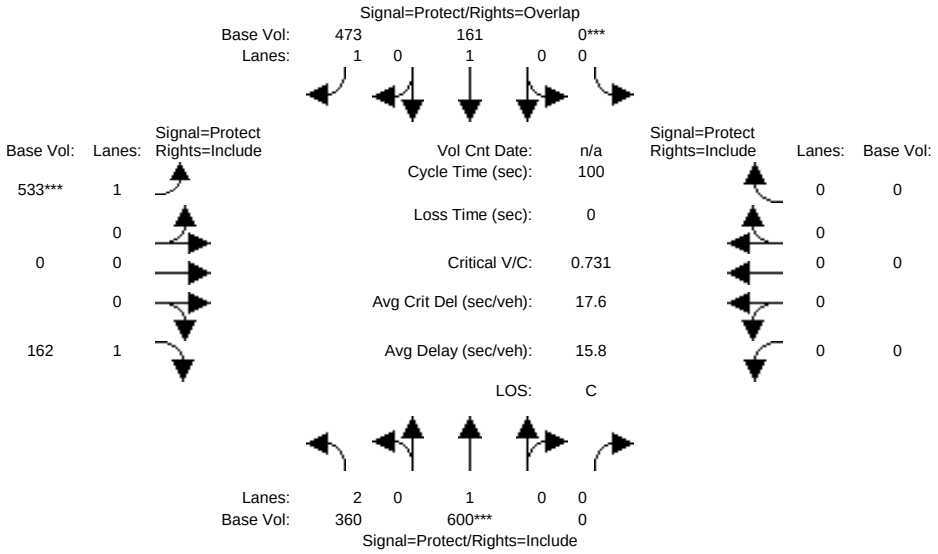
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project PM Peak Hour

Intersection #310: Athens and Industrial



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	360	600	0	0	161	473	533	0	162	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	360	600	0	0	161	473	533	0	162	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	360	600	0	0	161	473	533	0	162	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	360	600	0	0	161	473	533	0	162	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	360	600	0	0	161	473	533	0	162	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3100	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.39	0.00	0.00	0.10	0.31	0.34	0.00	0.10	0.00	0.00	0.00
Crit Volume:		600			0			533			0	
Crit Moves:		****			****			****				

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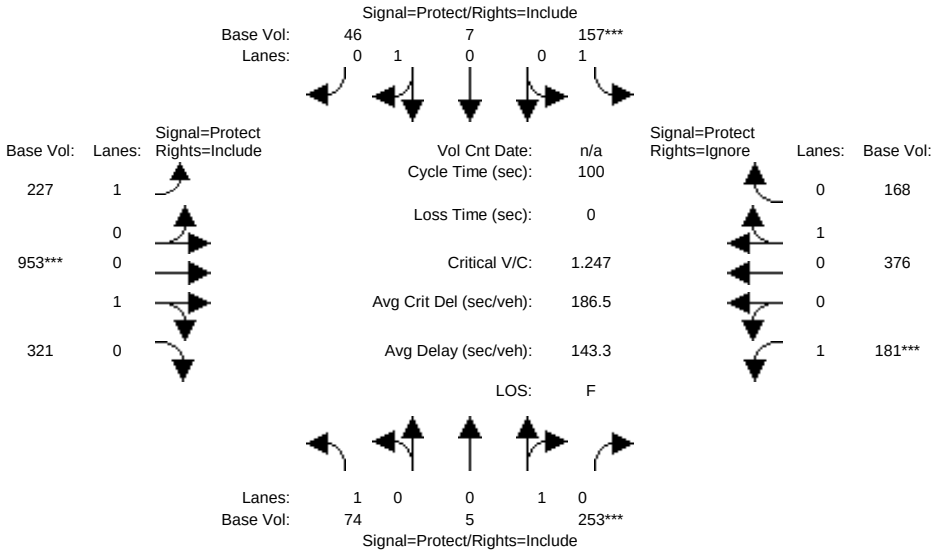
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project AM Peak Hour

Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	74	5	253	157	7	46	227	953	321	181	376	168
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	74	5	253	157	7	46	227	953	321	181	376	168
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	74	5	253	157	7	46	227	953	321	181	376	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	5	253	157	7	46	227	953	321	181	376	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	74	5	253	157	7	46	227	953	321	181	376	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	1.00	0.13	0.87	1.00	0.75	0.25	1.00	1.00	0.00
Final Sat.:	1500	29	1471	1500	198	1302	1500	1122	378	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.17	0.17	0.10	0.04	0.04	0.15	0.85	0.85	0.12	0.25	0.00
Crit Volume:			258	157				1274		181		
Crit Moves:			****	****				****		****		

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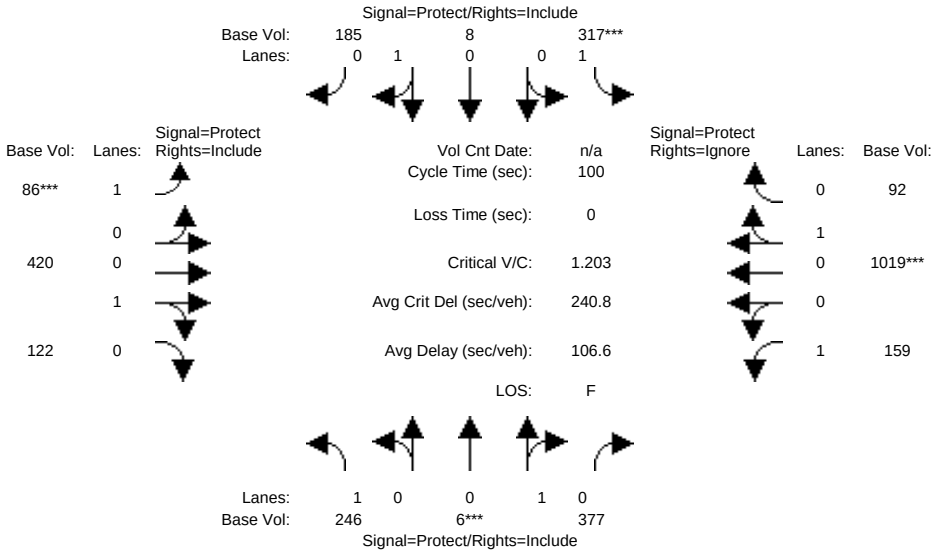
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project PM Peak Hour

Intersection #312: Sunset Blvd & Cincinnati Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	246	6	377	317	8	185	86	420	122	159	1019	92
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	246	6	377	317	8	185	86	420	122	159	1019	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	246	6	377	317	8	185	86	420	122	159	1019	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	246	6	377	317	8	185	86	420	122	159	1019	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	246	6	377	317	8	185	86	420	122	159	1019	0
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	1.00	0.04	0.96	1.00	0.77	0.23	1.00	1.00	0.00
Final Sat.:	1500	23	1477	1500	62	1438	1500	1162	338	1500	1500	0
Capacity Analysis Module:												
Vol/Sat:	0.16	0.26	0.26	0.21	0.13	0.13	0.06	0.36	0.36	0.11	0.68	0.00
Crit Volume:		383			317			86			1019	
Crit Moves:		****			****			****			****	

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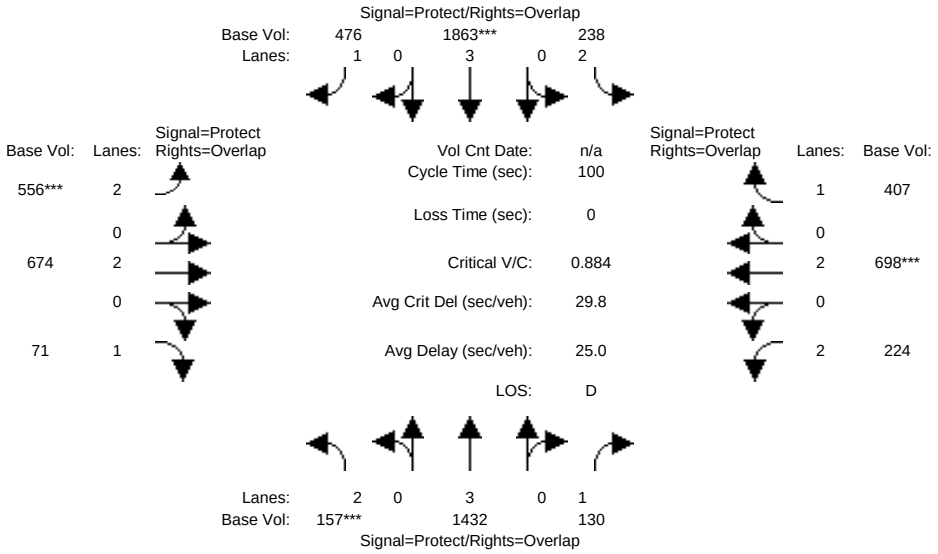
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project AM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	157	1432	130	238	1863	476	556	674	71	224	698	407
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	1432	130	238	1863	476	556	674	71	224	698	407
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	157	1432	130	238	1863	476	556	674	71	224	698	407
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	1432	130	238	1863	476	556	674	71	224	698	407
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	157	1432	130	238	1863	476	556	674	71	224	698	407
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.05	0.32	0.09	0.08	0.41	0.32	0.19	0.22	0.05	0.07	0.23	0.27
Crit Volume:	79				621		278				349	
Crit Moves:	****				****		****				****	

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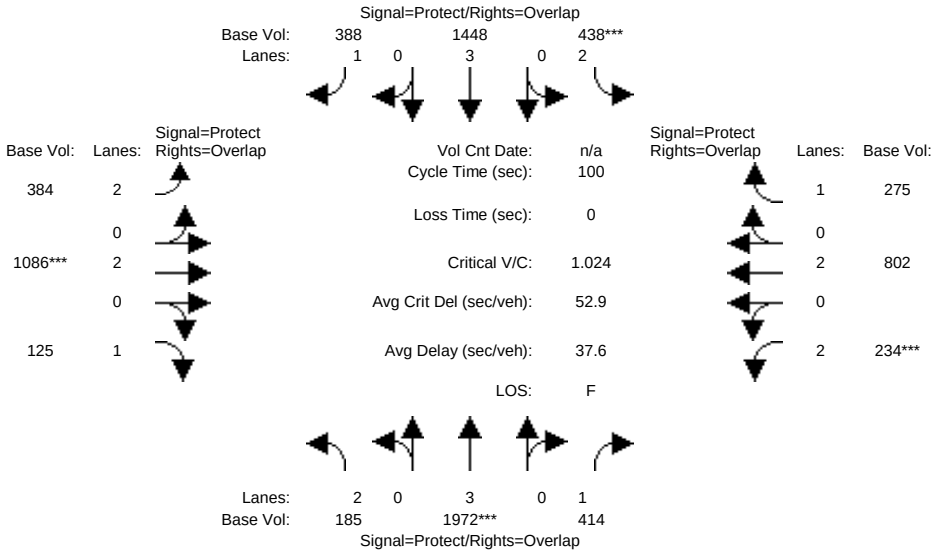
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project PM Peak Hour

Intersection #315: Watt and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	185	1972	414	438	1448	388	384	1086	125	234	802	275
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	1972	414	438	1448	388	384	1086	125	234	802	275
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	185	1972	414	438	1448	388	384	1086	125	234	802	275
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	1972	414	438	1448	388	384	1086	125	234	802	275
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	1972	414	438	1448	388	384	1086	125	234	802	275
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	4500	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.44	0.28	0.15	0.32	0.26	0.13	0.36	0.08	0.08	0.27	0.18
Crit Volume:		657			219			543			117	
Crit Moves:		****			****			****			****	

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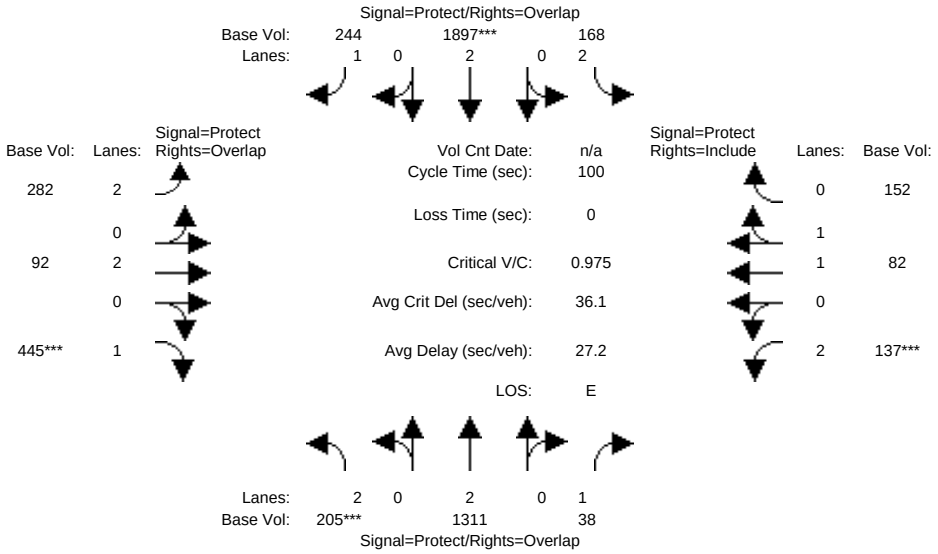
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project AM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	205	1311	38	168	1897	244	282	92	445	137	82	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	1311	38	168	1897	244	282	92	445	137	82	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	205	1311	38	168	1897	244	282	92	445	137	82	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	205	1311	38	168	1897	244	282	92	445	137	82	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	205	1311	38	168	1897	244	282	92	445	137	82	152
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	1500	1500
Capacity Analysis Module:												
Vol/Sat:	0.07	0.44	0.03	0.06	0.63	0.16	0.09	0.03	0.30	0.05	0.05	0.10
Crit Volume:	0				949				445	69		
Crit Moves:	****				****				****	****		

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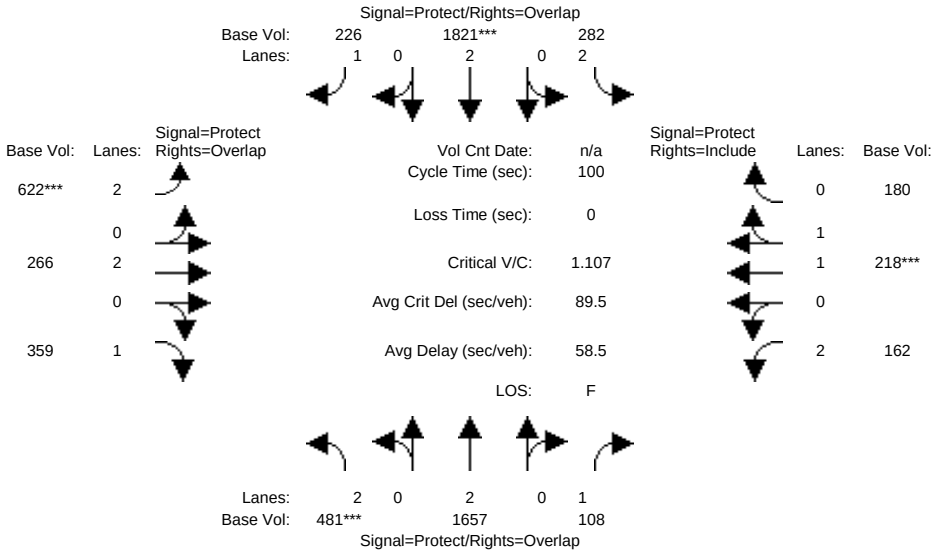
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project PM Peak Hour

Intersection #316: Walegra and Elverta



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	481	1657	108	282	1821	226	622	266	359	162	218	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	481	1657	108	282	1821	226	622	266	359	162	218	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	481	1657	108	282	1821	226	622	266	359	162	218	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	481	1657	108	282	1821	226	622	266	359	162	218	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	481	1657	108	282	1821	226	622	266	359	162	218	180
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.10	0.90
Final Sat.:	3000	3000	1500	3000	3000	1500	3000	3000	1500	3000	1643	1357
Capacity Analysis Module:												
Vol/Sat:	0.16	0.55	0.07	0.09	0.61	0.15	0.21	0.09	0.24	0.05	0.13	0.13
Crit Volume:	240				911		311				199	
Crit Moves:	****				****		****				****	

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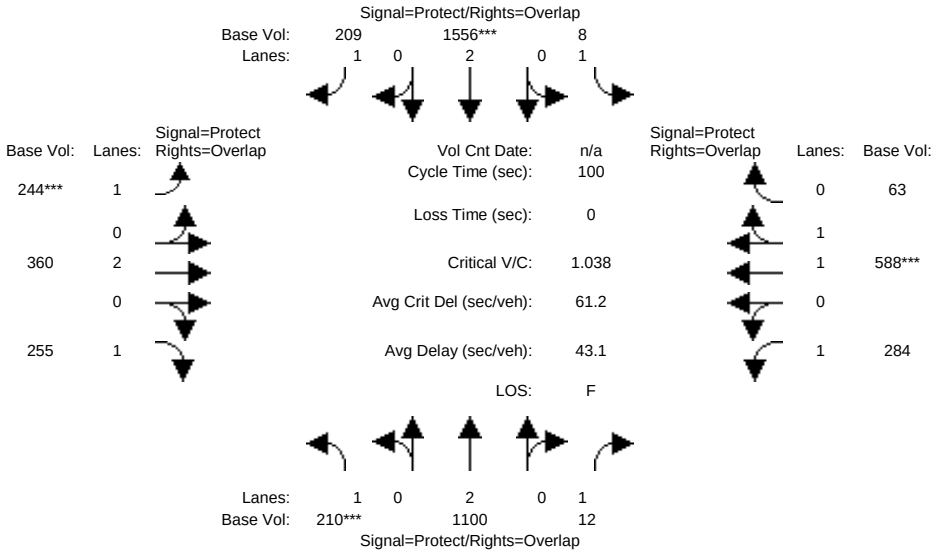
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project AM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	210	1100	12	8	1556	209	244	360	255	284	588	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	210	1100	12	8	1556	209	244	360	255	284	588	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	210	1100	12	8	1556	209	244	360	255	284	588	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	1100	12	8	1556	209	244	360	255	284	588	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	210	1100	12	8	1556	209	244	360	255	284	588	63
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.81	0.19
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	2710	290
Capacity Analysis Module:												
Vol/Sat:	0.14	0.37	0.01	0.01	0.52	0.14	0.16	0.12	0.17	0.19	0.22	0.22
Crit Volume:	210				778		244				325	
Crit Moves:	****				****		****				****	

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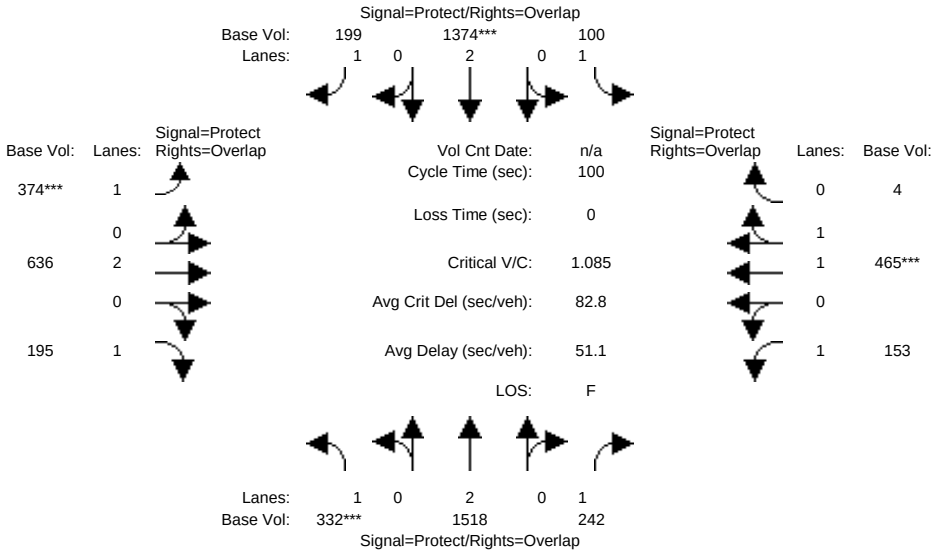
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project PM Peak Hour

Intersection #317: Watt and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	332	1518	242	100	1374	199	374	636	195	153	465	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	332	1518	242	100	1374	199	374	636	195	153	465	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	332	1518	242	100	1374	199	374	636	195	153	465	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	332	1518	242	100	1374	199	374	636	195	153	465	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	332	1518	242	100	1374	199	374	636	195	153	465	4
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	1500	3000	1500	1500	3000	1500	1500	3000	1500	1500	2974	26
Capacity Analysis Module:												
Vol/Sat:	0.22	0.51	0.16	0.07	0.46	0.13	0.25	0.21	0.13	0.10	0.16	0.16
Crit Volume:	332				687		374				234	
Crit Moves:	****				****		****				****	

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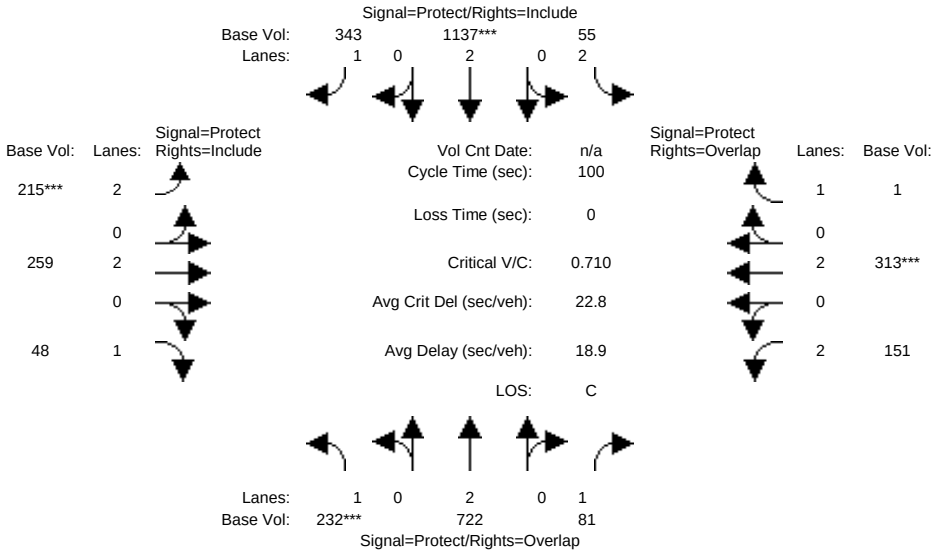
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project AM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	232	722	81	55	1137	343	215	259	48	151	313	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	232	722	81	55	1137	343	215	259	48	151	313	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	232	722	81	55	1137	343	215	259	48	151	313	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	232	722	81	55	1137	343	215	259	48	151	313	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	232	722	81	55	1137	343	215	259	48	151	313	1
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.15	0.24	0.05	0.02	0.38	0.23	0.07	0.09	0.03	0.05	0.10	0.00
Crit Volume:	232				568		108				157	
Crit Moves:	****				****		****				****	

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City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

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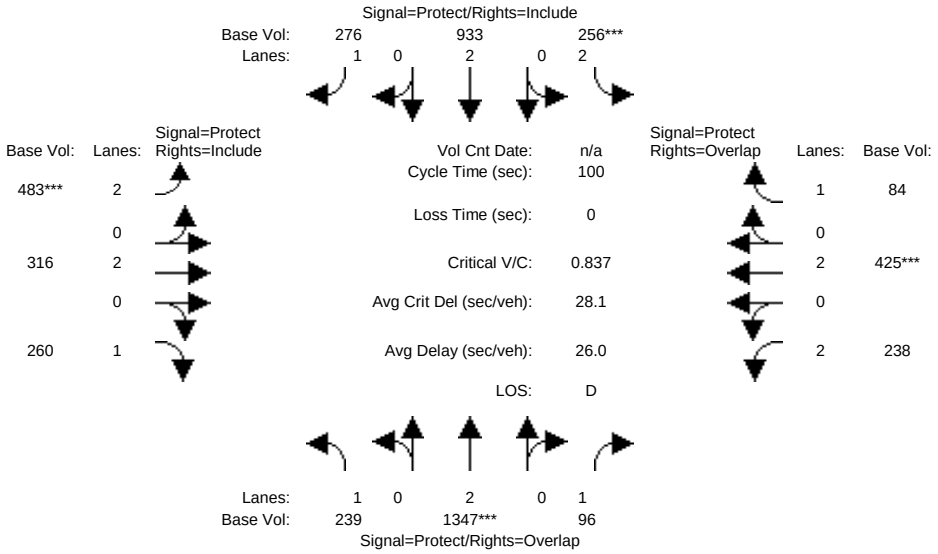
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project PM Peak Hour

Intersection #318: Walegra and Antelope



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	239	1347	96	256	933	276	483	316	260	238	425	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	1347	96	256	933	276	483	316	260	238	425	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	239	1347	96	256	933	276	483	316	260	238	425	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	1347	96	256	933	276	483	316	260	238	425	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	239	1347	96	256	933	276	483	316	260	238	425	84
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1500	3000	1500	3000	3000	1500	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.16	0.45	0.06	0.09	0.31	0.18	0.16	0.11	0.17	0.08	0.14	0.06
Crit Volume:		674			128			242			213	
Crit Moves:		****			****			****			****	

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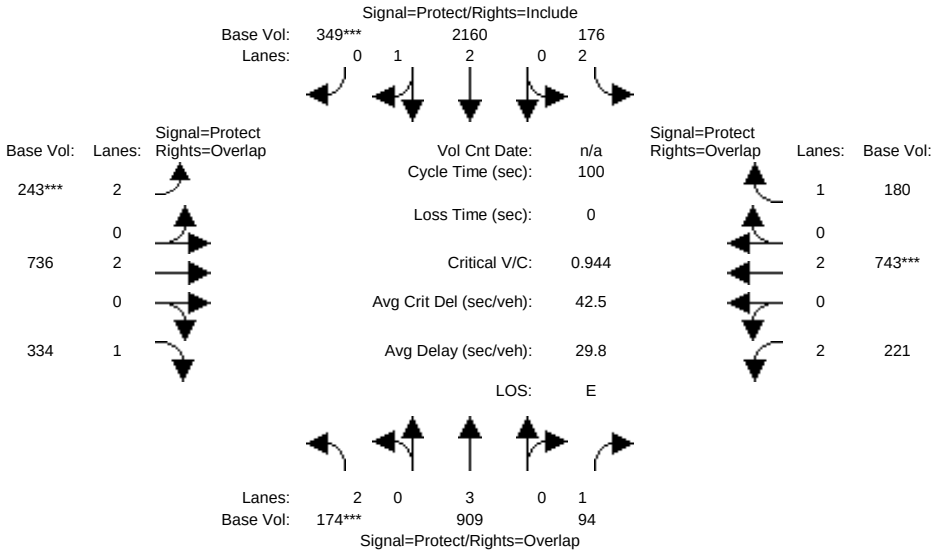
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project AM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	174	909	94	176	2160	349	243	736	334	221	743	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	174	909	94	176	2160	349	243	736	334	221	743	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	174	909	94	176	2160	349	243	736	334	221	743	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	174	909	94	176	2160	349	243	736	334	221	743	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	174	909	94	176	2160	349	243	736	334	221	743	180
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.58	0.42	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3874	626	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.06	0.06	0.56	0.56	0.08	0.25	0.22	0.07	0.25	0.12
Crit Volume:	87					836	122				372	
Crit Moves:	****					****	****				****	

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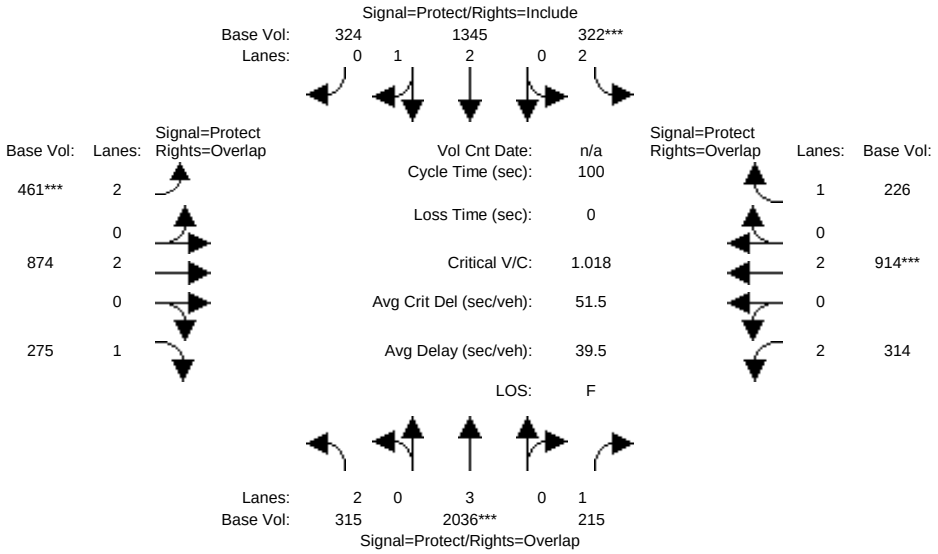
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project PM Peak Hour

Intersection #319: Watt and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	315	2036	215	322	1345	324	461	874	275	314	914	226
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	315	2036	215	322	1345	324	461	874	275	314	914	226
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	315	2036	215	322	1345	324	461	874	275	314	914	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	315	2036	215	322	1345	324	461	874	275	314	914	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	315	2036	215	322	1345	324	461	874	275	314	914	226
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.42	0.58	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	4500	1500	3000	3626	874	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.11	0.45	0.14	0.11	0.37	0.37	0.15	0.29	0.18	0.10	0.30	0.15
Crit Volume:		679			161			231			457	
Crit Moves:		****			****			****			****	

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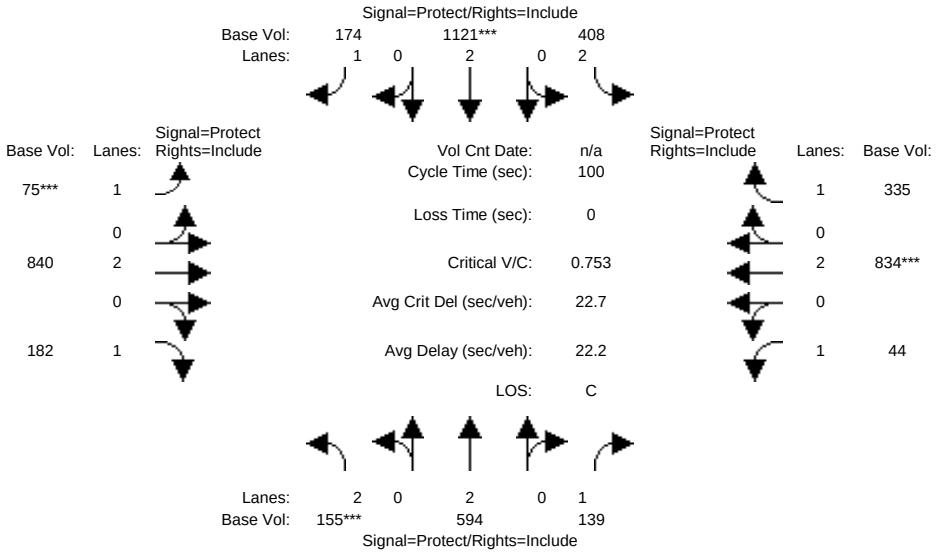
City of Roseville
Cumulative Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project AM Peak Hour

Intersection #320: Walerga and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	155	594	139	408	1121	174	75	840	182	44	834	335
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	155	594	139	408	1121	174	75	840	182	44	834	335
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	155	594	139	408	1121	174	75	840	182	44	834	335
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	155	594	139	408	1121	174	75	840	182	44	834	335
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	155	594	139	408	1121	174	75	840	182	44	834	335
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.05	0.20	0.09	0.14	0.37	0.12	0.05	0.28	0.12	0.03	0.28	0.22
Crit Volume:	78				561		75				417	
Crit Moves:	****				****		****				****	

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City of Roseville
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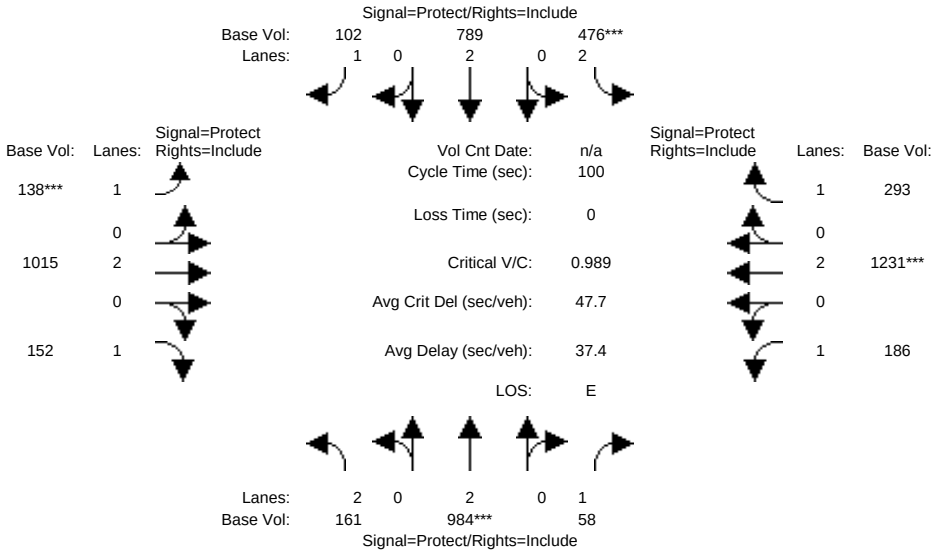
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
Cumulative Plus Project PM Peak Hour

Intersection #320: Walerga and Elkhorn



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	161	984	58	476	789	102	138	1015	152	186	1231	293
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	161	984	58	476	789	102	138	1015	152	186	1231	293
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	161	984	58	476	789	102	138	1015	152	186	1231	293
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	161	984	58	476	789	102	138	1015	152	186	1231	293
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	161	984	58	476	789	102	138	1015	152	186	1231	293
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.05	0.33	0.04	0.16	0.26	0.07	0.09	0.34	0.10	0.12	0.41	0.20
Crit Volume:		492			238			138			616	
Crit Moves:		****			****			****			****	

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Amoruso Ranch Specific Plan

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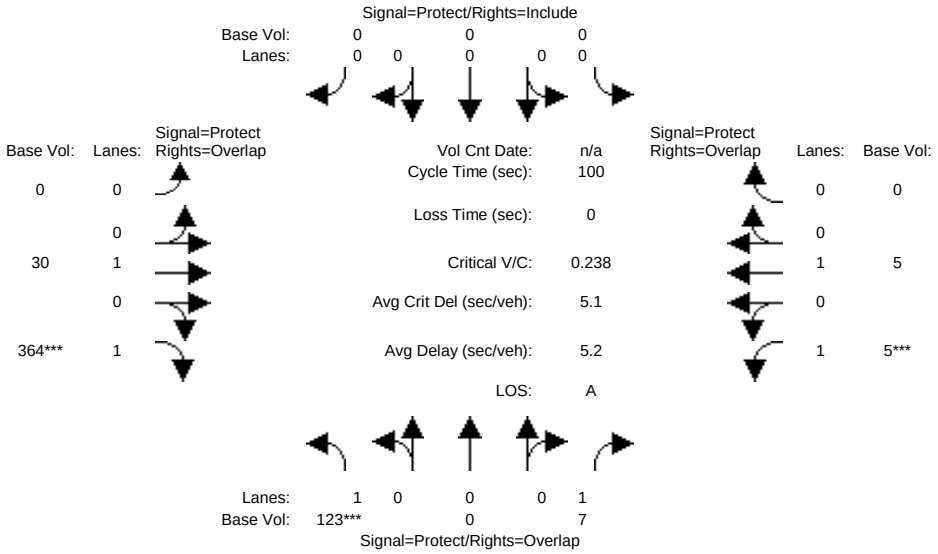
Intersection #321: Westbrook Blvd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	123	0	7	0	0	0	0	30	364	5	5	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	123	0	7	0	0	0	0	30	364	5	5	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	0	7	0	0	0	0	30	364	5	5	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	0	7	0	0	0	0	30	364	5	5	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	0	7	0	0	0	0	30	364	5	5	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1550	0	1550	0	0	0	0	1550	1550	1550	1550	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.23	0.00	0.00	0.00
Crit Volume:	0			0					364	5		
Crit Moves:	****								****	****		

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Amoruso Ranch Specific Plan

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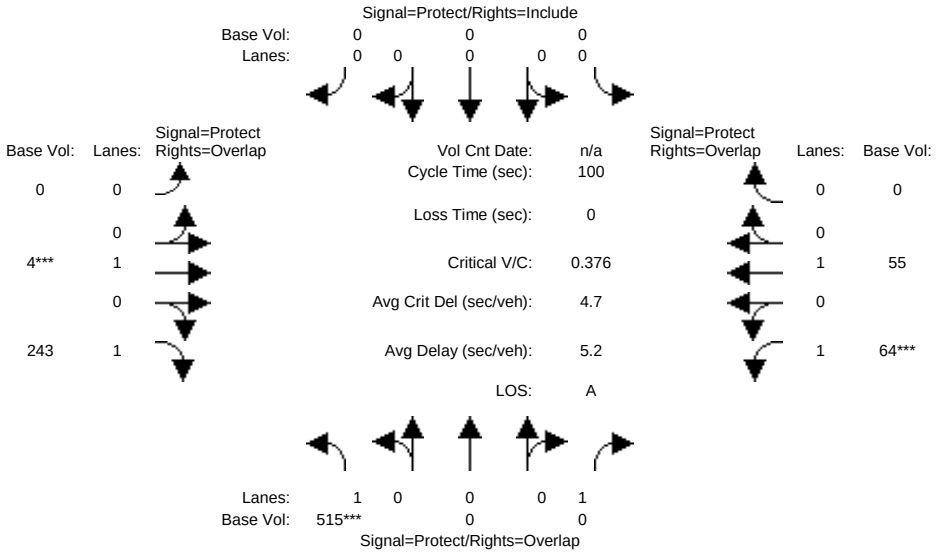
Cumulative Plus Project PM Peak Hour

Intersection #321: Westbrook Blvd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	515	0	0	0	0	0	0	4	243	64	55	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	515	0	0	0	0	0	0	4	243	64	55	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	515	0	0	0	0	0	0	4	243	64	55	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	515	0	0	0	0	0	0	4	243	64	55	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	515	0	0	0	0	0	0	4	243	64	55	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1550	0	1550	0	0	0	0	1550	1550	1550	1550	0
Capacity Analysis Module:												
Vol/Sat:	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.04	0.04	0.00
Crit Volume:	515				0			4			64	
Crit Moves:	****							****			****	

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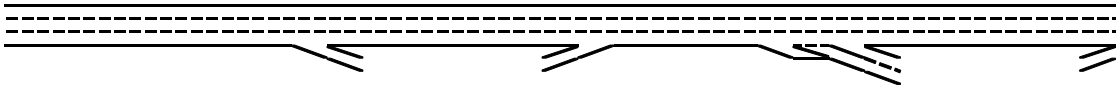
FREEWAY FACILITIES

Location	1	2	3	4	5	6	



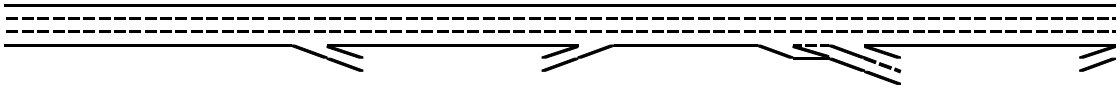
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Define Freeway Segment							
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	
Length (ft)	1,780	1,500	2,960	1,500	1,500	1,250	
Accel Length				270			
Decel Length		120			1,500		
Mainline Volume	6,330	6,330	5,590	5,590	6,110	5,110	
On Ramp Volume				520			
Off Ramp Volume		740			1,000		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (GP)							
GP Volume (vph)	6,330	6,330	5,590	6,110	6,110	5,110	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	3	3	3	3	3	3	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	6,813	6,813	6,017	6,576	6,576	5,500	
GP Flow (pcphpl)	2,271	2,271	2,006	2,192	2,192	1,833	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.97	0.97	0.85	0.93	0.93	0.78	
Speed (mph)	54.2	54.2	59.8	56.1	56.1	62.3	
Density (pcphpl)	41.9	41.9	33.5	39.1	39.1	29.4	
LOS	E	E	D	E	E	D	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		6,813		6,023	6,576		
GP_{IN} Cap (pcph)		7,050		7,050	7,050		
GP_{IN} v/c ratio		0.97		0.85	0.93		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		6,050		6,576	5,508		
GP_{OUT} Cap (pcph)		7,050		7,050	7,050		
GP_{OUT} v/c ratio		0.86		0.93	0.78		

Location	1	2	3	4	5	6	



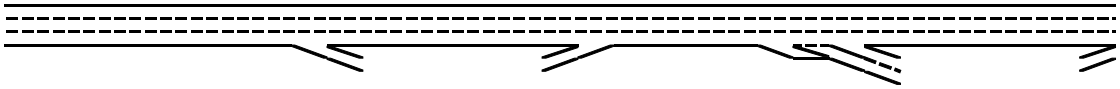
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)				520			
PHF				0.95			
Total Lanes				1			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				2.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.990			
f_P				1.00			
On Flow (pcph)				553			
On Flow (pcphpl)				553			
Calculate On Ramp Roadway Operations							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.26			

Location	1	2	3	4	5	6	



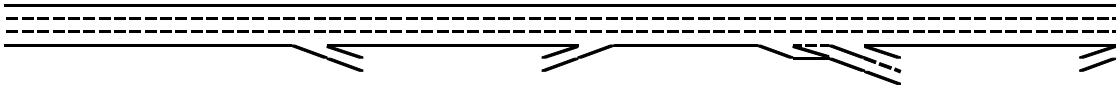
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Calculate Off Ramp Flow Rate							
Off Volume (vph)		740			1,000		
PHF		0.98			0.95		
Total Lanes		1			2		
Terrain		Level			Level		
Grade %		0.0%			0.0%		
Grade Length (mi)		0.00			0.00		
Truck & Bus %		2.0%			3.0%		
RV %		0.0%			0.0%		
E_T		1.5			1.5		
E_R		1.2			1.2		
f_{HV}		0.990			0.985		
f_P		1.00			1.00		
Off Flow (pcph)		763			1,068		
Off Flow (pcphpl)		763			534		
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right			Right		
Off Ramp Speed		45			45		
Off Ramp Cap (pcph)		2,100			4,200		
Off Ramp v/c ratio		0.36			0.25		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps							
Up Type		No		Off			
Up Distance				2,960			
Up Flow (pcph)				763			
Down Type		On		No			
Down Distance		2,960					
Down Flow (pcph)		553					
Calculate Merge Influence Area Operations							
Effective v_P (pcph)				6,023			
Up Ramp L_{EQ}				1,479			
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)				0.585			
P_{FM} (Eqn 13-4)				0.678			
P_{FM} (Eqn 13-5)							
P_{FM}				0.585			
v_{12} (pcph)				3,524			
v_3 (pcph)				2,499			
v_{34} (pcph)							
v_{12a} (pcph)				3,524			
v_{R12a} (pcph)				4,077			
Merge Speed Index				0.53			
Merge Area Speed				52.9			
Outer Lanes Volume				2,499			
Outer Lanes Speed				57.3			
Segment Speed				54.5			
Merge v/c ratio				0.89			
Merge Density				35.3			
Merge LOS				E			

Location	1	2	3	4	5	6	



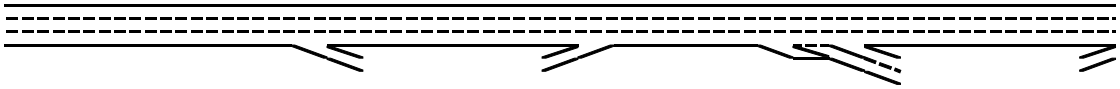
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)		6,813			6,576		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}		850					
P_{FD} (Eqn 13-9)		0.555			0.546		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		0.555			0.450		
v_{12} (pcph)		4,118			3,547		
v_3 (pcph)		2,695			3,029		
v_{34} (pcph)							
v_{12a} (pcph)		4,118			3,876		
Diverge Speed Index		0.37			0.39		
Diverge Area Speed		56.6			55.9		
Outer Lanes Volume		2,695			2,700		
Outer Lanes Speed		64.7			64.7		
Segment Speed		59.5			59.2		
Diverge v/c ratio		0.94			0.88		
Diverge Density		38.6			24.1		
Diverge LOS		E			C		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to Mainline Flow Rate for Weave Segments							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	1	2	3	4	5	6	



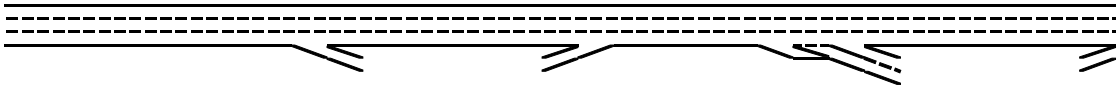
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Calculate Mainline to Off Ramp Flow Rate for Weave Segments							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Location	1	2	3	4	5	6	



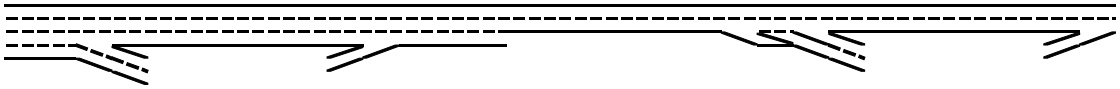
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Blvd Off-Ramp	Stanford Ranch Blvd Off to On-Ramp	Stanford Ranch Blvd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	Ple
Calculate Weave Segment Operations							
Weave Type							
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.97	0.94	0.85	0.89	0.88	0.78	
Segment Density	41.9	38.6	33.5	35.3	24.1	29.4	
Segment LOS	E	E	D	E	C	D	
Over Capacity							

Location	7	8	9	10	11	12	



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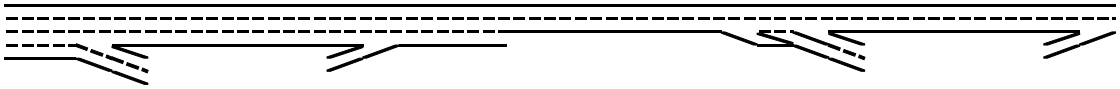
<> Express Lane (HOV)

No Trucks

Name	asant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Define Freeway Segment							
Type	Weave	Basic	Merge	Basic	Diverge	Basic	
Length (ft)	3,370	1,920	1,500	3,300	1,500	1,800	
Accel Length			375				
Decel Length					1,500		
Mainline Volume	5,110	3,770	3,770	4,250	4,250	2,680	
On Ramp Volume	420		480				
Off Ramp Volume	1,760				1,570		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (							
GP Volume (vph)	5,530	3,770	4,250	4,250	4,250	2,680	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	4	3	3	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	5,952	4,058	4,574	4,574	4,574	2,885	
GP Flow (pcphpl)	1,488	1,353	1,525	2,287	2,287	1,442	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.63	0.58	0.65	0.97	0.97	0.61	
Speed (mph)	64.9	65.0	64.8	53.8	53.8	65.0	
Density (pcphpl)	22.9	20.8	23.5	42.5	42.5	22.2	
LOS	C	C	C	E	E	C	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	5,506		4,064		4,574		
GP_{IN} Cap (pcph)	7,050		7,050		4,700		
GP_{IN} v/c ratio	0.78		0.58		0.97		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	4,072		4,574		2,905		
GP_{OUT} Cap (pcph)	7,050		7,050		4,700		
GP_{OUT} v/c ratio	0.58		0.65		0.62		

Location	7	8	9	10	11	12	



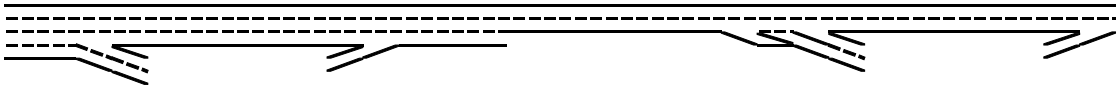
Key

<> Express Lane (HOV)

No Trucks

Name	asant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	420		480				
PHF	0.95		0.95				
Total Lanes	1		1				
Terrain	Level		Level				
Grade %	0.0%		0.0%				
Grade Length (mi)	0.00		0.00				
Truck & Bus %	2.0%		2.0%				
RV %	0.0%		0.0%				
E_T	1.5		1.5				
E_R	1.2		1.2				
f_{HV}	0.990		0.990				
f_P	1.00		1.00				
On Flow (pcph)	447		510				
On Flow (pcphpl)	447		510				
Calculate On Ramp Roadway Operations							
On Ramp Type	Right		Right				
On Ramp Speed (mph)	25		25				
On Ramp Cap (pcph)	1,900		1,900				
On Ramp v/c ratio	0.24		0.27				

Location	7	8	9	10	11	12	



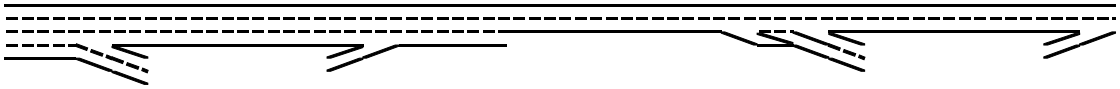
Key

<> Express Lane (HOV)

No Trucks

Name	asant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Off Ramp Flow Rate							
Off Volume (vph)	1,760				1,570		
PHF	0.95				0.95		
Total Lanes	2				2		
Terrain	Level				Level		
Grade %	0.0%				0.0%		
Grade Length (mi)	0.00				0.00		
Truck & Bus %	3.0%				2.0%		
RV %	0.0%				0.0%		
E_T	1.5				1.5		
E_R	1.2				1.2		
f_{HV}	0.985				0.990		
f_P	1.00				1.00		
Off Flow (pcph)	1,880				1,669		
Off Flow (pcphpl)	940				835		
Calculate Off Ramp Roadway Operations							
Off Ramp Type	Right				Right		
Off Ramp Speed	45				45		
Off Ramp Cap (pcph)	4,200				4,200		
Off Ramp v/c ratio	0.45				0.40		
Determine Adjacent Ramp for Three-Lane Main							
Up Type			No				
Up Distance							
Up Flow (pcph)							
Down Type			No				
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)			4,064				
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)			0.588				
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}			0.588				
v_{12} (pcph)			2,390				
v_3 (pcph)			1,674				
v_{34} (pcph)							
v_{12a} (pcph)			2,390				
v_{R12a} (pcph)			2,900				
Merge Speed Index			0.37				
Merge Area Speed			56.4				
Outer Lanes Volume			1,674				
Outer Lanes Speed			60.8				
Segment Speed			57.9				
Merge v/c ratio			0.63				
Merge Density			25.5				
Merge LOS			C				

Location	7	8	9	10	11	12	



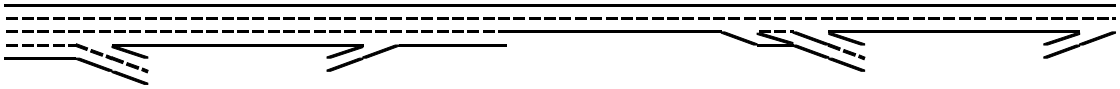
Key

<> Express Lane (HOV)

No Trucks

Name	asant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)					4,574		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)					0.569		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}					1.000		
v_{12} (pcph)					4,574		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)					4,574		
Diverge Speed Index					0.45		
Diverge Area Speed					54.7		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed					54.7		
Diverge v/c ratio					1.04		
Diverge Density					30.1		
Diverge LOS					F		
Calculate On Ramp to Off Ramp Flow Rate for							
On to Off Volume (vph)	50						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to Off Flow (pcph)	53						
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)	370						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to ML Flow (pcph)	395						

Location	7	8	9	10	11	12	



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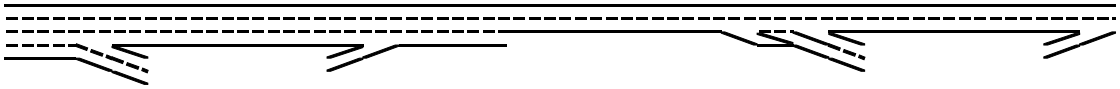
<> Express Lane (HOV)

No Trucks

Name	asant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)	1,710						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
ML to Off Flow (pcph)	1,827						
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)	3,400						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
GP to GP Flow (pcph)	3,633						

Location	7	8	9	10	11	12	



Key

<> Express Lane (HOV)

No Trucks

Name	asant Grove to Blue Oaks	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Weave Segment Operations							
Weave Type	One-sided						
Weave Length	2,370						
Segment Lanes	4						
Weave Lanes	2						
Weave Flow (pcph)	2,222						
Non-Weave Flow	3,686						
Segment Flow	5,908						
Max Weave Length	6,415						
Length Check	OK						
Ideal Weave Capacity	2,041						
f_{HV}	0.985						
f_P	0.999						
Capacity Condition 1	8,034						
Capacity Condition 2	6,280						
Weave v/c ratio	0.93						
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.93	0.58	0.63	0.97	1.04	0.61	
Segment Density		20.8	25.5	42.5	-	22.2	
Segment LOS		C	C	E	F	C	
Over Capacity					Diverge		

Location	13	14	15	16	17	18	19

Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Define Freeway Segment							
Type	Merge	Weave	Basic	Merge	Merge	Basic	Diverg
Length (ft)	1,000	2,770	1,420	1,150	1,500	1,020	1,500
Accel Length	620			340	1,260		
Decel Length							175
Mainline Volume	2,680	2,850	2,500	2,500	3,170	3,470	3,470
On Ramp Volume	170	420		670	300		
Off Ramp Volume		770					1,060
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	2,850	3,270	2,500	3,170	3,470	3,470	3,470
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.978	0.978	0.978	0.978	0.978	0.978	0.978
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,068	3,520	2,691	3,412	3,735	3,735	3,735
GP Flow (pcphpl)	1,534	1,173	1,345	1,706	1,867	1,867	1,867
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes							
v/c ratio	0.65	0.50	0.57	0.73	0.79	0.79	0.79
Speed (mph)	64.7	65.0	65.0	63.7	61.9	61.9	61.9
Density (pcphpl)	23.7	18.0	20.7	26.8	30.2	30.2	30.2
LOS	C	C	C	D	D	D	D
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	2,887	3,073		2,700	3,416		3,735
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700		4,700
GP_{IN} v/c ratio	0.61	0.65		0.57	0.73		0.79
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	3,068	2,701		3,412	3,735		2,608
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700		4,700
GP_{OUT} v/c ratio	0.65	0.57		0.73	0.79		0.55

Location	13	14	15	16	17	18	19

Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	170	420		670	300		
PHF	0.95	0.95		0.95	0.95		
Total Lanes	1	1		1	1		
Terrain	Level	Level		Level	Level		
Grade %	0.0%	0.0%		0.0%	0.0%		
Grade Length (mi)	0.00	0.00		0.00	0.00		
Truck & Bus %	2.0%	2.0%		2.0%	2.0%		
RV %	0.0%	0.0%		0.0%	0.0%		
E_T	1.5	1.5		1.5	1.5		
E_R	1.2	1.2		1.2	1.2		
f_{HV}	0.990	0.990		0.990	0.990		
f_P	1.00	1.00		1.00	1.00		
On Flow (pcph)	181	447		712	319		
On Flow (pcphpl)	181	447		712	319		
Calculate On Ramp Roadway Operations							
On Ramp Type	Right	Right		Right	Right		
On Ramp Speed (mph)	25	45		25	45		
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100		
On Ramp v/c ratio	0.10	0.21		0.37	0.15		

Location	13	14	15	16	17	18	19

Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Calculate Off Ramp Flow Rate							
Off Volume (vph)		770					1,060
PHF		0.95					0.95
Total Lanes		2					1
Terrain		Level					Level
Grade %		0.0%					0.0%
Grade Length (mi)		0.00					0.00
Truck & Bus %		2.0%					2.0%
RV %		0.0%					0.0%
E_T		1.5					1.5
E_R		1.2					1.2
f_{HV}		0.990					0.990
f_P		1.00					1.00
Off Flow (pcph)		819					1,127
Off Flow (pcphpl)		409					1,127
Calculate Off Ramp Roadway Operations							
Off Ramp Type							Right
Off Ramp Speed							45
Off Ramp Cap (pcph)							2,100
Off Ramp v/c ratio							0.54
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)	2,887			2,700	3,416		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)	0.595			0.587	0.613		
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}	1.000			1.000	1.000		
v_{12} (pcph)	2,887			2,700	3,416		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)	2,887			2,700	3,416		
v_{R12a} (pcph)	3,068			3,412	3,735		
Merge Speed Index	0.37			0.42	0.37		
Merge Area Speed	56.4			55.3	56.5		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed	56.4			55.3	56.5		
Merge v/c ratio	0.67			0.74	0.81		
Merge Density	25.4			29.6	26.6		
Merge LOS	C			D	C		

Location	13	14	15	16	17	18	19

Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)							3,735
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)							0.615
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}							1.000
v_{12} (pcph)							3,735
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							3,735
Diverge Speed Index							0.40
Diverge Area Speed							55.8
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							55.8
Diverge v/c ratio							0.85
Diverge Density							34.8
Diverge LOS							D
**Calculate On Ramp to Off Ramp Flow Rate for **							
On to Off Volume (vph)		105					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to Off Flow (pcph)		112					
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)		315					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to ML Flow (pcph)		337					

Location	13	14	15	16	17	18	19

Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)		665					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		6.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.971					
f_P		1.00					
ML to Off Flow (pcph)		721					
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)		2,185					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		6.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.971					
f_P		1.00					
GP to GP Flow (pcph)		2,369					

Location	13	14	15	16	17	18	19

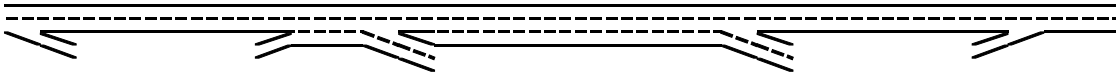
Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Pkwy Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Calculate Weave Segment Operations							
Weave Type		One-sided					
Weave Length		1,770					
Segment Lanes		3					
Weave Lanes		2					
Weave Flow (pcph)		1,058					
Non-Weave Flow		2,481					
Segment Flow		3,539					
Max Weave Length		5,572					
Length Check		OK					
Ideal Weave Capacity		2,059					
f_{HV}		0.973					
f_P		0.999					
Capacity Condition 1		6,000					
Capacity Condition 2		7,801					
Weave v/c ratio		0.57					
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.67	0.57	0.57	0.74	0.81	0.79	0.85
Segment Density	25.4		20.7	29.6	26.6	30.2	34.8
Segment LOS	C		C	D	C	D	D
Over Capacity							

Location		20	21	22	23	24	25



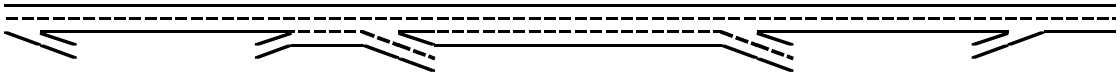
Key

<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-F
Define Freeway Segment							
Type	e	Basic	Weave	Basic	Basic	Basic	Merge
Length (ft)		2,590	2,680	900	1,500	2,870	1,500
Accel Length							600
Decel Length							
Mainline Volume		2,410	2,410	2,060	2,060	960	960
On Ramp Volume			580				380
Off Ramp Volume			930		1,100		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (							
GP Volume (vph)		2,410	2,990	2,060	2,060	960	1,340
PHF		0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes		2	3	3	3	2	2
Terrain		Level	Level	Level	Level	Level	Level
Grade %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)		0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %		4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
RV %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T		1.5	1.5	1.5	1.5	1.5	1.5
E_R		1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}		0.978	0.978	0.978	0.978	0.978	0.978
f_P		1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)		2,594	3,218	2,217	2,217	1,033	1,442
GP Flow (pcphpl)		1,297	1,073	739	739	517	721
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve		65	65	65	65	65	65
Calculate Operations in General Purpose Lanes							
v/c ratio		0.55	0.46	0.31	0.31	0.22	0.31
Speed (mph)		65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)		20.0	16.5	11.4	11.4	7.9	11.1
LOS		C	B	B	B	A	B
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)			2,586				1,034
GP_{IN} Cap (pcph)			4,700				4,700
GP_{IN} v/c ratio			0.55				0.22
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)			2,225		1,036		1,442
GP_{OUT} Cap (pcph)			4,700		4,700		4,700
GP_{OUT} v/c ratio			0.47		0.22		0.31

Location		20	21	22	23	24	25



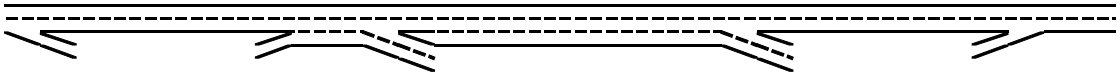
Key

<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-F
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)			580				380
PHF			0.95				0.95
Total Lanes			1				1
Terrain			Level				Level
Grade %			0.0%				0.0%
Grade Length (mi)			0.00				0.00
Truck & Bus %			7.0%				4.0%
RV %			0.0%				0.0%
E_T			1.5				1.5
E_R			1.2				1.2
f_{HV}			0.966				0.980
f_P			1.00				1.00
On Flow (pcph)			632				408
On Flow (pcphpl)			632				408
Calculate On Ramp Roadway Operations							
On Ramp Type			Right				Right
On Ramp Speed (mph)			45				45
On Ramp Cap (pcph)			2,100				2,100
On Ramp v/c ratio			0.30				0.19

Location		20	21	22	23	24	25



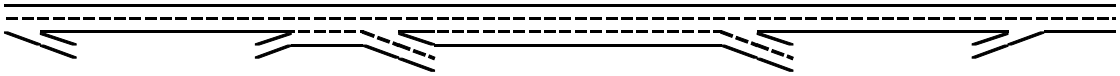
Key

<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-F
Calculate Off Ramp Flow Rate							
Off Volume (vph)			930		1,100		
PHF			0.95		0.95		
Total Lanes			2		2		
Terrain			Level		Level		
Grade %			0.0%		0.0%		
Grade Length (mi)			0.00		0.00		
Truck & Bus %			3.0%		4.0%		
RV %			0.0%		0.0%		
E_T			1.5		1.5		
E_R			1.2		1.2		
f_{HV}			0.985		0.980		
f_P			1.00		1.00		
Off Flow (pcph)			994		1,181		
Off Flow (pcphpl)			497		591		
Calculate Off Ramp Roadway Operations							
Off Ramp Type			Right		Right		
Off Ramp Speed			45		45		
Off Ramp Cap (pcph)			4,200		4,200		
Off Ramp v/c ratio			0.24		0.28		
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)							1,034
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)							0.594
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}							1.000
v_{12} (pcph)							1,034
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							1,034
v_{R12a} (pcph)							1,442
Merge Speed Index							0.28
Merge Area Speed							58.5
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							58.5
Merge v/c ratio							0.31
Merge Density							12.8
Merge LOS							B

Location		20	21	22	23	24	25



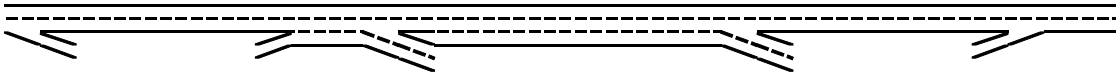
Key

<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-F
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)							
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)							
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}							
v_{12} (pcph)							
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							
Diverge Speed Index							
Diverge Area Speed							
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio							
Diverge Density							
Diverge LOS							
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)			58				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			7.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.966				
f_P			1.00				
On to Off Flow (pcph)			75				
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)			522				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
On to ML Flow (pcph)			662				

Location		20	21	22	23	24	25



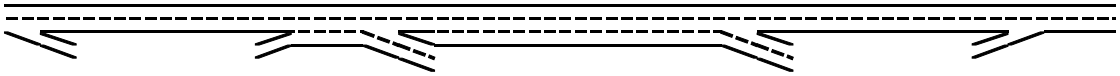
Key

<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-F
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)			872				
PHF			0.83				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
ML to Off Flow (pcph)			1,066				
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)			1,538				
PHF			0.825				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
GP to GP Flow (pcph)			1,892				

Location		20	21	22	23	24	25



Key

<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-R
Calculate Weave Segment Operations							
Weave Type			One-sided				
Weave Length			1,680				
Segment Lanes			3				
Weave Lanes			3				
Weave Flow (pcph)			1,729				
Non-Weave Flow			1,967				
Segment Flow			3,696				
Max Weave Length			5,886				
Length Check			OK				
Ideal Weave Capacity			2,028				
f_{HV}			0.985				
f_P			0.997				
Capacity Condition 1			5,977				
Capacity Condition 2			7,350				
Weave v/c ratio			0.61				
Interchange Density			0.666666667				
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate			0				
Weave LC Rate			564				
Non-Weave LC Rate 1			738				
Non-Weave LC Rate 2			2,128				
Non-Weave LC Rate 3			-1,570				
Segment LC Rate			1,302				
Weave Intensity Factor			0.185				
Weave Speed			57.2				
Non-Weave Speed			59.1				
Segment Speed			58.2				
Weave Density			21.2				
Weave LOS			C				
Summarize Segment Operations							
Segment v/c ratio		0.55	0.61	0.31	0.31	0.22	0.31
Segment Density		20.0	21.2	11.4	11.4	7.9	12.8
Segment LOS		C	C	B	B	A	B
Over Capacity							

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segment		
Type		Basic
Length (ft)		8,600
Accel Length		
Decel Length		
Mainline Volume		1,340
On Ramp Volume		
Off Ramp Volume		
Express Lane Volume		
EL On Ramp Volume		
EL Off Ramp Volume		
Calculate Flow Rate in General Purpose Lanes (		
GP Volume (vph)		1,340
PHF		0.95
GP Lanes		2
Terrain		Level
Grade %		0.0%
Grade Length (mi)		0.00
Truck & Bus %		4.5%
RV %		0.0%
E_T		1.5
E_R		1.2
f_{HV}		0.978
f_P		1.00
GP Flow (pcph)		1,442
GP Flow (pcphpl)		721
Calculate Speed in General Purpose Lanes		
Lane Width (ft)		
Shoulder Width		
TRD		
f_{LW}		
f_{LC}		
Calculated FFS		
Measured FFS		
FFS Curve		65
Calculate Operations in General Purpose Lanes		
v/c ratio		0.31
Speed (mph)		65.0
Density (pcphpl)		11.1
LOS		B
Calculate Operations for Entering GP Lanes		
GP_{IN} Vol (pcph)		
GP_{IN} Cap (pcph)		
GP_{IN} v/c ratio		
Calculate Operations for Exiting GP Lanes		
GP_{OUT} Vol (pcph)		
GP_{OUT} Cap (pcph)		
GP_{OUT} v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in Express Lanes (EL)		
Calculate Speed in Express Lanes		
Calculate Operations in Express Lanes		
Calculate On Ramp Flow Rate		
On Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On Flow (pcph)		
On Flow (pcphpl)		
Calculate On Ramp Roadway Operations		
On Ramp Type		
On Ramp Speed (mph)		
On Ramp Cap (pcph)		
On Ramp v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flow Rate		
Off Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
Off Flow (pcph)		
Off Flow (pcphpl)		
Calculate Off Ramp Roadway Operations		
Off Ramp Type		
Off Ramp Speed		
Off Ramp Cap (pcph)		
Off Ramp v/c ratio		
Determine Adjacent Ramp for Three-Lane Main		
Up Type		
Up Distance		
Up Flow (pcph)		
Down Type		
Down Distance		
Down Flow (pcph)		
Calculate Merge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FM} (Eqn 13-3)		
P_{FM} (Eqn 13-4)		
P_{FM} (Eqn 13-5)		
P_{FM}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
v_{R12a} (pcph)		
Merge Speed Index		
Merge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Merge v/c ratio		
Merge Density		
Merge LOS		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FD} (Eqn 13-9)		
P_{FD} (Eqn 13-10)		
P_{FD} (Eqn 13-11)		
P_{FD}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
Diverge Speed Index		
Diverge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Diverge v/c ratio		
Diverge Density		
Diverge LOS		
**Calculate On Ramp to Off Ramp Flow Rate for **		
On to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to Off Flow (pcph)		
Calculate On Ramp to Mainline Flow Rate for W		
On to ML Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to ML Flow (pcph)		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to Off Ramp Flow Rate for W		
ML to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
ML to Off Flow (pcph)		
Calculate General Purpose Lanes to General Pu		
GP to GP Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
GP to GP Flow (pcph)		

Location		26

Key

<> Express Lane (HOV)

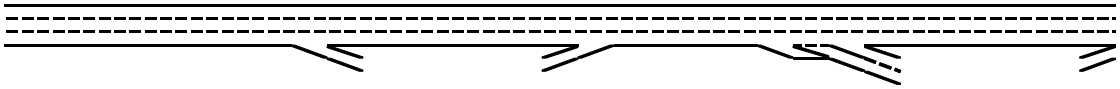
No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segment Operations		
Weave Type		
Weave Length		
Segment Lanes		
Weave Lanes		
Weave Flow (pcph)		
Non-Weave Flow		
Segment Flow		
Max Weave Length		
Length Check		
Ideal Weave Capacity		
f_{HV}		
f_P		
Capacity Condition 1		
Capacity Condition 2		
Weave v/c ratio		
Interchange Density		
Lane Changes On to ML		
Lane Changes ML to Off		
Lane Changes On to Off		
Min Lane Change Rate		
Weave LC Rate		
Non-Weave LC Rate 1		
Non-Weave LC Rate 2		
Non-Weave LC Rate 3		
Segment LC Rate		
Weave Intensity Factor		
Weave Speed		
Non-Weave Speed		
Segment Speed		
Weave Density		
Weave LOS		
Summarize Segment Operations		
Segment v/c ratio		0.31
Segment Density		11.1
Segment LOS		B
Over Capacity		

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 Cumulative Plus Project Conditions
Timee Period: 2035 PM Peak Hour

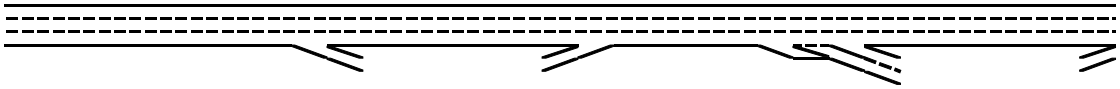
Location	1	2	3	4	5	6	



Key
<> Express Lane (HOV)
No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Define Freeway Segment							
Type	Basic	Diverge	Basic	Merge	Diverge	Basic	
Length (ft)	1,780	1,500	2,960	1,500	1,500	1,250	
Accel Length				270			
Decel Length		120			1,500		
Mainline Volume	6,250	6,250	5,040	5,040	6,040	4,750	
On Ramp Volume				1,000			
Off Ramp Volume		1,210			1,290		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes (GP)							
GP Volume (vph)	6,250	6,250	5,040	6,040	6,040	4,750	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	3	3	3	3	3	3	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	6,658	6,658	5,369	6,434	6,434	5,060	
GP Flow (pcphpl)	2,219	2,219	1,790	2,145	2,145	1,687	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.94	0.94	0.76	0.91	0.91	0.72	
Speed (mph)	55.5	55.5	62.8	57.1	57.1	63.8	
Density (pcphpl)	40.0	40.0	28.5	37.5	37.5	26.4	
LOS	E	E	D	E	E	D	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)		6,658		5,371	6,434		
GP_{IN} Cap (pcph)		7,050		7,050	7,050		
GP_{IN} v/c ratio		0.94		0.76	0.91		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)		5,411		6,434	5,056		
GP_{OUT} Cap (pcph)		7,050		7,050	7,050		
GP_{OUT} v/c ratio		0.77		0.91	0.72		

Location	1	2	3	4	5	6	



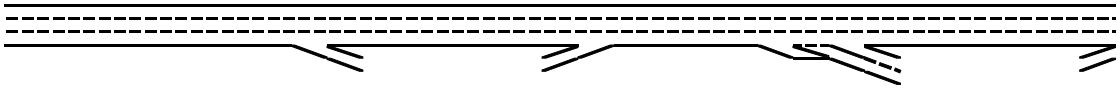
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)				1,000			
PHF				0.95			
Total Lanes				1			
Terrain				Level			
Grade %				0.0%			
Grade Length (mi)				0.00			
Truck & Bus %				2.0%			
RV %				0.0%			
E_T				1.5			
E_R				1.2			
f_{HV}				0.990			
f_P				1.00			
On Flow (pcph)				1,063			
On Flow (pcphpl)				1,063			
Calculate On Ramp Roadway Operations							
On Ramp Type				Right			
On Ramp Speed (mph)				45			
On Ramp Cap (pcph)				2,100			
On Ramp v/c ratio				0.51			

Location	1	2	3	4	5	6	



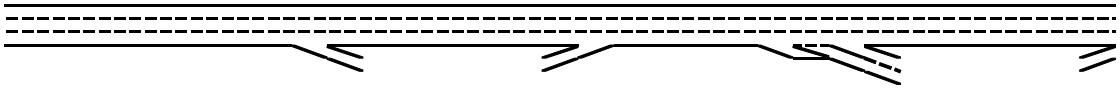
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Off Ramp Flow Rate							
Off Volume (vph)		1,210			1,290		
PHF		0.98			0.95		
Total Lanes		1			2		
Terrain		Level			Level		
Grade %		0.0%			0.0%		
Grade Length (mi)		0.00			0.00		
Truck & Bus %		2.0%			3.0%		
RV %		0.0%			0.0%		
E_T		1.5			1.5		
E_R		1.2			1.2		
f_{HV}		0.990			0.985		
f_P		1.00			1.00		
Off Flow (pcph)		1,247			1,378		
Off Flow (pcphpl)		1,247			689		
Calculate Off Ramp Roadway Operations							
Off Ramp Type		Right			Right		
Off Ramp Speed		45			45		
Off Ramp Cap (pcph)		2,100			4,200		
Off Ramp v/c ratio		0.59			0.33		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps							
Up Type		No		Off			
Up Distance				2,960			
Up Flow (pcph)				1,247			
Down Type		On		No			
Down Distance		2,960					
Down Flow (pcph)		1,063					
Calculate Merge Influence Area Operations							
Effective v_P (pcph)				5,371			
Up Ramp L_{EQ}				1,448			
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)				0.585			
P_{FM} (Eqn 13-4)				0.680			
P_{FM} (Eqn 13-5)							
P_{FM}				0.585			
v_{12} (pcph)				3,142			
v_3 (pcph)				2,229			
v_{34} (pcph)							
v_{12a} (pcph)				3,142			
v_{R12a} (pcph)				4,206			
Merge Speed Index				0.56			
Merge Area Speed				52.2			
Outer Lanes Volume				2,229			
Outer Lanes Speed				58.8			
Segment Speed				54.3			
Merge v/c ratio				0.91			
Merge Density				36.1			
Merge LOS				E			

Location	1	2	3	4	5	6	



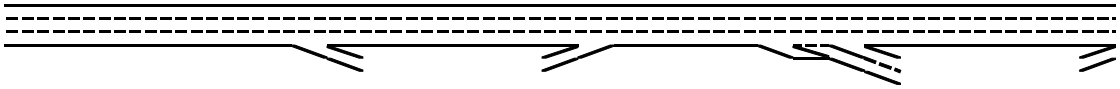
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)		6,658			6,434		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}		2,230					
P_{FD} (Eqn 13-9)		0.536			0.536		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}		0.536			0.450		
v_{12} (pcph)		4,148			3,653		
v_3 (pcph)		2,510			2,781		
v_{34} (pcph)							
v_{12a} (pcph)		4,148			3,734		
Diverge Speed Index		0.41			0.42		
Diverge Area Speed		55.6			55.3		
Outer Lanes Volume		2,510			2,700		
Outer Lanes Speed		65.4			64.7		
Segment Speed		58.9			58.9		
Diverge v/c ratio		0.94			0.85		
Diverge Density		38.8			22.9		
Diverge LOS		E			C		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments							
On to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to Off Flow (pcph)							
Calculate On Ramp to Mainline Flow Rate for Weave Segments							
On to ML Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
On to ML Flow (pcph)							

Location	1	2	3	4	5	6	



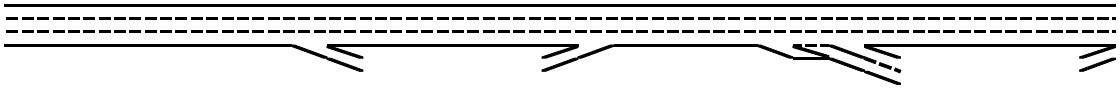
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Mainline to Off Ramp Flow Rate for Weave Segments							
ML to Off Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
ML to Off Flow (pcph)							
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments							
GP to GP Volume (vph)							
PHF							
Terrain							
Grade %							
Grade Length (mi)							
Truck & Bus %							
RV %							
E_T							
E_R							
f_{HV}							
f_P							
GP to GP Flow (pcph)							

Location	1	2	3	4	5	6	



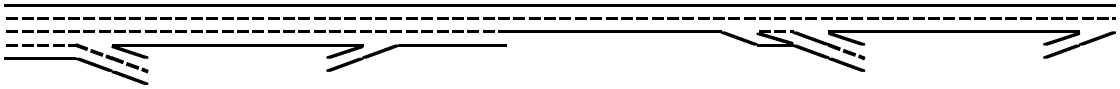
Key

<> Express Lane (HOV)

No Trucks

Name	I-80 to Galleria Blvd	Stanford Ranch Rd Off-Ramp	Stanford Ranch Rd Off to On-Ramp	Stanford Ranch Rd On-Ramp	Pleasant Grove Blvd Off-Ramp	Pleasant Grove Off to On-Ramp	loop c
Calculate Weave Segment Operations							
Weave Type							
Weave Length							
Segment Lanes							
Weave Lanes							
Weave Flow (pcph)							
Non-Weave Flow							
Segment Flow							
Max Weave Length							
Length Check							
Ideal Weave Capacity							
f_{HV}							
f_P							
Capacity Condition 1							
Capacity Condition 2							
Weave v/c ratio							
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.94	0.94	0.76	0.91	0.85	0.72	
Segment Density	40.0	38.8	28.5	36.1	22.9	26.4	
Segment LOS	E	E	D	E	C	D	
Over Capacity							

Location	7	8	9	10	11	12	



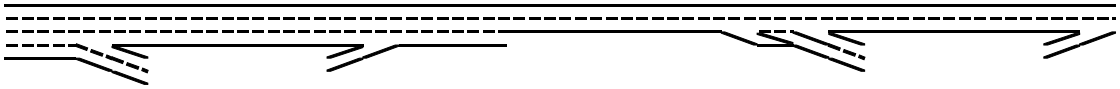
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Define Freeway Segment							
Type	Weave	Basic	Merge	Basic	Diverge	Basic	
Length (ft)	3,370	1,920	1,500	3,300	1,500	1,800	
Accel Length			375				
Decel Length					1,500		
Mainline Volume	4,750	3,910	3,910	4,230	4,230	3,180	
On Ramp Volume	910		320				
Off Ramp Volume	1,750				1,050		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	5,660	3,910	4,230	4,230	4,230	3,180	
PHF	0.95	0.95	0.95	0.95	0.95	0.95	
GP Lanes	4	3	3	2	2	2	
Terrain	Level	Level	Level	Level	Level	Level	
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
E_T	1.5	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	
f_P	1.00	1.00	1.00	1.00	1.00	1.00	
GP Flow (pcph)	6,029	4,165	4,506	4,506	4,506	3,388	
GP Flow (pcphpl)	1,507	1,388	1,502	2,253	2,253	1,694	
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	
Calculate Operations in General Purpose Lanes							
v/c ratio	0.64	0.59	0.64	0.96	0.96	0.72	
Speed (mph)	64.8	65.0	64.9	54.7	54.7	63.8	
Density (pcphpl)	23.2	21.4	23.2	41.2	41.2	26.6	
LOS	C	C	C	E	E	D	
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	5,057		4,166		4,506		
GP_{IN} Cap (pcph)	7,050		7,050		4,700		
GP_{IN} v/c ratio	0.72		0.59		0.96		
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	4,160		4,506		3,390		
GP_{OUT} Cap (pcph)	7,050		7,050		4,700		
GP_{OUT} v/c ratio	0.59		0.64		0.72		

Location	7	8	9	10	11	12	



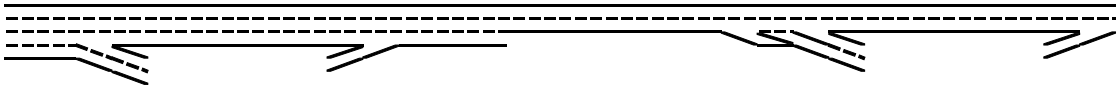
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	910		320				
PHF	0.95		0.95				
Total Lanes	1		1				
Terrain	Level		Level				
Grade %	0.0%		0.0%				
Grade Length (mi)	0.00		0.00				
Truck & Bus %	3.0%		2.0%				
RV %	0.0%		0.0%				
E_T	1.5		1.5				
E_R	1.2		1.2				
f_{HV}	0.985		0.990				
f_P	1.00		1.00				
On Flow (pcph)	972		340				
On Flow (pcphpl)	972		340				
Calculate On Ramp Roadway Operations							
On Ramp Type	Right		Right				
On Ramp Speed (mph)	25		25				
On Ramp Cap (pcph)	1,900		1,900				
On Ramp v/c ratio	0.51		0.18				

Location	7	8	9	10	11	12	



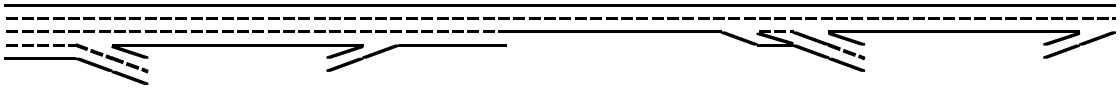
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Off Ramp Flow Rate							
Off Volume (vph)	1,750				1,050		
PHF	0.95				0.95		
Total Lanes	2				2		
Terrain	Level				Level		
Grade %	0.0%				0.0%		
Grade Length (mi)	0.00				0.00		
Truck & Bus %	3.0%				2.0%		
RV %	0.0%				0.0%		
E_T	1.5				1.5		
E_R	1.2				1.2		
f_{HV}	0.985				0.990		
f_P	1.00				1.00		
Off Flow (pcph)	1,870				1,116		
Off Flow (pcphpl)	935				558		
Calculate Off Ramp Roadway Operations							
Off Ramp Type	Right				Right		
Off Ramp Speed	45				45		
Off Ramp Cap (pcph)	4,200				4,200		
Off Ramp v/c ratio	0.45				0.27		
Determine Adjacent Ramp for Three-Lane Main							
Up Type			No				
Up Distance							
Up Flow (pcph)							
Down Type			No				
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)			4,166				
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)			0.588				
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}			0.588				
v_{12} (pcph)			2,450				
v_3 (pcph)			1,716				
v_{34} (pcph)							
v_{12a} (pcph)			2,450				
v_{R12a} (pcph)			2,790				
Merge Speed Index			0.37				
Merge Area Speed			56.6				
Outer Lanes Volume			1,716				
Outer Lanes Speed			60.6				
Segment Speed			58.1				
Merge v/c ratio			0.61				
Merge Density			24.7				
Merge LOS			C				

Location	7	8	9	10	11	12	



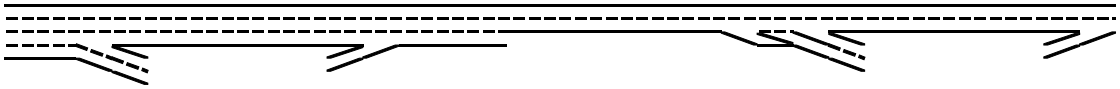
Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)					4,506		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)					0.596		
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}					1.000		
v_{12} (pcph)					4,506		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)					4,506		
Diverge Speed Index					0.40		
Diverge Area Speed					55.8		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed					55.8		
Diverge v/c ratio					1.02		
Diverge Density					29.5		
Diverge LOS					F		
Calculate On Ramp to Off Ramp Flow Rate for							
On to Off Volume (vph)	50						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to Off Flow (pcph)	53						
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)	860						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
On to ML Flow (pcph)	919						

Location	7	8	9	10	11	12	



Key

<> Express Lane (HOV)

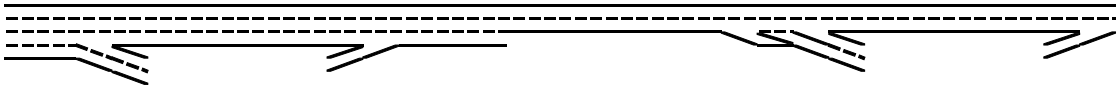
No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)	1,700						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
ML to Off Flow (pcph)	1,816						
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)	3,050						
PHF	0.95						
Terrain	Level						
Grade %	0.0%						
Grade Length (mi)	0.00						
Truck & Bus %	3.0%						
RV %	0.0%						
E_T	1.5						
E_R	1.2						
f_{HV}	0.985						
f_P	1.00						
GP to GP Flow (pcph)	3,259						

Project: Amoruso Ranch EIR
Freeway Corridor: Northbound SR-65

2035 Cumulative Plus Project Conditions
Timee Period: 2035 PM Peak Hour

Location	7	8	9	10	11	12	



Key

<> Express Lane (HOV)

No Trucks

Name	on-ramp from Pleasant Grove	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks On to Sunset Off-Ramp	Sunset Blvd Off-Ramp	Sunset Off-Ramp to Loop-On Ramp	Sunset L
Calculate Weave Segment Operations							
Weave Type	One-sided						
Weave Length	2,370						
Segment Lanes	4						
Weave Lanes	2						
Weave Flow (pcph)	2,735						
Non-Weave Flow	3,312						
Segment Flow	6,047						
Max Weave Length	7,274						
Length Check	OK						
Ideal Weave Capacity	1,975						
f_{HV}	0.985						
f_P	0.998						
Capacity Condition 1	7,765						
Capacity Condition 2	5,216						
Weave v/c ratio	1.14						
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	1.14	0.59	0.61	0.96	1.02	0.72	
Segment Density	-	21.4	24.7	41.2	-	26.6	
Segment LOS	F	C	C	E	F	D	
Over Capacity	Weave				Diverge		

Location	13	14	15	16	17	18	19

Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Define Freeway Segment							
Type	Merge	Weave	Basic	Merge	Merge	Basic	Diverg
Length (ft)	1,000	2,770	1,420	1,150	1,500	1,020	1,500
Accel Length	620			340	1,260		
Decel Length							175
Mainline Volume	3,180	3,830	3,930	3,930	4,490	4,700	4,700
On Ramp Volume	650	440		560	210		
Off Ramp Volume		340					500
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)	3,830	4,270	3,930	4,490	4,700	4,700	4,700
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.988	0.988	0.988	0.988	0.988	0.988	0.988
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,080	4,549	4,186	4,783	5,007	5,007	5,007
GP Flow (pcphpl)	2,040	1,516	2,093	2,392	2,503	2,503	2,503
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes							
v/c ratio	0.87	0.65	0.89	1.02	1.07	1.07	1.07
Speed (mph)	59.2	64.8	58.2	-	-	-	-
Density (pcphpl)	34.5	23.4	36.0	-	-	-	-
LOS	D	C	E	F	F	F	F
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)	3,389	4,081		4,188	4,783		5,007
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700		4,700
GP_{IN} v/c ratio	0.72	0.87		0.89	1.02		1.07
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)	4,080	4,187		4,783	5,007		4,475
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700		4,700
GP_{OUT} v/c ratio	0.87	0.89		1.02	1.07		0.95

Location	13	14	15	16	17	18	19

Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)	650	440		560	210		
PHF	0.95	0.95		0.95	0.95		
Total Lanes	1	1		1	1		
Terrain	Level	Level		Level	Level		
Grade %	0.0%	0.0%		0.0%	0.0%		
Grade Length (mi)	0.00	0.00		0.00	0.00		
Truck & Bus %	2.0%	2.0%		2.0%	2.0%		
RV %	0.0%	0.0%		0.0%	0.0%		
E_T	1.5	1.5		1.5	1.5		
E_R	1.2	1.2		1.2	1.2		
f_{HV}	0.990	0.990		0.990	0.990		
f_P	1.00	1.00		1.00	1.00		
On Flow (pcph)	691	468		595	223		
On Flow (pcphpl)	691	468		595	223		
Calculate On Ramp Roadway Operations							
On Ramp Type	Right	Right		Right	Right		
On Ramp Speed (mph)	25	45		25	45		
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100		
On Ramp v/c ratio	0.36	0.22		0.31	0.11		

Location	13	14	15	16	17	18	19

Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Calculate Off Ramp Flow Rate							
Off Volume (vph)		340					500
PHF		0.95					0.95
Total Lanes		2					1
Terrain		Level					Level
Grade %		0.0%					0.0%
Grade Length (mi)		0.00					0.00
Truck & Bus %		2.0%					2.0%
RV %		0.0%					0.0%
E_T		1.5					1.5
E_R		1.2					1.2
f_{HV}		0.990					0.990
f_P		1.00					1.00
Off Flow (pcph)		361					532
Off Flow (pcphpl)		181					532
Calculate Off Ramp Roadway Operations							
Off Ramp Type							Right
Off Ramp Speed							45
Off Ramp Cap (pcph)							2,100
Off Ramp v/c ratio							0.25
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)	3,389			4,188	4,783		
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)	0.595			0.587	0.613		
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}	1.000			1.000	1.000		
v_{12} (pcph)	3,389			4,188	4,783		
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)	3,389			4,188	4,783		
v_{R12a} (pcph)	4,080			4,783	5,007		
Merge Speed Index	0.52			-	-		
Merge Area Speed	53.0			-	-		
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed	53.0						
Merge v/c ratio	0.89			1.04	1.09		
Merge Density	33.1			-	-		
Merge LOS	D			F	F		

Location	13	14	15	16	17	18	19

Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)							5,007
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)							0.610
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}							1.000
v_{12} (pcph)							5,007
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							5,007
Diverge Speed Index							-
Diverge Area Speed							-
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio							1.14
Diverge Density							-
Diverge LOS							F
**Calculate On Ramp to Off Ramp Flow Rate for **							
On to Off Volume (vph)		110					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to Off Flow (pcph)		118					
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)		330					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
On to ML Flow (pcph)		353					

Location	13	14	15	16	17	18	19

Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)		230					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
ML to Off Flow (pcph)		246					
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)		3,600					
PHF		0.95					
Terrain		Level					
Grade %		0.0%					
Grade Length (mi)		0.00					
Truck & Bus %		3.0%					
RV %		0.0%					
E_T		1.5					
E_R		1.2					
f_{HV}		0.985					
f_P		1.00					
GP to GP Flow (pcph)		3,846					

Location	13	14	15	16	17	18	19

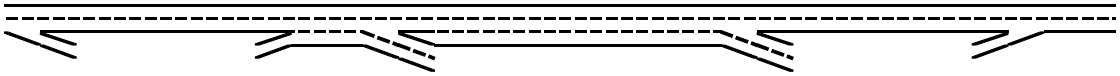
Key

<> Express Lane (HOV)

No Trucks

Name	oop On Ramp	Sunset Slip On-Ramp to Whitney Ranch Off	Whitney Ranch Pkwy off to on-ramp	Whitney Ranch Pkwy Loop On-ramp	Whitney Ranch Pkwy Slip On-ramp	Whitney Ranch Pkwy to Twelve Bridges	Twelve Bridges
Calculate Weave Segment Operations							
Weave Type		One-sided					
Weave Length		1,770					
Segment Lanes		3					
Weave Lanes		2					
Weave Flow (pcph)		598					
Non-Weave Flow		3,964					
Segment Flow		4,562					
Max Weave Length		3,844					
Length Check		OK					
Ideal Weave Capacity		2,191					
f_{HV}		0.985					
f_P		0.999					
Capacity Condition 1		6,469					
Capacity Condition 2		18,009					
Weave v/c ratio		0.69					
Interchange Density							
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate							
Weave LC Rate							
Non-Weave LC Rate 1							
Non-Weave LC Rate 2							
Non-Weave LC Rate 3							
Segment LC Rate							
Weave Intensity Factor							
Weave Speed							
Non-Weave Speed							
Segment Speed							
Weave Density							
Weave LOS							
Summarize Segment Operations							
Segment v/c ratio	0.89	0.69	0.89	1.04	1.09	1.07	1.14
Segment Density	33.1		36.0	-	-	-	-
Segment LOS	D		E	F	F	F	F
Over Capacity				Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes In GP Lanes Out GP Lanes Merge	Segment GP Lanes	Segment GP Lanes In G

Location		20	21	22	23	24	25



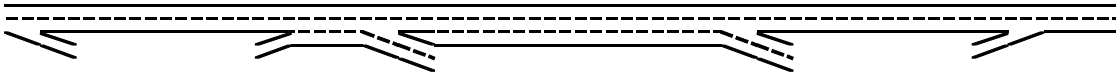
Key

<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-F
Define Freeway Segment							
Type	e	Basic	Weave	Basic	Basic	Basic	Merge
Length (ft)		2,590	2,680	900	1,500	2,870	1,500
Accel Length							600
Decel Length							
Mainline Volume		4,200	4,200	4,310	4,310	2,200	2,200
On Ramp Volume			980				520
Off Ramp Volume			870		2,110		
Express Lane Volume							
EL On Ramp Volume							
EL Off Ramp Volume							
Calculate Flow Rate in General Purpose Lanes							
GP Volume (vph)		4,200	5,180	4,310	4,310	2,200	2,720
PHF		0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes		2	3	3	3	2	2
Terrain		Level	Level	Level	Level	Level	Level
Grade %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)		0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %		2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
RV %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T		1.5	1.5	1.5	1.5	1.5	1.5
E_R		1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}		0.988	0.988	0.988	0.988	0.988	0.988
f_P		1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)		4,474	5,518	4,591	4,591	2,344	2,898
GP Flow (pcphpl)		2,237	1,839	1,530	1,530	1,172	1,449
Calculate Speed in General Purpose Lanes							
Lane Width (ft)							
Shoulder Width							
TRD							
f_{LW}							
f_{LC}							
Calculated FFS							
Measured FFS							
FFS Curve		65	65	65	65	65	65
Calculate Operations in General Purpose Lanes							
v/c ratio		0.95	0.78	0.65	0.65	0.50	0.62
Speed (mph)		55.1	62.3	64.8	64.8	65.0	65.0
Density (pcphpl)		40.6	29.5	23.6	23.6	18.0	22.3
LOS		E	D	C	C	C	C
Calculate Operations for Entering GP Lanes							
GP_{IN} Vol (pcph)			4,471				2,345
GP_{IN} Cap (pcph)			4,700				4,700
GP_{IN} v/c ratio			0.95				0.50
Calculate Operations for Exiting GP Lanes							
GP_{OUT} Vol (pcph)			4,593		2,348		2,898
GP_{OUT} Cap (pcph)			4,700		4,700		4,700
GP_{OUT} v/c ratio			0.98		0.50		0.62

Location		20	21	22	23	24	25



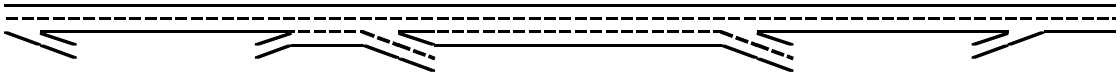
Key

<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-F
Calculate Flow Rate in Express Lanes (EL)							
Calculate Speed in Express Lanes							
Calculate Operations in Express Lanes							
Calculate On Ramp Flow Rate							
On Volume (vph)			980				520
PHF			0.95				0.95
Total Lanes			1				1
Terrain			Level				Level
Grade %			0.0%				0.0%
Grade Length (mi)			0.00				0.00
Truck & Bus %			3.0%				2.0%
RV %			0.0%				0.0%
E_T			1.5				1.5
E_R			1.2				1.2
f_{HV}			0.985				0.990
f_P			1.00				1.00
On Flow (pcph)			1,047				553
On Flow (pcphpl)			1,047				553
Calculate On Ramp Roadway Operations							
On Ramp Type			Right				Right
On Ramp Speed (mph)			45				45
On Ramp Cap (pcph)			2,100				2,100
On Ramp v/c ratio			0.50				0.26

Location		20	21	22	23	24	25



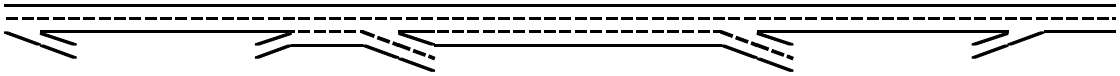
Key

<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-F
Calculate Off Ramp Flow Rate							
Off Volume (vph)			870		2,110		
PHF			0.95		0.95		
Total Lanes			2		2		
Terrain			Level		Level		
Grade %			0.0%		0.0%		
Grade Length (mi)			0.00		0.00		
Truck & Bus %			2.0%		2.0%		
RV %			0.0%		0.0%		
E_T			1.5		1.5		
E_R			1.2		1.2		
f_{HV}			0.990		0.990		
f_P			1.00		1.00		
Off Flow (pcph)			925		2,243		
Off Flow (pcphpl)			462		1,122		
Calculate Off Ramp Roadway Operations							
Off Ramp Type			Right		Right		
Off Ramp Speed			45		45		
Off Ramp Cap (pcph)			4,200		4,200		
Off Ramp v/c ratio			0.22		0.53		
Determine Adjacent Ramp for Three-Lane Main							
Up Type							
Up Distance							
Up Flow (pcph)							
Down Type							
Down Distance							
Down Flow (pcph)							
Calculate Merge Influence Area Operations							
Effective v_P (pcph)							2,345
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FM} (Eqn 13-3)							0.594
P_{FM} (Eqn 13-4)							
P_{FM} (Eqn 13-5)							
P_{FM}							1.000
v_{12} (pcph)							2,345
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							2,345
v_{R12a} (pcph)							2,898
Merge Speed Index							0.34
Merge Area Speed							57.2
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							57.2
Merge v/c ratio							0.63
Merge Density							24.1
Merge LOS							C

Location		20	21	22	23	24	25



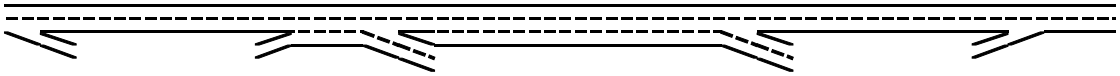
Key

<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-R
Calculate Diverge Influence Area Operations							
Effective v_P (pcph)							
Up Ramp L_{EQ}							
Down Ramp L_{EQ}							
P_{FD} (Eqn 13-9)							
P_{FD} (Eqn 13-10)							
P_{FD} (Eqn 13-11)							
P_{FD}							
v_{12} (pcph)							
v_3 (pcph)							
v_{34} (pcph)							
v_{12a} (pcph)							
Diverge Speed Index							
Diverge Area Speed							
Outer Lanes Volume							
Outer Lanes Speed							
Segment Speed							
Diverge v/c ratio							
Diverge Density							
Diverge LOS							
Calculate On Ramp to Off Ramp Flow Rate for V							
On to Off Volume (vph)			98				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			7.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.966				
f_P			1.00				
On to Off Flow (pcph)			127				
Calculate On Ramp to Mainline Flow Rate for W							
On to ML Volume (vph)			882				
PHF			0.8				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
On to ML Flow (pcph)			1,119				

Location		20	21	22	23	24	25



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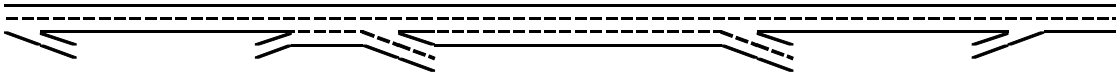
<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-F
Calculate Mainline to Off Ramp Flow Rate for W							
ML to Off Volume (vph)			772				
PHF			0.83				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
ML to Off Flow (pcph)			944				
Calculate General Purpose Lanes to General Pu							
GP to GP Volume (vph)			3,428				
PHF			0.825				
Terrain			Level				
Grade %			0.0%				
Grade Length (mi)			0.00				
Truck & Bus %			3.0%				
RV %			0.0%				
E_T			1.5				
E_R			1.2				
f_{HV}			0.985				
f_P			1.00				
GP to GP Flow (pcph)			4,217				

Location		20	21	22	23	24	25



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<> Express Lane (HOV)

No Trucks

Name	Off-Ramp	Twelve Bridges Off to On-Ramp	Twelve Bridges On to Lincoln Off-Ramp	Lincoln Blvd Off to Ferrari Ranch Rd	Ferrari Ranch Rd Off-Ramp	Ferrari Ranch Rd Off to On-Ramp	Ferrari Ranch Rd On-F
Calculate Weave Segment Operations							
Weave Type			One-sided				
Weave Length			1,680				
Segment Lanes			3				
Weave Lanes			3				
Weave Flow (pcph)			2,063				
Non-Weave Flow			4,344				
Segment Flow			6,407				
Max Weave Length			4,255				
Length Check			OK				
Ideal Weave Capacity			2,153				
f_{HV}			0.985				
f_P			0.997				
Capacity Condition 1			6,345				
Capacity Condition 2			10,678				
Weave v/c ratio			0.99				
Interchange Density			0.666666667				
Lane Changes On to ML							
Lane Changes ML to Off							
Lane Changes On to Off							
Min Lane Change Rate			0				
Weave LC Rate			564				
Non-Weave LC Rate 1			1,228				
Non-Weave LC Rate 2			2,658				
Non-Weave LC Rate 3			-562				
Segment LC Rate			1,791				
Weave Intensity Factor			0.238				
Weave Speed			55.4				
Non-Weave Speed			54.7				
Segment Speed			55.0				
Weave Density			38.9				
Weave LOS			E				
Summarize Segment Operations							
Segment v/c ratio		0.95	0.99	0.65	0.65	0.50	0.63
Segment Density		40.6	38.9	23.6	23.6	18.0	24.1
Segment LOS		E	E	C	C	C	C
Over Capacity	P Lanes Diverge						

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Define Freeway Segment		
Type		Basic
Length (ft)		8,600
Accel Length		
Decel Length		
Mainline Volume		2,720
On Ramp Volume		
Off Ramp Volume		
Express Lane Volume		
EL On Ramp Volume		
EL Off Ramp Volume		
Calculate Flow Rate in General Purpose Lanes (		
GP Volume (vph)		2,720
PHF		0.95
GP Lanes		2
Terrain		Level
Grade %		0.0%
Grade Length (mi)		0.00
Truck & Bus %		2.4%
RV %		0.0%
E_T		1.5
E_R		1.2
f_{HV}		0.988
f_P		1.00
GP Flow (pcph)		2,898
GP Flow (pcphpl)		1,449
Calculate Speed in General Purpose Lanes		
Lane Width (ft)		
Shoulder Width		
TRD		
f_{LW}		
f_{LC}		
Calculated FFS		
Measured FFS		
FFS Curve		65
Calculate Operations in General Purpose Lanes		
v/c ratio		0.62
Speed (mph)		65.0
Density (pcphpl)		22.3
LOS		C
Calculate Operations for Entering GP Lanes		
GP_{IN} Vol (pcph)		
GP_{IN} Cap (pcph)		
GP_{IN} v/c ratio		
Calculate Operations for Exiting GP Lanes		
GP_{OUT} Vol (pcph)		
GP_{OUT} Cap (pcph)		
GP_{OUT} v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Flow Rate in Express Lanes (EL)		
Calculate Speed in Express Lanes		
Calculate Operations in Express Lanes		
Calculate On Ramp Flow Rate		
On Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On Flow (pcph)		
On Flow (pcphpl)		
Calculate On Ramp Roadway Operations		
On Ramp Type		
On Ramp Speed (mph)		
On Ramp Cap (pcph)		
On Ramp v/c ratio		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Off Ramp Flow Rate		
Off Volume (vph)		
PHF		
Total Lanes		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
Off Flow (pcph)		
Off Flow (pcphpl)		
Calculate Off Ramp Roadway Operations		
Off Ramp Type		
Off Ramp Speed		
Off Ramp Cap (pcph)		
Off Ramp v/c ratio		
Determine Adjacent Ramp for Three-Lane Main		
Up Type		
Up Distance		
Up Flow (pcph)		
Down Type		
Down Distance		
Down Flow (pcph)		
Calculate Merge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FM} (Eqn 13-3)		
P_{FM} (Eqn 13-4)		
P_{FM} (Eqn 13-5)		
P_{FM}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
v_{R12a} (pcph)		
Merge Speed Index		
Merge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Merge v/c ratio		
Merge Density		
Merge LOS		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Diverge Influence Area Operations		
Effective v_P (pcph)		
Up Ramp L_{EQ}		
Down Ramp L_{EQ}		
P_{FD} (Eqn 13-9)		
P_{FD} (Eqn 13-10)		
P_{FD} (Eqn 13-11)		
P_{FD}		
v_{12} (pcph)		
v_3 (pcph)		
v_{34} (pcph)		
v_{12a} (pcph)		
Diverge Speed Index		
Diverge Area Speed		
Outer Lanes Volume		
Outer Lanes Speed		
Segment Speed		
Diverge v/c ratio		
Diverge Density		
Diverge LOS		
**Calculate On Ramp to Off Ramp Flow Rate for **		
On to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to Off Flow (pcph)		
Calculate On Ramp to Mainline Flow Rate for W		
On to ML Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
On to ML Flow (pcph)		

Location		26

Key

<> Express Lane (HOV)

No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Mainline to Off Ramp Flow Rate for W		
ML to Off Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
ML to Off Flow (pcph)		
Calculate General Purpose Lanes to General Pu		
GP to GP Volume (vph)		
PHF		
Terrain		
Grade %		
Grade Length (mi)		
Truck & Bus %		
RV %		
E_T		
E_R		
f_{HV}		
f_P		
GP to GP Flow (pcph)		

Location		26

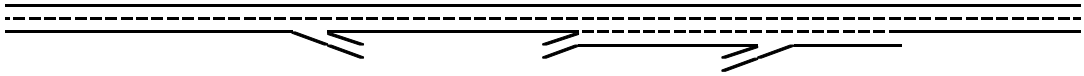
Key

<> Express Lane (HOV)

No Trucks

Name	Ramp	Ferrari Ranch Rd to Nelson Ln
Calculate Weave Segment Operations		
Weave Type		
Weave Length		
Segment Lanes		
Weave Lanes		
Weave Flow (pcph)		
Non-Weave Flow		
Segment Flow		
Max Weave Length		
Length Check		
Ideal Weave Capacity		
f_{HV}		
f_P		
Capacity Condition 1		
Capacity Condition 2		
Weave v/c ratio		
Interchange Density		
Lane Changes On to ML		
Lane Changes ML to Off		
Lane Changes On to Off		
Min Lane Change Rate		
Weave LC Rate		
Non-Weave LC Rate 1		
Non-Weave LC Rate 2		
Non-Weave LC Rate 3		
Segment LC Rate		
Weave Intensity Factor		
Weave Speed		
Non-Weave Speed		
Segment Speed		
Weave Density		
Weave LOS		
Summarize Segment Operations		
Segment v/c ratio		0.62
Segment Density		22.3
Segment LOS		C
Over Capacity		

Location	1	2	3	4	5	6



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<> Express Lane (HOV)

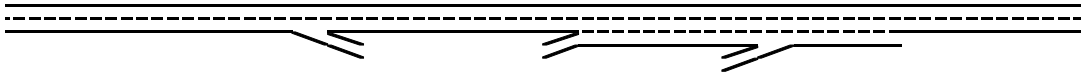
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Define Freeway Segment						
Type	Basic	Diverge	Basic	Basic	Merge	Basic
Length (ft)	8,330	1,500	1,800	1,000	1,500	870
Accel Length					720	
Decel Length		150				
Mainline Volume	2,460	2,460	2,020	2,020	3,430	4,430
On Ramp Volume				1,410	1,000	
Off Ramp Volume		440				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	2,460	2,460	2,020	3,430	4,430	4,430
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	3	3	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,615	2,615	2,148	3,647	4,710	4,710
GP Flow (pcphpl)	1,308	1,308	1,074	1,216	1,570	2,355
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.56	0.56	0.46	0.52	0.67	1.00
Speed (mph)	65.0	65.0	65.0	65.0	64.6	-
Density (pcphpl)	20.1	20.1	16.5	18.7	24.3	-
LOS	C	C	B	C	C	F
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)		2,615		2,148	3,647	
GP_{IN} Cap (pcph)		4,700		4,700	7,050	
GP_{IN} v/c ratio		0.56		0.46	0.52	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)		2,145			4,710	
GP_{OUT} Cap (pcph)		4,700			7,050	
GP_{OUT} v/c ratio		0.46			0.67	

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 Cumulative Plus Project
Time Period: 2035 AM Peak Hour

Location	1	2	3	4	5	6



Key

<> Express Lane (HOV)

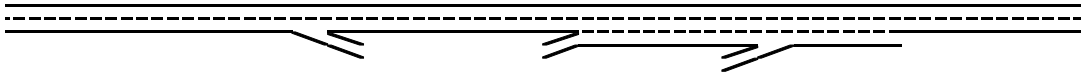
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)				1,410	1,000	
PHF				0.95	0.95	
Total Lanes				1	1	
Terrain				Level	Level	
Grade %				0.0%	0.0%	
Grade Length (mi)				0.00	0.00	
Truck & Bus %				2.0%	2.0%	
RV %				0.0%	0.0%	
E_T				1.5	1.5	
E_R				1.2	1.2	
f_{HV}				0.990	0.990	
f_P				1.00	1.00	
On Flow (pcph)				1,499	1,063	
On Flow (pcphpl)				1,499	1,063	
Calculate On Ramp Roadway Operations						
On Ramp Type				Right	Right	
On Ramp Speed (mph)				25	45	
On Ramp Cap (pcph)				1,900	2,100	
On Ramp v/c ratio				0.79	0.51	

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 Cumulative Plus Project
Time Period: 2035 AM Peak Hour

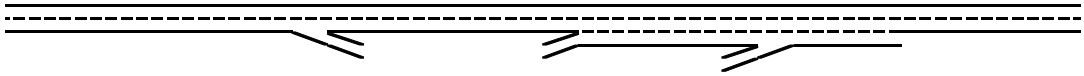
Location	1	2	3	4	5	6



Key
<> Express Lane (HOV)
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Off Ramp Flow Rate						
Off Volume (vph)		440				
PHF		0.95				
Total Lanes		1				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
Off Flow (pcph)		470				
Off Flow (pcphpl)		470				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		2,100				
Off Ramp v/c ratio		0.22				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type					On	
Up Distance					1,000	
Up Flow (pcph)					1,499	
Down Type					No	
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)					3,647	
Up Ramp L_{EQ}					1,279	
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)					0.598	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}					0.598	
v_{12} (pcph)					2,179	
v_3 (pcph)					1,467	
v_{34} (pcph)						
v_{12a} (pcph)					2,179	
v_{R12a} (pcph)					3,243	
Merge Speed Index					0.36	
Merge Area Speed					56.8	
Outer Lanes Volume					1,467	
Outer Lanes Speed					61.5	
Segment Speed					58.2	
Merge v/c ratio					0.70	
Merge Density					25.8	
Merge LOS					C	

Location	1	2	3	4	5	6



Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)		2,615				
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)		0.673				
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}		1.000				
v_{12} (pcph)		2,615				
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)		2,615				
Diverge Speed Index		0.34				
Diverge Area Speed		57.2				
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed		57.2				
Diverge v/c ratio		0.59				
Diverge Density		25.4				
Diverge LOS		C				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	1	2	3	4	5	6

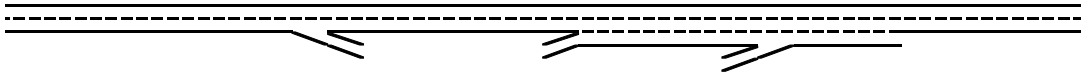
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Location	1	2	3	4	5	6



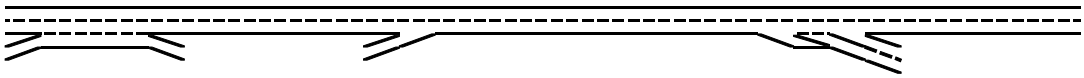
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.56	0.59	0.46	0.52	0.70	1.00
Segment Density	20.1	25.4	16.5	18.7	25.8	-
Segment LOS	C	C	B	C	C	F
Over Capacity						Segment GP Lanes

Location	7	8	9	10	11	12



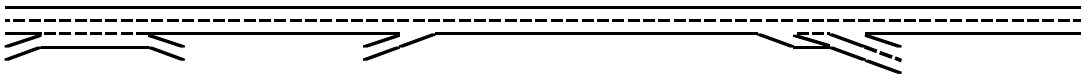
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Basic	Diverge	Basic
Length (ft)	3,050	1,120	1,500	2,210	1,500	1,830
Accel Length			450			
Decel Length					1,500	
Mainline Volume	4,430	4,110	4,110	4,430	4,430	3,770
On Ramp Volume	910		320			
Off Ramp Volume	1,230				660	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	5,340	4,110	4,430	4,430	4,430	3,770
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,677	4,370	4,710	4,710	4,710	4,008
GP Flow (pcphpl)	1,892	2,185	2,355	2,355	2,355	2,004
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.81	0.93	1.00	1.00	1.00	0.85
Speed (mph)	61.6	56.3	-	-	-	59.8
Density (pcphpl)	30.7	38.8	-	-	-	33.5
LOS	D	E	F	F	F	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,710		4,370		4,710	
GP_{IN} Cap (pcph)	4,700		4,700		4,700	
GP_{IN} v/c ratio	1.00		0.93		1.00	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	4,357		4,710		4,008	
GP_{OUT} Cap (pcph)	4,700		4,700		4,700	
GP_{OUT} v/c ratio	0.93		1.00		0.85	

Location	7	8	9	10	11	12



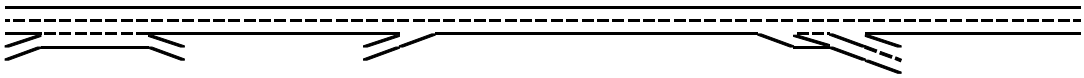
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5			
E_R	1.2	1.2	1.2			
f_{HV}	0.990	0.990	0.990			
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	910		320			
PHF	0.95		0.95			
Total Lanes	1		1			
Terrain	Level		Level			
Grade %	0.0%		0.0%			
Grade Length (mi)	0.00		0.00			
Truck & Bus %	2.0%		2.0%			
RV %	0.0%		0.0%			
E_T	1.5		1.5			
E_R	1.2		1.2			
f_{HV}	0.990		0.990			
f_P	1.00		1.00			
On Flow (pcph)	967		340			
On Flow (pcphpl)	967		340			
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right			
On Ramp Speed (mph)	45		25			
On Ramp Cap (pcph)	2,100		1,900			
On Ramp v/c ratio	0.46		0.18			

Location	7	8	9	10	11	12



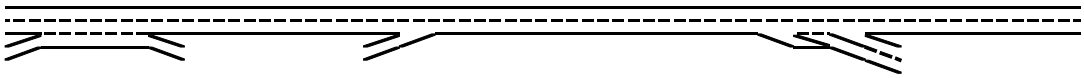
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	1,230				660	
PHF	0.95				0.95	
Total Lanes	1				2	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	4.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.980				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	1,321				702	
Off Flow (pcphpl)	1,321				351	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				4,200	
Off Ramp v/c ratio	0.63				0.17	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			4,370			
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.590			
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000			
v_{12} (pcph)			4,370			
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			4,370			
v_{R12a} (pcph)			4,710			
Merge Speed Index			-			
Merge Area Speed			-			
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Merge v/c ratio			1.02			
Merge Density			-			
Merge LOS			F			

Location	7	8	9	10	11	12



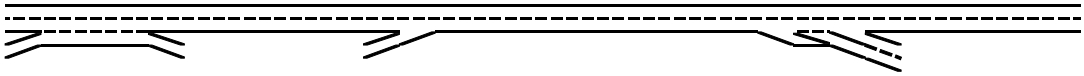
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					4,710	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.610	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					4,710	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					4,710	
Diverge Speed Index					-	
Diverge Area Speed					-	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio					1.07	
Diverge Density					-	
Diverge LOS					F	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	91					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	97					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	819					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	875					

Location	7	8	9	10	11	12



Key

<> Express Lane (HOV)

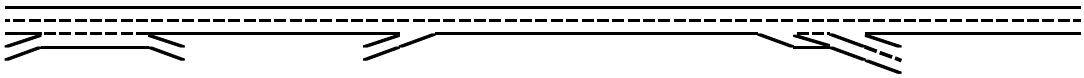
No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	1,139					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
ML to Off Flow (pcph)	1,353					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	3,291					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
GP to GP Flow (pcph)	3,910					

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 Cumulative Plus Project
Time Period: 2035 AM Peak Hour

Location	7	8	9	10	11	12



Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,050					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	2,228					
Non-Weave Flow	4,008					
Segment Flow	6,236					
Max Weave Length	6,207					
Length Check	OK					
Ideal Weave Capacity	2,032					
f_{HV}	0.989					
f_P	0.998					
Capacity Condition 1	6,018					
Capacity Condition 2	6,631					
Weave v/c ratio	1.02					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	1.02	0.93	1.02	1.00	1.07	0.85
Segment Density	-	38.8	-	-	-	33.5
Segment LOS	F	E	F	F	F	D
Over Capacity	In GP Lanes Weave		Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes	Segment GP Lanes In GP Lanes Diverge	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Define Freeway Segment						
Type	Merge	Weave	Basic	Merge	Merge	Basic
Length (ft)	690	3,344	1,280	1,310	1,500	770
Accel Length	400			500	1,450	
Decel Length						
Mainline Volume	3,770	4,240	3,510	3,510	4,030	4,560
On Ramp Volume	470	30		520	530	
Off Ramp Volume		760				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,240	4,270	3,510	4,030	4,560	4,560
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	3	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,508	4,540	3,732	4,285	4,848	4,848
GP Flow (pcphpl)	2,254	1,513	1,866	2,142	2,424	2,424
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.96	0.64	0.79	0.91	1.03	1.03
Speed (mph)	54.7	64.8	61.9	57.2	-	-
Density (pcphpl)	41.2	23.3	30.1	37.5	-	-
LOS	E	C	D	E	F	F
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,008	4,508		3,732	4,285	
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{IN} v/c ratio	0.85	0.96		0.79	0.91	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	4,508	3,732		4,285	4,848	
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{OUT} v/c ratio	0.96	0.79		0.91	1.03	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T		1.5	1.5	1.5	1.5	
E_R		1.2	1.2	1.2	1.2	
f_{HV}		0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	470	30		520	530	
PHF	0.95	0.95		0.95	0.95	
Total Lanes	1	1		1	1	
Terrain	Level	Level		Level	Level	
Grade %	0.0%	0.0%		0.0%	0.0%	
Grade Length (mi)	0.00	0.00		0.00	0.00	
Truck & Bus %	2.0%	3.0%		2.0%	2.0%	
RV %	0.0%	0.0%		0.0%	0.0%	
E_T	1.5	1.5		1.5	1.5	
E_R	1.2	1.2		1.2	1.2	
f_{HV}	0.990	0.985		0.990	0.990	
f_P	1.00	1.00		1.00	1.00	
On Flow (pcph)	500	32		553	563	
On Flow (pcphpl)	500	32		553	563	
Calculate On Ramp Roadway Operations						
On Ramp Type	Right	Right		Right	Right	
On Ramp Speed (mph)	25	45		25	45	
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100	
On Ramp v/c ratio	0.26	0.02		0.29	0.27	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)		760				
PHF		0.95				
Total Lanes		2				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		808				
Off Flow (pcphpl)		404				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		4,200				
Off Ramp v/c ratio		0.19				
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)	4,008			3,732	4,285	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)	0.589			0.592	0.618	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}	1.000			1.000	1.000	
v_{12} (pcph)	4,008			3,732	4,285	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)	4,008			3,732	4,285	
v_{R12a} (pcph)	4,508			4,285	4,848	
Merge Speed Index	0.65			0.58	-	
Merge Area Speed	49.9			51.7	-	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed	49.9			51.7		
Merge v/c ratio	0.98			0.93	1.05	
Merge Density	37.9			35.5	-	
Merge LOS	E			E	F	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)						
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)						
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}						
v_{12} (pcph)						
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)						
Diverge Speed Index						
Diverge Area Speed						
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio						
Diverge Density						
Diverge LOS						
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)		50				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to Off Flow (pcph)		53				
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)		-20				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to ML Flow (pcph)		-21				

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)		710				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
ML to Off Flow (pcph)		770				
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)		3,530				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
GP to GP Flow (pcph)		3,827				

Location	13	14	15	16	17	18

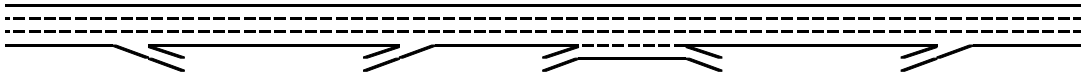
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Weave Segment Operations						
Weave Type		One-sided				
Weave Length		2,344				
Segment Lanes		3				
Weave Lanes		2				
Weave Flow (pcph)		748				
Non-Weave Flow		3,881				
Segment Flow		4,629				
Max Weave Length		4,148				
Length Check		OK				
Ideal Weave Capacity		2,212				
f_{HV}		0.971				
f_P		1.000				
Capacity Condition 1		6,444				
Capacity Condition 2		14,414				
Weave v/c ratio		0.70				
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.98	0.70	0.79	0.93	1.05	1.03
Segment Density	37.9		30.1	35.5	-	-
Segment LOS	E		D	E	F	F
Over Capacity					Segment GP Lanes Out GP Lanes Merge	Segment GP Lanes

Location	19	20	21	22	23	24



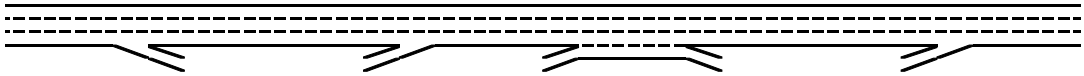
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Define Freeway Segment						
Type	Diverge	Basic	Merge	Weave	Basic	Merge
Length (ft)	1,500	1,680	1,000	3,140	1,610	1,180
Accel Length			380			550
Decel Length	200					
Mainline Volume	4,560	3,670	3,670	4,070	4,570	4,570
On Ramp Volume			400	1,590		530
Off Ramp Volume	890			1,090		
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,560	3,670	4,070	5,660	4,570	5,100
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	4	3	3
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	4.2%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.979	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,848	3,902	4,327	6,083	4,859	5,422
GP Flow (pcphpl)	1,616	1,301	1,442	1,521	1,620	1,807
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.69	0.55	0.61	0.65	0.69	0.77
Speed (mph)	64.3	65.0	65.0	64.8	64.3	62.6
Density (pcphpl)	25.1	20.0	22.2	23.5	25.2	28.9
LOS	C	C	C	C	C	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,848		3,902	4,371		4,859
GP_{IN} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{IN} v/c ratio	0.69		0.55	0.62		0.69
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,891		4,327	4,924		5,422
GP_{OUT} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{OUT} v/c ratio	0.55		0.61	0.70		0.77

Location	19	20	21	22	23	24



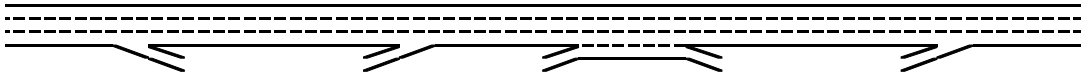
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)			400	1,590		530
PHF			0.95	0.95		0.95
Total Lanes			1	1		1
Terrain			Level	Level		Level
Grade %			0.0%	0.0%		0.0%
Grade Length (mi)			0.00	0.00		0.00
Truck & Bus %			2.0%	4.6%		2.0%
RV %			0.0%	0.0%		0.0%
E_T			1.5	1.5		1.5
E_R			1.2	1.2		1.2
f_{HV}			0.990	0.978		0.990
f_P			1.00	1.00		1.00
On Flow (pcph)			425	1,712		563
On Flow (pcphpl)			425	1,712		563
Calculate On Ramp Roadway Operations						
On Ramp Type			Right	Right		Right
On Ramp Speed (mph)			25	45		25
On Ramp Cap (pcph)			1,900	2,100		1,900
On Ramp v/c ratio			0.22	0.82		0.30

Location	19	20	21	22	23	24



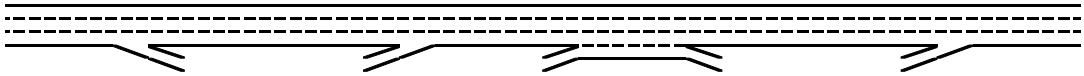
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	890			1,090		
PHF	0.95			0.95		
Total Lanes	1			1		
Terrain	Level			Level		
Grade %	0.0%			0.0%		
Grade Length (mi)	0.00			0.00		
Truck & Bus %	4.2%			2.0%		
RV %	0.0%			0.0%		
E_T	1.5			1.5		
E_R	1.2			1.2		
f_{HV}	0.979			0.990		
f_P	1.00			1.00		
Off Flow (pcph)	957			1,159		
Off Flow (pcphpl)	957			1,159		
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right			Right		
Off Ramp Speed	45			45		
Off Ramp Cap (pcph)	2,100			2,100		
Off Ramp v/c ratio	0.46			0.55		
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type	No		Off			No
Up Distance			1,680			
Up Flow (pcph)			957			
Down Type	On		No			On
Down Distance	1,500					1,180
Down Flow (pcph)	425					851
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,902			4,859
Up Ramp L_{EQ}			0			
Down Ramp L_{EQ}						5,049
P_{FM} (Eqn 13-3)			0.588			0.593
P_{FM} (Eqn 13-4)			0.694			
P_{FM} (Eqn 13-5)						
P_{FM}			0.588			0.593
v_{12} (pcph)			2,295			2,881
v_3 (pcph)			1,607			1,978
v_{34} (pcph)						
v_{12a} (pcph)			2,295			2,881
v_{R12a} (pcph)			2,720			3,444
Merge Speed Index			0.36			0.42
Merge Area Speed			56.7			55.4
Outer Lanes Volume			1,607			1,978
Outer Lanes Speed			61.0			59.7
Segment Speed			58.2			56.9
Merge v/c ratio			0.59			0.75
Merge Density			24.1			28.6
Merge LOS			C			D

Location	19	20	21	22	23	24



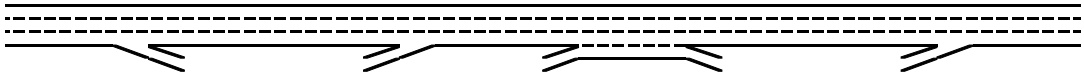
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)	4,848					
Up Ramp L_{EQ}						
Down Ramp L_{EQ}	662					
P_{FD} (Eqn 13-9)	0.595					
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}	0.595					
v_{12} (pcph)	3,271					
v_3 (pcph)	1,577					
v_{34} (pcph)						
v_{12a} (pcph)	3,271					
Diverge Speed Index	0.38					
Diverge Area Speed	56.2					
Outer Lanes Volume	1,577					
Outer Lanes Speed	69.1					
Segment Speed	59.8					
Diverge v/c ratio	0.74					
Diverge Density	30.6					
Diverge LOS	D					
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)				159		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to Off Flow (pcph)				170		
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)				1,431		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to ML Flow (pcph)				1,529		

Location	19	20	21	22	23	24



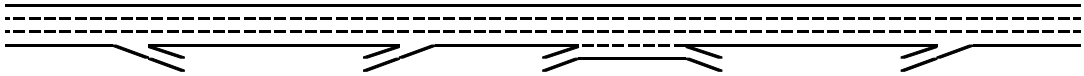
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)				931		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
ML to Off Flow (pcph)				1,009		
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)				3,139		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
GP to GP Flow (pcph)				3,403		

Location	19	20	21	22	23	24



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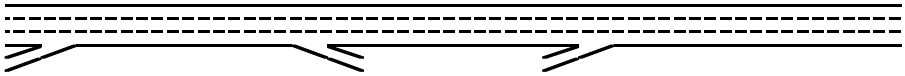
<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Weave Segment Operations						
Weave Type				One-sided		
Weave Length				2,140		
Segment Lanes				4		
Weave Lanes				2		
Weave Flow (pcph)				2,538		
Non-Weave Flow				3,573		
Segment Flow				6,112		
Max Weave Length				6,854		
Length Check				OK		
Ideal Weave Capacity				1,989		
f_{HV}				0.975		
f_P				0.996		
Capacity Condition 1				7,729		
Capacity Condition 2				5,612		
Weave v/c ratio				1.06		
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.74	0.55	0.59	1.06	0.69	0.75
Segment Density	30.6	20.0	24.1	-	25.2	28.6
Segment LOS	D	C	C	F	C	D
Over Capacity				Weave		

Location	25	26	27	28	29



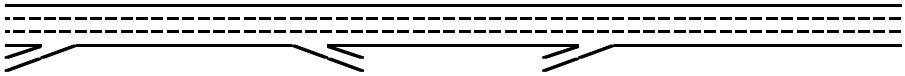
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segment					
Type	Merge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	1,500	2,830	1,500	750
Accel Length	580			590	
Decel Length		140			
Mainline Volume	5,100	5,900	4,830	4,830	5,580
On Ramp Volume	800			750	
Off Ramp Volume		1,070			
Express Lane Volume					
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP					
GP Volume (vph)	5,900	5,900	4,830	5,580	5,580
PHF	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	6,273	6,273	5,135	5,932	5,932
GP Flow (pcphpl)	2,091	2,091	1,712	1,977	1,977
Calculate Speed in General Purpose Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calculated FFS					
Measured FFS					
FFS Curve	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.89	0.89	0.73	0.84	0.84
Speed (mph)	58.2	58.2	63.6	60.3	60.3
Density (pcphpl)	35.9	35.9	26.9	32.8	32.8
LOS	E	E	D	D	D
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)	5,422	6,273		5,135	
GP_{IN} Cap (pcph)	7,050	7,050		7,050	
GP_{IN} v/c ratio	0.77	0.89		0.73	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	6,273	5,135		5,932	
GP_{OUT} Cap (pcph)	7,050	7,050		7,050	
GP_{OUT} v/c ratio	0.89	0.73		0.84	

Location	25	26	27	28	29



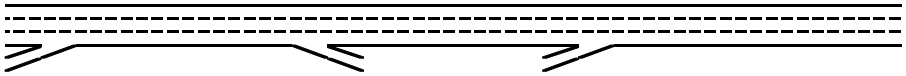
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)					
PHF					
Express Lanes	0	0	0	0	0
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P					
EL Flow (pcph)					
EL Flow (pcphpl)					
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS					
FFS					
	io				
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio					
Calculate On Ramp Flow Rate					
On Volume (vph)	800			750	
PHF	0.95			0.95	
Total Lanes	1			1	
Terrain	Level			Level	
Grade %	0.0%			0.0%	
Grade Length (mi)	0.00			0.00	
Truck & Bus %	2.0%			2.0%	
RV %	0.0%			0.0%	
E_T	1.5			1.5	
E_R	1.2			1.2	
f_{HV}	0.990			0.990	
f_P	1.00			1.00	
On Flow (pcph)	851			797	
On Flow (pcphpl)	851			797	
Calculate On Ramp Roadway Operations					
On Ramp Type	Right			Right	
On Ramp Speed (mph)	45			45	
On Ramp Cap (pcph)	2,100			2,100	
On Ramp v/c ratio	0.41			0.38	

Location	25	26	27	28	29



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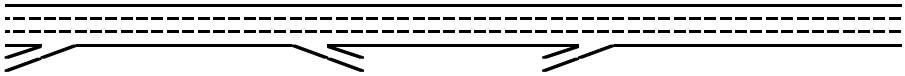
<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flow Rate					
Off Volume (vph)		1,070			
PHF		0.95			
Total Lanes		1			
Terrain		Level			
Grade %		0.0%			
Grade Length (mi)		0.00			
Truck & Bus %		2.0%			
RV %		0.0%			
E_T		1.5			
E_R		1.2			
f_{HV}		0.990			
f_P		1.00			
Off Flow (pcph)		1,138			
Off Flow (pcphpl)		1,138			
Calculate Off Ramp Roadway Operations					
Off Ramp Type		Right			
Off Ramp Speed		45			
Off Ramp Cap (pcph)		2,100			
Off Ramp v/c ratio		0.54			
Determine Adjacent Ramp for Three-Lane Mainline					
Up Type	On	On		Off	
Up Distance	1,180	3,000		2,830	
Up Flow (pcph)	563	851		1,138	
Down Type	Off	On		No	
Down Distance	3,000	2,830			
Down Flow (pcph)	1,138	797			
Calculate Merge Influence Area Operations					
Effective v_P (pcph)	5,422			5,135	
Up Ramp L_{EQ}	1,551			1,483	
Down Ramp L_{EQ}	6,627				
P_{FM} (Eqn 13-3)	0.594			0.594	
P_{FM} (Eqn 13-4)				0.679	
P_{FM} (Eqn 13-5)	0.648				
P_{FM}	0.648			0.594	
v_{12} (pcph)	3,515			3,050	
v_3 (pcph)	1,907			2,085	
v_{34} (pcph)					
v_{12a} (pcph)	3,515			3,050	
v_{R12a} (pcph)	4,366			3,848	
Merge Speed Index	0.58			0.45	
Merge Area Speed	51.8			54.6	
Outer Lanes Volume	1,907			2,085	
Outer Lanes Speed	59.9			59.3	
Segment Speed	54.0			56.2	
Merge v/c ratio	0.95			0.84	
Merge Density	35.5			31.4	
Merge LOS	E			D	

Location	25	26	27	28	29



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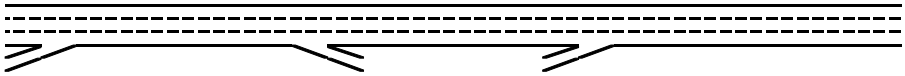
<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)		6,273			
Up Ramp L_{EQ}		6,603			
Down Ramp L_{EQ}		1,506			
P_{FD} (Eqn 13-9)		0.551			
P_{FD} (Eqn 13-10)		0.551			
P_{FD} (Eqn 13-11)					
P_{FD}		0.551			
v_{12} (pcph)		3,966			
v_3 (pcph)		2,306			
v_{34} (pcph)					
v_{12a} (pcph)		3,966			
Diverge Speed Index		0.40			
Diverge Area Speed		55.8			
Outer Lanes Volume		2,306			
Outer Lanes Speed		66.2			
Segment Speed		59.2			
Diverge v/c ratio		0.90			
Diverge Density		37.1			
Diverge LOS		E			
Calculate On Ramp to Off Ramp Flow Rate for Wea					
On to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to Off Flow (pcph)					
Calculate On Ramp to Mainline Flow Rate for Weav					
On to ML Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to ML Flow (pcph)					

Location	25	26	27	28	29



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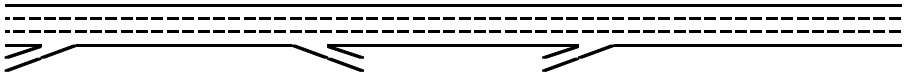
<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to Off Ramp Flow Rate for Weav					
ML to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
ML to Off Flow (pcph)					
Calculate General Purpose Lanes to General Purpo					
GP to GP Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
GP to GP Flow (pcph)					

Location	25	26	27	28	29



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<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segment Operations					
Weave Type					
Weave Length					
Segment Lanes					
Weave Lanes					
Weave Flow (pcph)					
Non-Weave Flow					
Segment Flow					
Max Weave Length					
Length Check					
Ideal Weave Capacity					
f_{HV}					
f_P					
Capacity Condition 1					
Capacity Condition 2					
Weave v/c ratio					
Interchange Density					
Lane Changes On to ML					
Lane Changes ML to Off					
Lane Changes On to Off					
Min Lane Change Rate					
Weave LC Rate					
Non-Weave LC Rate 1					
Non-Weave LC Rate 2					
Non-Weave LC Rate 3					
Segment LC Rate					
Weave Intensity Factor					
Weave Speed					
Non-Weave Speed					
Segment Speed					
Weave Density					
Weave LOS					
Summarize Segment Operations					
Segment v/c ratio	0.95	0.90	0.73	0.84	0.84
Segment Density	35.5	37.1	26.9	31.4	32.8
Segment LOS	E	E	D	D	D
Over Capacity					

Location	1	2	3	4	5	6

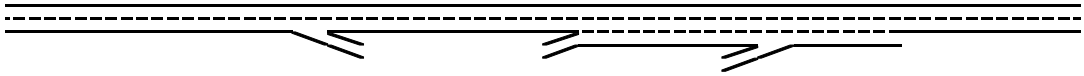
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Define Freeway Segment						
Type	Basic	Diverge	Basic	Basic	Merge	Basic
Length (ft)	8,330	1,500	1,800	1,000	1,500	870
Accel Length					720	
Decel Length		150				
Mainline Volume	1,790	1,790	1,350	1,350	2,500	2,710
On Ramp Volume				1,150	210	
Off Ramp Volume		440				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP)						
GP Volume (vph)	1,790	1,790	1,350	2,500	2,710	2,710
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	2	2	3	3	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	1,903	1,903	1,435	2,658	2,881	2,881
GP Flow (pcphpl)	952	952	718	886	960	1,441
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.40	0.40	0.31	0.38	0.41	0.61
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	14.6	14.6	11.0	13.6	14.8	22.2
LOS	B	B	B	B	B	C
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)		1,903		1,435	2,658	
GP_{IN} Cap (pcph)		4,700		4,700	7,050	
GP_{IN} v/c ratio		0.40		0.31	0.38	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)		1,435			2,881	
GP_{OUT} Cap (pcph)		4,700			7,050	
GP_{OUT} v/c ratio		0.31			0.41	

Location	1	2	3	4	5	6



Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	
E_R	1.2	1.2	1.2	1.2	1.2	
f_{HV}	0.990	0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)				1,150	210	
PHF				0.95	0.95	
Total Lanes				1	1	
Terrain				Level	Level	
Grade %				0.0%	0.0%	
Grade Length (mi)				0.00	0.00	
Truck & Bus %				2.0%	2.0%	
RV %				0.0%	0.0%	
E_T				1.5	1.5	
E_R				1.2	1.2	
f_{HV}				0.990	0.990	
f_P				1.00	1.00	
On Flow (pcph)				1,223	223	
On Flow (pcphpl)				1,223	223	
Calculate On Ramp Roadway Operations						
On Ramp Type				Right	Right	
On Ramp Speed (mph)				25	45	
On Ramp Cap (pcph)				1,900	2,100	
On Ramp v/c ratio				0.64	0.11	

Location	1	2	3	4	5	6

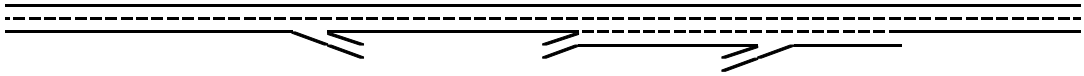
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Off Ramp Flow Rate						
Off Volume (vph)		440				
PHF		0.95				
Total Lanes		1				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		468				
Off Flow (pcphpl)		468				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		2,100				
Off Ramp v/c ratio		0.22				
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps						
Up Type					On	
Up Distance					1,000	
Up Flow (pcph)					1,223	
Down Type					No	
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)					2,658	
Up Ramp L_{EQ}					888	
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)					0.598	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}					0.598	
v_{12} (pcph)					1,589	
v_3 (pcph)					1,069	
v_{34} (pcph)						
v_{12a} (pcph)					1,589	
v_{R12a} (pcph)					1,812	
Merge Speed Index					0.28	
Merge Area Speed					58.6	
Outer Lanes Volume					1,069	
Outer Lanes Speed					63.0	
Segment Speed					60.1	
Merge v/c ratio					0.39	
Merge Density					15.0	
Merge LOS					B	

Location	1	2	3	4	5	6



Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)		1,903				
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)		0.691				
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}		1.000				
v_{12} (pcph)		1,903				
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)		1,903				
Diverge Speed Index		0.34				
Diverge Area Speed		57.2				
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed		57.2				
Diverge v/c ratio		0.43				
Diverge Density		19.3				
Diverge LOS		B				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments						
On to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to Off Flow (pcph)						
Calculate On Ramp to Mainline Flow Rate for Weave Segments						
On to ML Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
On to ML Flow (pcph)						

Location	1	2	3	4	5	6

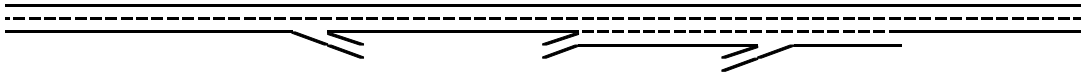
Key

<> Express Lane (HOV)

No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Mainline to Off Ramp Flow Rate for Weave Segments						
ML to Off Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
ML to Off Flow (pcph)						
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments						
GP to GP Volume (vph)						
PHF						
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T						
E_R						
f_{HV}						
f_P						
GP to GP Flow (pcph)						

Location	1	2	3	4	5	6



Key

<> Express Lane (HOV)

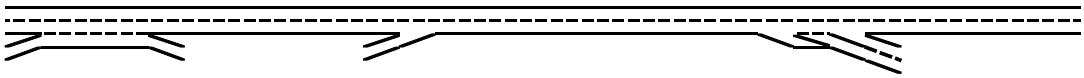
No Trucks

Name	Nelson Ln to Ferrari Ranch Rd	Ferrari Ranch Rd Off-ramp	Ferrari Ranch Rd Off to On Ramp	Ferrari Ranch Rd Loop On Ramp	Ferrari Ranch Rd Direct On Ramp	Ferrari Ranch Rd to Lincoln Blvd
Calculate Weave Segment Operations						
Weave Type						
Weave Length						
Segment Lanes						
Weave Lanes						
Weave Flow (pcph)						
Non-Weave Flow						
Segment Flow						
Max Weave Length						
Length Check						
Ideal Weave Capacity						
f_{HV}						
f_P						
Capacity Condition 1						
Capacity Condition 2						
Weave v/c ratio						
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.40	0.43	0.31	0.38	0.39	0.61
Segment Density	14.6	19.3	11.0	13.6	15.0	22.2
Segment LOS	B	B	B	B	B	C
Over Capacity						

Project: Amoruso Ranch EIR
Freeway Corridor: SB SR-65

2035 Cumulative Plus Project
Time Period: 2035 PM Peak Hour

Location	7	8	9	10	11	12



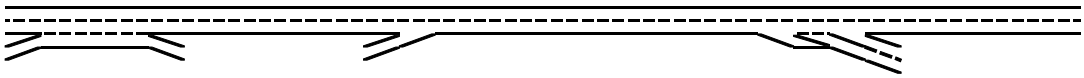
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Define Freeway Segment						
Type	Weave	Basic	Merge	Basic	Diverge	Basic
Length (ft)	3,050	1,120	1,500	2,210	1,500	1,830
Accel Length			450			
Decel Length					1,500	
Mainline Volume	2,710	3,260	3,260	4,110	4,110	3,120
On Ramp Volume	1,070		850			
Off Ramp Volume	520				990	
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,780	3,260	4,110	4,110	4,110	3,120
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,019	3,466	4,370	4,370	4,370	3,317
GP Flow (pcphpl)	1,340	1,733	2,185	2,185	2,185	1,659
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.57	0.74	0.93	0.93	0.93	0.71
Speed (mph)	65.0	63.4	56.3	56.3	56.3	64.1
Density (pcphpl)	20.6	27.3	38.8	38.8	38.8	25.9
LOS	C	D	E	E	E	C
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	2,876		3,466		4,370	
GP_{IN} Cap (pcph)	4,700		4,700		4,700	
GP_{IN} v/c ratio	0.61		0.74		0.93	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,466		4,370		3,317	
GP_{OUT} Cap (pcph)	4,700		4,700		4,700	
GP_{OUT} v/c ratio	0.74		0.93		0.71	

Location	7	8	9	10	11	12



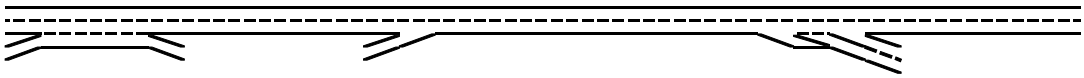
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5			
E_R	1.2	1.2	1.2			
f_{HV}	0.990	0.990	0.990			
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	1,070		850			
PHF	0.95		0.95			
Total Lanes	1		1			
Terrain	Level		Level			
Grade %	0.0%		0.0%			
Grade Length (mi)	0.00		0.00			
Truck & Bus %	3.0%		2.0%			
RV %	0.0%		0.0%			
E_T	1.5		1.5			
E_R	1.2		1.2			
f_{HV}	0.985		0.990			
f_P	1.00		1.00			
On Flow (pcph)	1,143		904			
On Flow (pcphpl)	1,143		904			
Calculate On Ramp Roadway Operations						
On Ramp Type	Right		Right			
On Ramp Speed (mph)	45		25			
On Ramp Cap (pcph)	2,100		1,900			
On Ramp v/c ratio	0.54		0.48			

Location	7	8	9	10	11	12



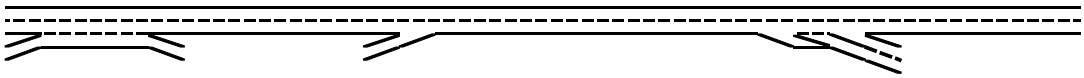
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	520				990	
PHF	0.95				0.95	
Total Lanes	1				2	
Terrain	Level				Level	
Grade %	0.0%				0.0%	
Grade Length (mi)	0.00				0.00	
Truck & Bus %	2.0%				2.0%	
RV %	0.0%				0.0%	
E_T	1.5				1.5	
E_R	1.2				1.2	
f_{HV}	0.990				0.990	
f_P	1.00				1.00	
Off Flow (pcph)	553				1,053	
Off Flow (pcphpl)	553				526	
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right				Right	
Off Ramp Speed	45				45	
Off Ramp Cap (pcph)	2,100				4,200	
Off Ramp v/c ratio	0.26				0.25	
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,466			
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)			0.590			
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}			1.000			
v_{12} (pcph)			3,466			
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)			3,466			
v_{R12a} (pcph)			4,370			
Merge Speed Index			0.61			
Merge Area Speed			51.0			
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed			51.0			
Merge v/c ratio			0.95			
Merge Density			36.3			
Merge LOS			E			

Location	7	8	9	10	11	12



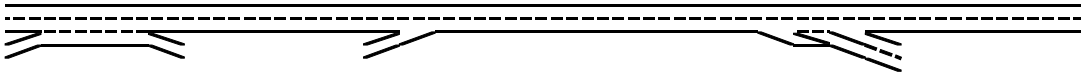
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)					4,370	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)					0.602	
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}					1.000	
v_{12} (pcph)					4,370	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)					4,370	
Diverge Speed Index					0.39	
Diverge Area Speed					56.0	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed					56.0	
Diverge v/c ratio					0.99	
Diverge Density					28.3	
Diverge LOS					D	
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)	107					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to Off Flow (pcph)	114					
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)	963					
PHF	0.95					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	3.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.985					
f_P	1.00					
On to ML Flow (pcph)	1,029					

Location	7	8	9	10	11	12



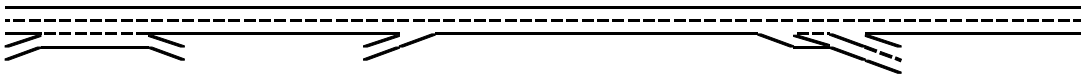
Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)	413					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
ML to Off Flow (pcph)	491					
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)	2,297					
PHF	0.85					
Terrain	Level					
Grade %	0.0%					
Grade Length (mi)	0.00					
Truck & Bus %	2.0%					
RV %	0.0%					
E_T	1.5					
E_R	1.2					
f_{HV}	0.990					
f_P	1.00					
GP to GP Flow (pcph)	2,729					

Location	7	8	9	10	11	12



Key

<> Express Lane (HOV)

No Trucks

Name	Lincoln Blvd On Ramp to Twelve Bridges Off	Twelve Bridges Off to On Ramp	Twelve Bridges Loop On Ramp	Twelve Bridges to Placer Pkwy	Placer Pkwy off-ramp	Placer Pkwy off to on-ramp
Calculate Weave Segment Operations						
Weave Type	One-sided					
Weave Length	2,050					
Segment Lanes	3					
Weave Lanes	2					
Weave Flow (pcph)	1,520					
Non-Weave Flow	2,844					
Segment Flow	4,363					
Max Weave Length	6,107					
Length Check	OK					
Ideal Weave Capacity	2,040					
f_{HV}	0.989					
f_P	0.997					
Capacity Condition 1	6,029					
Capacity Condition 2	6,790					
Weave v/c ratio	0.71					
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.71	0.74	0.95	0.93	0.99	0.71
Segment Density		27.3	36.3	38.8	28.3	25.9
Segment LOS		D	E	E	D	C
Over Capacity						

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Define Freeway Segment						
Type	Merge	Weave	Basic	Merge	Merge	Basic
Length (ft)	690	3,344	1,280	1,310	1,500	770
Accel Length	400			500	1,450	
Decel Length						
Mainline Volume	3,120	3,660	3,190	3,190	3,830	4,220
On Ramp Volume	540	300		640	390	
Off Ramp Volume		770				
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	3,660	3,960	3,190	3,830	4,220	4,220
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	2	3	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,891	4,210	3,391	4,072	4,487	4,487
GP Flow (pcphpl)	1,946	1,403	1,696	2,036	2,243	2,243
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.83	0.60	0.72	0.87	0.95	0.95
Speed (mph)	60.8	65.0	63.8	59.3	54.9	54.9
Density (pcphpl)	32.0	21.6	26.6	34.4	40.8	40.8
LOS	D	C	D	D	E	E
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	3,317	3,891		3,391	4,072	
GP_{IN} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{IN} v/c ratio	0.71	0.83		0.72	0.87	
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,891	3,391		4,072	4,487	
GP_{OUT} Cap (pcph)	4,700	4,700		4,700	4,700	
GP_{OUT} v/c ratio	0.83	0.72		0.87	0.95	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T		1.5	1.5	1.5	1.5	
E_R		1.2	1.2	1.2	1.2	
f_{HV}		0.990	0.990	0.990	0.990	
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)	540	300		640	390	
PHF	0.95	0.95		0.95	0.95	
Total Lanes	1	1		1	1	
Terrain	Level	Level		Level	Level	
Grade %	0.0%	0.0%		0.0%	0.0%	
Grade Length (mi)	0.00	0.00		0.00	0.00	
Truck & Bus %	2.0%	2.0%		2.0%	2.0%	
RV %	0.0%	0.0%		0.0%	0.0%	
E_T	1.5	1.5		1.5	1.5	
E_R	1.2	1.2		1.2	1.2	
f_{HV}	0.990	0.990		0.990	0.990	
f_P	1.00	1.00		1.00	1.00	
On Flow (pcph)	574	319		680	415	
On Flow (pcphpl)	574	319		680	415	
Calculate On Ramp Roadway Operations						
On Ramp Type	Right	Right		Right	Right	
On Ramp Speed (mph)	25	45		25	45	
On Ramp Cap (pcph)	1,900	2,100		1,900	2,100	
On Ramp v/c ratio	0.30	0.15		0.36	0.20	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)		770				
PHF		0.95				
Total Lanes		2				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		2.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.990				
f_P		1.00				
Off Flow (pcph)		819				
Off Flow (pcphpl)		409				
Calculate Off Ramp Roadway Operations						
Off Ramp Type		Right				
Off Ramp Speed		45				
Off Ramp Cap (pcph)		4,200				
Off Ramp v/c ratio		0.19				
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type						
Up Distance						
Up Flow (pcph)						
Down Type						
Down Distance						
Down Flow (pcph)						
Calculate Merge Influence Area Operations						
Effective v_P (pcph)	3,317			3,391	4,072	
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FM} (Eqn 13-3)	0.589			0.592	0.618	
P_{FM} (Eqn 13-4)						
P_{FM} (Eqn 13-5)						
P_{FM}	1.000			1.000	1.000	
v_{12} (pcph)	3,317			3,391	4,072	
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)	3,317			3,391	4,072	
v_{R12a} (pcph)	3,891			4,072	4,487	
Merge Speed Index	0.49			0.52	0.54	
Merge Area Speed	53.7			52.9	52.7	
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed	53.7			52.9	52.7	
Merge v/c ratio	0.85			0.89	0.98	
Merge Density	33.1			33.8	31.2	
Merge LOS	D			D	D	

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)						
Up Ramp L_{EQ}						
Down Ramp L_{EQ}						
P_{FD} (Eqn 13-9)						
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}						
v_{12} (pcph)						
v_3 (pcph)						
v_{34} (pcph)						
v_{12a} (pcph)						
Diverge Speed Index						
Diverge Area Speed						
Outer Lanes Volume						
Outer Lanes Speed						
Segment Speed						
Diverge v/c ratio						
Diverge Density						
Diverge LOS						
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)		50				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to Off Flow (pcph)		53				
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)		250				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		3.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.985				
f_P		1.00				
On to ML Flow (pcph)		267				

Location	13	14	15	16	17	18

Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)		720				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
ML to Off Flow (pcph)		781				
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)		2,940				
PHF		0.95				
Terrain		Level				
Grade %		0.0%				
Grade Length (mi)		0.00				
Truck & Bus %		6.0%				
RV %		0.0%				
E_T		1.5				
E_R		1.2				
f_{HV}		0.971				
f_P		1.00				
GP to GP Flow (pcph)		3,188				

Location	13	14	15	16	17	18

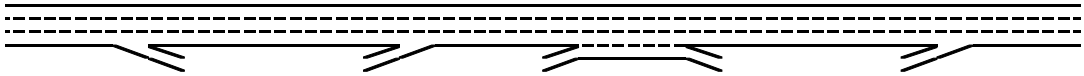
Key

<> Express Lane (HOV)

No Trucks

Name	Placer Pkwy Loop on-ramp	Placer Pkwy On to Sunset Blvd Off-Ramp	Sunset Off to On-Ramp	Sunset Loop On Ramp	Sunset Direct On-Ramp	Sunset Direct On-Ramp to Blue Oaks Blvd Off-Ramp
Calculate Weave Segment Operations						
Weave Type		One-sided				
Weave Length		2,344				
Segment Lanes		3				
Weave Lanes		2				
Weave Flow (pcph)		1,048				
Non-Weave Flow		3,241				
Segment Flow		4,289				
Max Weave Length		4,994				
Length Check		OK				
Ideal Weave Capacity		2,147				
f_{HV}		0.972				
f_P		0.999				
Capacity Condition 1		6,255				
Capacity Condition 2		9,540				
Weave v/c ratio		0.67				
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.85	0.67	0.72	0.89	0.98	0.95
Segment Density	33.1		26.6	33.8	31.2	40.8
Segment LOS	D		D	D	D	E
Over Capacity						

Location	19	20	21	22	23	24



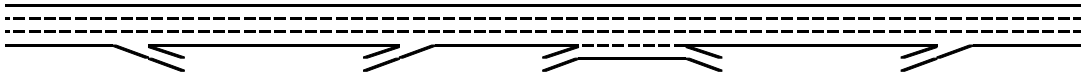
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Define Freeway Segment						
Type	Diverge	Basic	Merge	Weave	Basic	Merge
Length (ft)	1,500	1,680	1,000	3,140	1,610	1,180
Accel Length			380			550
Decel Length	200					
Mainline Volume	4,220	3,470	3,470	3,810	4,610	4,610
On Ramp Volume			340	1,690		610
Off Ramp Volume	750			890		
Express Lane Volume						
EL On Ramp Volume						
EL Off Ramp Volume						
Calculate Flow Rate in General Purpose Lanes (GP						
GP Volume (vph)	4,220	3,470	3,810	5,500	4,610	5,220
PHF	0.95	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	4	3	3
Terrain	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	4.2%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.979	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,487	3,689	4,051	5,911	4,901	5,550
GP Flow (pcphpl)	1,496	1,230	1,350	1,478	1,634	1,850
Calculate Speed in General Purpose Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calculated FFS						
Measured FFS						
FFS Curve	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes						
v/c ratio	0.64	0.52	0.57	0.63	0.70	0.79
Speed (mph)	64.9	65.0	65.0	64.9	64.2	62.1
Density (pcphpl)	23.1	18.9	20.8	22.8	25.4	29.8
LOS	C	C	C	C	C	D
Calculate Operations for Entering GP Lanes						
GP_{IN} Vol (pcph)	4,487		3,689	4,114		4,898
GP_{IN} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{IN} v/c ratio	0.64		0.52	0.58		0.69
Calculate Operations for Exiting GP Lanes						
GP_{OUT} Vol (pcph)	3,689		4,051	4,965		5,550
GP_{OUT} Cap (pcph)	7,050		7,050	7,050		7,050
GP_{OUT} v/c ratio	0.52		0.57	0.70		0.79

Location	19	20	21	22	23	24



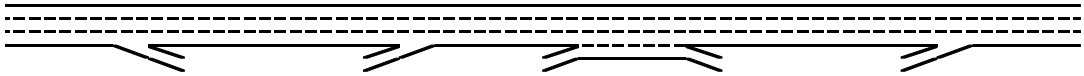
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Flow Rate in Express Lanes (EL)						
EL Volume (vph)						
PHF						
Express Lanes	0	0	0	0	0	0
Terrain						
Grade %						
Grade Length (mi)						
Truck & Bus %						
RV %						
E_T	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990
f_P						
EL Flow (pcph)						
EL Flow (pcphpl)						
Calculate Speed in Express Lanes						
Lane Width (ft)						
Shoulder Width						
TRD						
f_{LW}						
f_{LC}						
Calc'd FFS						
Measured FFS						
FFS						
Calculate Operations in Express Lanes						
EL_{IN} v/c ratio						
Calculate On Ramp Flow Rate						
On Volume (vph)			340	1,690		610
PHF			0.95	0.95		0.95
Total Lanes			1	1		1
Terrain			Level	Level		Level
Grade %			0.0%	0.0%		0.0%
Grade Length (mi)			0.00	0.00		0.00
Truck & Bus %			2.0%	2.0%		3.0%
RV %			0.0%	0.0%		0.0%
E_T			1.5	1.5		1.5
E_R			1.2	1.2		1.2
f_{HV}			0.990	0.990		0.985
f_P			1.00	1.00		1.00
On Flow (pcph)			361	1,797		652
On Flow (pcphpl)			361	1,797		652
Calculate On Ramp Roadway Operations						
On Ramp Type			Right	Right		Right
On Ramp Speed (mph)			25	45		25
On Ramp Cap (pcph)			1,900	2,100		1,900
On Ramp v/c ratio			0.19	0.86		0.34

Location	19	20	21	22	23	24



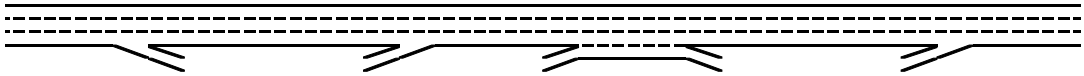
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Off Ramp Flow Rate						
Off Volume (vph)	750			890		
PHF	0.95			0.95		
Total Lanes	1			1		
Terrain	Level			Level		
Grade %	0.0%			0.0%		
Grade Length (mi)	0.00			0.00		
Truck & Bus %	2.0%			2.0%		
RV %	0.0%			0.0%		
E_T	1.5			1.5		
E_R	1.2			1.2		
f_{HV}	0.990			0.990		
f_P	1.00			1.00		
Off Flow (pcph)	797			946		
Off Flow (pcphpl)	797			946		
Calculate Off Ramp Roadway Operations						
Off Ramp Type	Right			Right		
Off Ramp Speed	45			45		
Off Ramp Cap (pcph)	2,100			2,100		
Off Ramp v/c ratio	0.38			0.45		
Determine Adjacent Ramp for Three-Lane Mainline						
Up Type	No		Off			No
Up Distance			1,680			
Up Flow (pcph)			797			
Down Type	On		No			On
Down Distance	1,500					1,180
Down Flow (pcph)	361					962
Calculate Merge Influence Area Operations						
Effective v_P (pcph)			3,689			4,898
Up Ramp L_{EQ}			-59			
Down Ramp L_{EQ}						5,708
P_{FM} (Eqn 13-3)			0.588			0.593
P_{FM} (Eqn 13-4)			0.698			
P_{FM} (Eqn 13-5)						
P_{FM}			0.588			0.593
v_{12} (pcph)			2,170			2,904
v_3 (pcph)			1,519			1,994
v_{34} (pcph)						
v_{12a} (pcph)			2,170			2,904
v_{R12a} (pcph)			2,531			3,556
Merge Speed Index			0.35			0.43
Merge Area Speed			56.9			55.1
Outer Lanes Volume			1,519			1,994
Outer Lanes Speed			61.3			59.6
Segment Speed			58.5			56.6
Merge v/c ratio			0.55			0.77
Merge Density			22.7			29.5
Merge LOS			C			D

Location	19	20	21	22	23	24



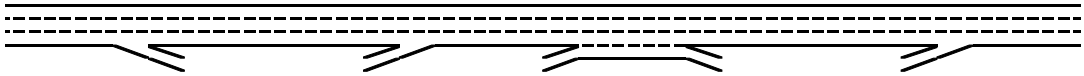
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Diverge Influence Area Operations						
Effective v_P (pcph)	4,487					
Up Ramp L_{EQ}						
Down Ramp L_{EQ}	508					
P_{FD} (Eqn 13-9)	0.611					
P_{FD} (Eqn 13-10)						
P_{FD} (Eqn 13-11)						
P_{FD}	0.611					
v_{12} (pcph)	3,052					
v_3 (pcph)	1,434					
v_{34} (pcph)						
v_{12a} (pcph)	3,052					
Diverge Speed Index	0.37					
Diverge Area Speed	56.5					
Outer Lanes Volume	1,434					
Outer Lanes Speed	69.6					
Segment Speed	60.1					
Diverge v/c ratio	0.69					
Diverge Density	28.7					
Diverge LOS	D					
Calculate On Ramp to Off Ramp Flow Rate for Wea						
On to Off Volume (vph)				169		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to Off Flow (pcph)				181		
Calculate On Ramp to Mainline Flow Rate for Weav						
On to ML Volume (vph)				1,521		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				3.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.985		
f_P				1.00		
On to ML Flow (pcph)				1,625		

Location	19	20	21	22	23	24



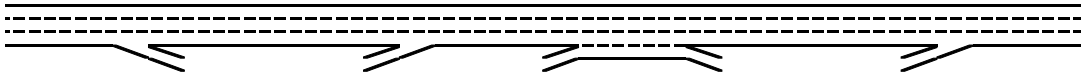
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Mainline to Off Ramp Flow Rate for Weav						
ML to Off Volume (vph)				721		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
ML to Off Flow (pcph)				782		
Calculate General Purpose Lanes to General Purpo						
GP to GP Volume (vph)				3,089		
PHF				0.95		
Terrain				Level		
Grade %				0.0%		
Grade Length (mi)				0.00		
Truck & Bus %				6.0%		
RV %				0.0%		
E_T				1.5		
E_R				1.2		
f_{HV}				0.971		
f_P				1.00		
GP to GP Flow (pcph)				3,349		

Location	19	20	21	22	23	24



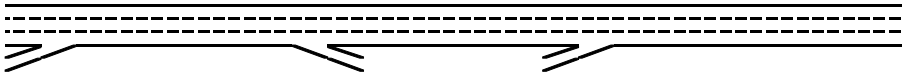
Key

<> Express Lane (HOV)

No Trucks

Name	Blue Oaks Blvd Off-Ramp	Blue Oaks Blvd Off to On-Ramp	Blue Oaks Blvd Loop On-Ramp	Blue Oaks Blvd On to Pleasant Grove Off	Pleasant Grove Off to On-Ramp	Pleasant Grove Blvd Loop On-Ramp
Calculate Weave Segment Operations						
Weave Type				One-sided		
Weave Length				2,140		
Segment Lanes				4		
Weave Lanes				2		
Weave Flow (pcph)				2,407		
Non-Weave Flow				3,530		
Segment Flow				5,936		
Max Weave Length				6,742		
Length Check				OK		
Ideal Weave Capacity				1,998		
f_{HV}				0.975		
f_P				0.996		
Capacity Condition 1				7,762		
Capacity Condition 2				5,750		
Weave v/c ratio				1.00		
Interchange Density						
Lane Changes On to ML						
Lane Changes ML to Off						
Lane Changes On to Off						
Min Lane Change Rate						
Weave LC Rate						
Non-Weave LC Rate 1						
Non-Weave LC Rate 2						
Non-Weave LC Rate 3						
Segment LC Rate						
Weave Intensity Factor						
Weave Speed						
Non-Weave Speed						
Segment Speed						
Weave Density						
Weave LOS						
Summarize Segment Operations						
Segment v/c ratio	0.69	0.52	0.55	1.00	0.70	0.77
Segment Density	28.7	18.9	22.7	-	25.4	29.5
Segment LOS	D	C	C	F	C	D
Over Capacity				Weave		

Location	25	26	27	28	29



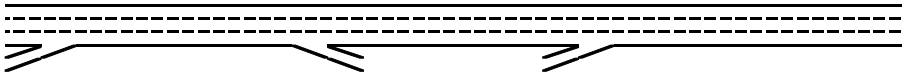
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Define Freeway Segment					
Type	Merge	Diverge	Basic	Merge	Basic
Length (ft)	1,500	1,500	2,830	1,500	750
Accel Length	580			590	
Decel Length		140			
Mainline Volume	5,220	6,120	5,270	5,270	6,450
On Ramp Volume	900			1,180	
Off Ramp Volume		850			
Express Lane Volume					
EL On Ramp Volume					
EL Off Ramp Volume					
Calculate Flow Rate in General Purpose Lanes (GP					
GP Volume (vph)	6,120	6,120	5,270	6,450	6,450
PHF	0.95	0.95	0.95	0.95	0.95
GP Lanes	3	3	3	3	3
Terrain	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	6,507	6,507	5,603	6,857	6,857
GP Flow (pcphpl)	2,169	2,169	1,868	2,286	2,286
Calculate Speed in General Purpose Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calculated FFS					
Measured FFS					
FFS Curve	65	65	65	65	65
Calculate Operations in General Purpose Lanes					
v/c ratio	0.92	0.92	0.79	0.97	0.97
Speed (mph)	56.6	56.6	61.9	53.9	53.9
Density (pcphpl)	38.3	38.3	30.2	42.4	42.4
LOS	E	E	D	E	E
Calculate Operations for Entering GP Lanes					
GP_{IN} Vol (pcph)	5,545	6,507		5,597	
GP_{IN} Cap (pcph)	7,050	7,050		7,050	
GP_{IN} v/c ratio	0.79	0.92		0.79	
Calculate Operations for Exiting GP Lanes					
GP_{OUT} Vol (pcph)	6,507	5,603		6,857	
GP_{OUT} Cap (pcph)	7,050	7,050		7,050	
GP_{OUT} v/c ratio	0.92	0.79		0.97	

Location	25	26	27	28	29



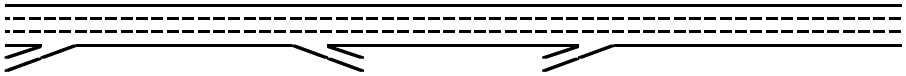
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Flow Rate in Express Lanes (EL)					
EL Volume (vph)					
PHF					
Express Lanes	0	0	0	0	0
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990
f_P					
EL Flow (pcph)					
EL Flow (pcphpl)					
Calculate Speed in Express Lanes					
Lane Width (ft)					
Shoulder Width					
TRD					
f_{LW}					
f_{LC}					
Calc'd FFS					
Measured FFS					
FFS					
Calculate Operations in Express Lanes					
EL_{IN} v/c ratio					
Calculate On Ramp Flow Rate					
On Volume (vph)	900			1,180	
PHF	0.95			0.95	
Total Lanes	1			1	
Terrain	Level			Level	
Grade %	0.0%			0.0%	
Grade Length (mi)	0.00			0.00	
Truck & Bus %	3.0%			3.0%	
RV %	0.0%			0.0%	
E_T	1.5			1.5	
E_R	1.2			1.2	
f_{HV}	0.985			0.985	
f_P	1.00			1.00	
On Flow (pcph)	962			1,261	
On Flow (pcphpl)	962			1,261	
Calculate On Ramp Roadway Operations					
On Ramp Type	Right			Right	
On Ramp Speed (mph)	45			45	
On Ramp Cap (pcph)	2,100			2,100	
On Ramp v/c ratio	0.46			0.60	

Location	25	26	27	28	29



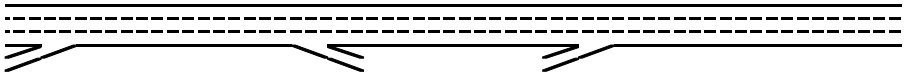
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Off Ramp Flow Rate					
Off Volume (vph)		850			
PHF		0.95			
Total Lanes		1			
Terrain		Level			
Grade %		0.0%			
Grade Length (mi)		0.00			
Truck & Bus %		2.0%			
RV %		0.0%			
E_T		1.5			
E_R		1.2			
f_{HV}		0.990			
f_P		1.00			
Off Flow (pcph)		904			
Off Flow (pcphpl)		904			
Calculate Off Ramp Roadway Operations					
Off Ramp Type		Right			
Off Ramp Speed		45			
Off Ramp Cap (pcph)		2,100			
Off Ramp v/c ratio		0.43			
Determine Adjacent Ramp for Three-Lane Mainline					
Up Type	On	On		Off	
Up Distance	1,180	3,000		2,830	
Up Flow (pcph)	652	962		904	
Down Type	Off	On		No	
Down Distance	3,000	2,830			
Down Flow (pcph)	904	1,261			
Calculate Merge Influence Area Operations					
Effective v_P (pcph)	5,545			5,597	
Up Ramp L_{EQ}	1,601			1,681	
Down Ramp L_{EQ}	5,264				
P_{FM} (Eqn 13-3)	0.594			0.594	
P_{FM} (Eqn 13-4)				0.666	
P_{FM} (Eqn 13-5)	0.628				
P_{FM}	0.628			0.594	
v_{12} (pcph)	3,481			3,325	
v_3 (pcph)	2,063			2,272	
v_{34} (pcph)					
v_{12a} (pcph)	3,481			3,325	
v_{R12a} (pcph)	4,443			4,585	
Merge Speed Index	0.60			0.65	
Merge Area Speed	51.2			50.0	
Outer Lanes Volume	2,063			2,272	
Outer Lanes Speed	59.4			58.6	
Segment Speed	53.5			52.6	
Merge v/c ratio	0.97			1.00	
Merge Density	36.1			37.0	
Merge LOS	E			E	

Location	25	26	27	28	29



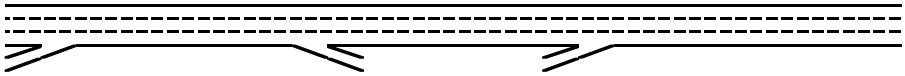
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Diverge Influence Area Operations					
Effective v_P (pcph)		6,507			
Up Ramp L_{EQ}		6,327			
Down Ramp L_{EQ}		2,072			
P_{FD} (Eqn 13-9)		0.556			
P_{FD} (Eqn 13-10)		0.556			
P_{FD} (Eqn 13-11)					
P_{FD}		0.556			
v_{12} (pcph)		4,018			
v_3 (pcph)		2,489			
v_{34} (pcph)					
v_{12a} (pcph)		4,018			
Diverge Speed Index		0.38			
Diverge Area Speed		56.3			
Outer Lanes Volume		2,489			
Outer Lanes Speed		65.5			
Segment Speed		59.5			
Diverge v/c ratio		0.91			
Diverge Density		37.5			
Diverge LOS		E			
Calculate On Ramp to Off Ramp Flow Rate for Wea					
On to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to Off Flow (pcph)					
Calculate On Ramp to Mainline Flow Rate for Weav					
On to ML Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
On to ML Flow (pcph)					

Location	25	26	27	28	29



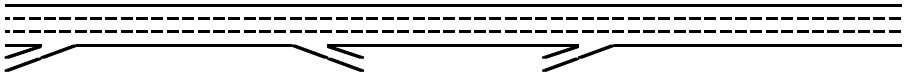
Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Mainline to Off Ramp Flow Rate for Weav					
ML to Off Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
ML to Off Flow (pcph)					
Calculate General Purpose Lanes to General Purpo					
GP to GP Volume (vph)					
PHF					
Terrain					
Grade %					
Grade Length (mi)					
Truck & Bus %					
RV %					
E_T					
E_R					
f_{HV}					
f_P					
GP to GP Flow (pcph)					

Location	25	26	27	28	29



Key

<> Express Lane (HOV)

No Trucks

Name	Pleasant Grove Blvd Slip On-Ramp	Galleria Blvd Off-Ramp	Galleria Blvd Off to On-Ramp	Galleria Blvd On-Ramp	Galleria Blvd to I-80
Calculate Weave Segment Operations					
Weave Type					
Weave Length					
Segment Lanes					
Weave Lanes					
Weave Flow (pcph)					
Non-Weave Flow					
Segment Flow					
Max Weave Length					
Length Check					
Ideal Weave Capacity					
f_{HV}					
f_P					
Capacity Condition 1					
Capacity Condition 2					
Weave v/c ratio					
Interchange Density					
Lane Changes On to ML					
Lane Changes ML to Off					
Lane Changes On to Off					
Min Lane Change Rate					
Weave LC Rate					
Non-Weave LC Rate 1					
Non-Weave LC Rate 2					
Non-Weave LC Rate 3					
Segment LC Rate					
Weave Intensity Factor					
Weave Speed					
Non-Weave Speed					
Segment Speed					
Weave Density					
Weave LOS					
Summarize Segment Operations					
Segment v/c ratio	0.97	0.91	0.79	1.00	0.97
Segment Density	36.1	37.5	30.2	37.0	42.4
Segment LOS	E	E	D	E	E
Over Capacity					

Leisch Method for Weaving Analysis

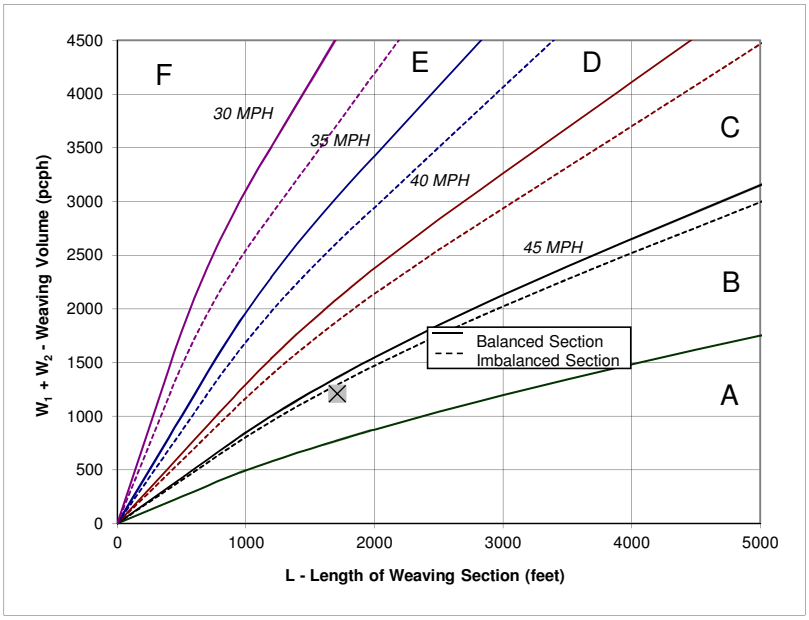
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative Plus Project AM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	2,990	Volume (vph)*	418	Volume (vph)*	768
Truck Percentage	5%	Truck Percentage	7%	Truck Percentage	3%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,057	Volume (pcph)	432	Volume (pcph)	779



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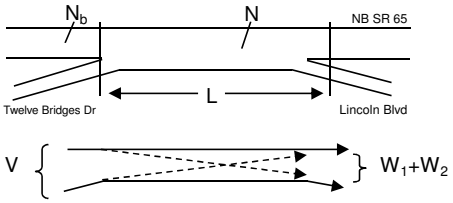


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **46.3**
4. Weaving Intensity Factor (k) **1.78**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,132**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

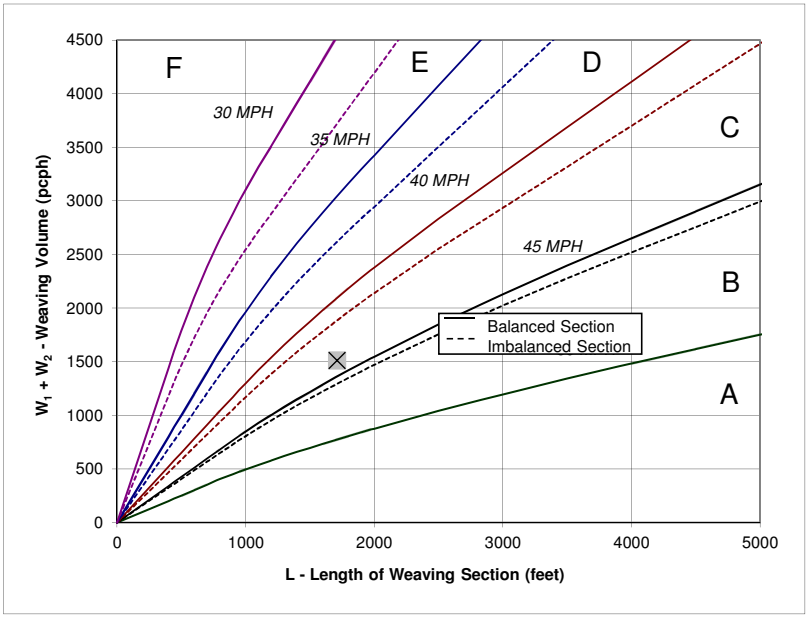
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,710

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,180	Volume (vph)*	804	Volume (vph)*	694
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,242	Volume (pcph)	812	Volume (pcph)	701

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative Plus Project PM
Freeway	NB SR 65
On-ramp	Twelve Bridges Dr
Off-ramp	Lincoln Blvd



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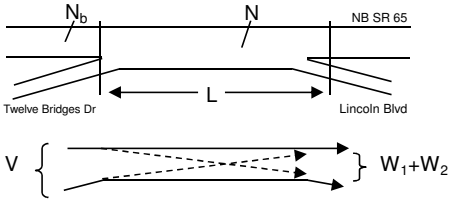


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **44.0**
4. Weaving Intensity Factor (k) **2.10**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **2,004**
6. Level of Service (LOS) **F**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

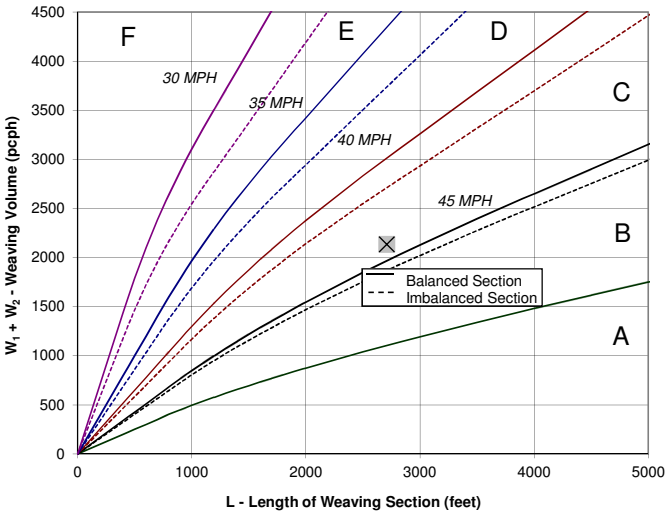
Data Input

Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,710

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,530	Volume (vph)*	386	Volume (vph)*	1,726
Truck Percentage	5%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,654	Volume (pcph)	390	Volume (pcph)	1,744

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative Plus Project AM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd



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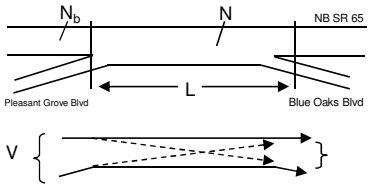


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) 44.2
4. Weaving Intensity Factor (k) 2.81
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,590
6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

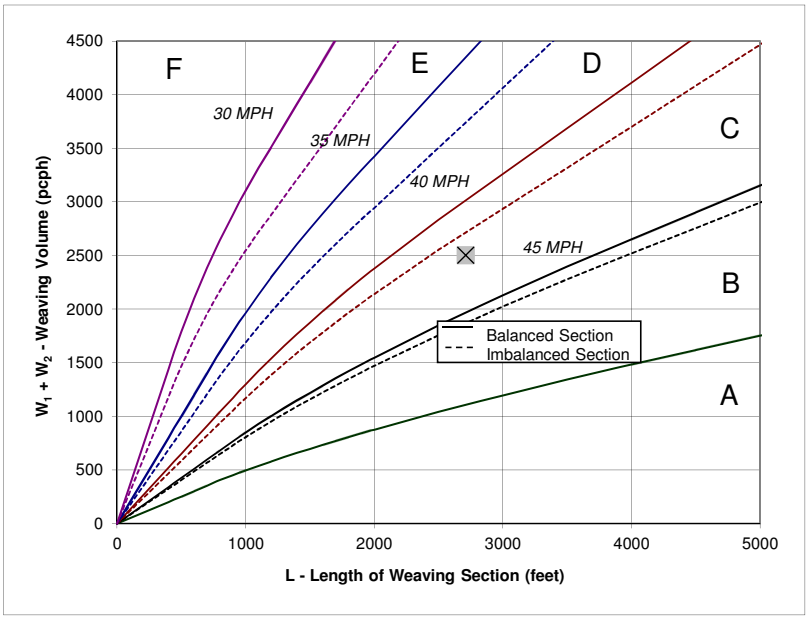
Data Input

Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,710

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,660	Volume (vph)*	819	Volume (vph)*	1,659
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,728	Volume (pcph)	827	Volume (pcph)	1,676

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative Plus Project PM
Freeway	NB SR 65
On-ramp	Pleasant Grove Blvd
Off-ramp	Blue Oaks Blvd



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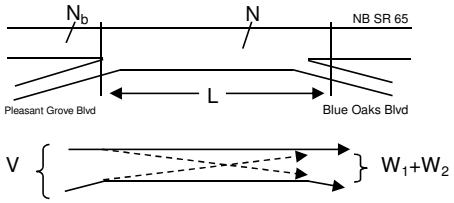


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **42.4**
4. Weaving Intensity Factor (k) **2.29**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,699**
6. Level of Service (LOS) **E**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

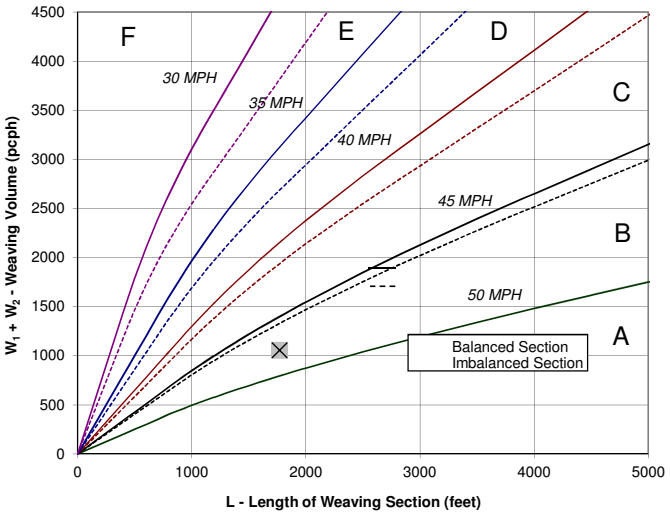
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,770

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,270	Volume (vph)*	349	Volume (vph)*	699
Truck Percentage	5%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,344	Volume (pcph)	352	Volume (pcph)	706

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative Plus Project AM
Freeway	NB SR 65
On-ramp	Sunset Blvd
Off-ramp	Placer Pkwy



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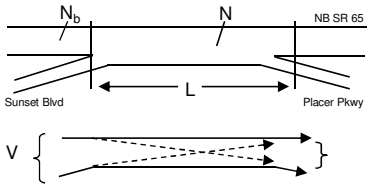


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**45 MPH** and **50 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	47.8
4. Weaving Intensity Factor (k)	1.55
5. Service Volume (SV, pcph) $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$	1,179
6. Level of Service (LOS)	C

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

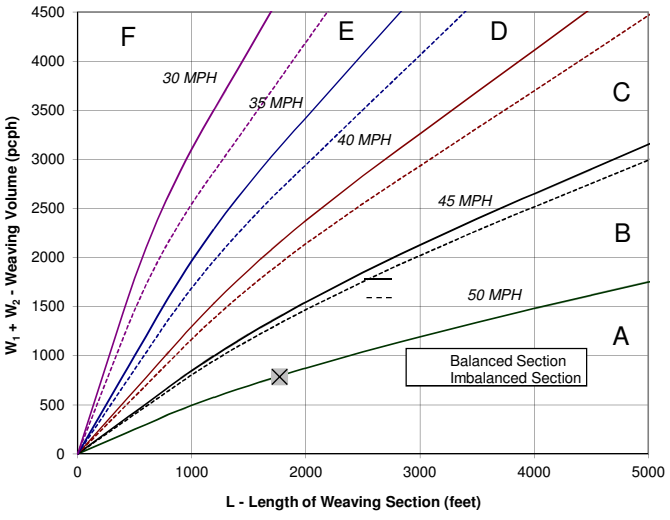
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	1,770

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,270	Volume (vph)*	440	Volume (vph)*	340
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,321	Volume (pcph)	444	Volume (pcph)	343

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 Cumulative Plus Project PM
Freeway	NB SR 65
On-ramp	Sunset Blvd
Off-ramp	Placer Pkwy



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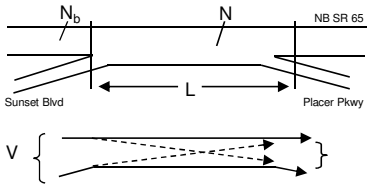


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**45MPH** and **50 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	50.1
4. Weaving Intensity Factor (k)	1.00
5. Service Volume (SV, pcph) $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$	1,440
6. Level of Service (LOS)	D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

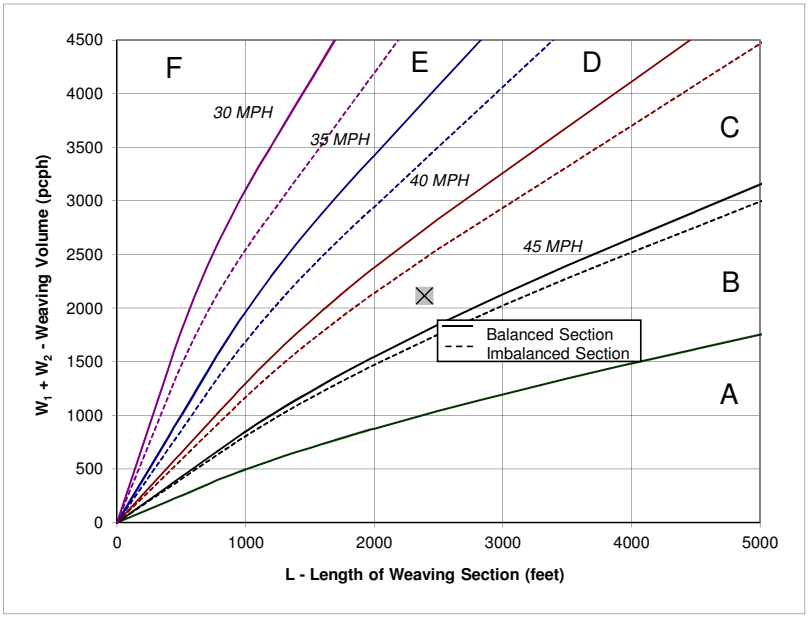
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,390

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 C+P AM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,660	Volume (vph)*	1,288	Volume (vph)*	788
Truck Percentage	2%	Truck Percentage	5%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,717	Volume (pcph)	1,318	Volume (pcph)	796



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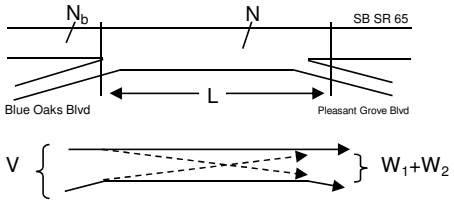


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **43.3**
4. Weaving Intensity Factor (k) **2.18**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,665**
6. Level of Service (LOS) **E**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

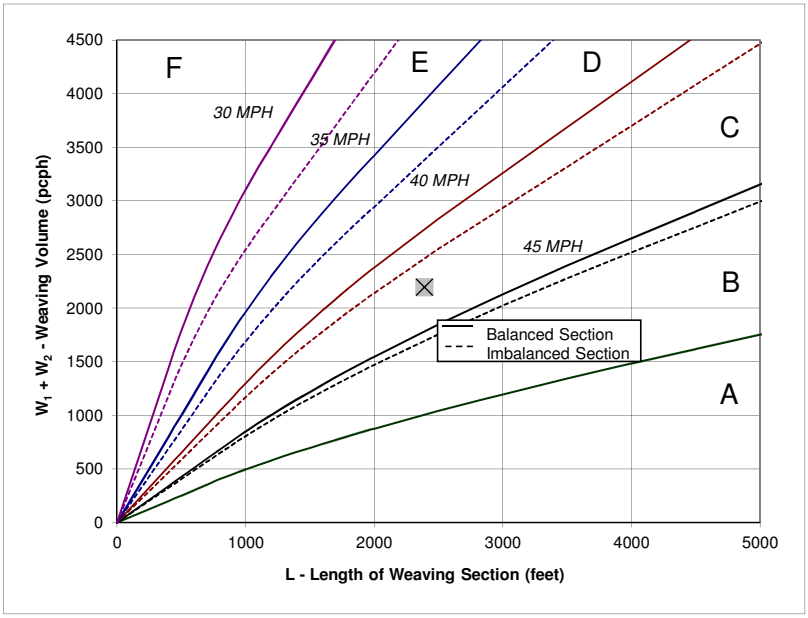
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,390

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 C+P PM
Freeway	SB SR 65
On-ramp	Blue Oaks Blvd
Off-ramp	Pleasant Grove Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,500	Volume (vph)*	1,487	Volume (vph)*	687
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,555	Volume (pcph)	1,502	Volume (pcph)	694



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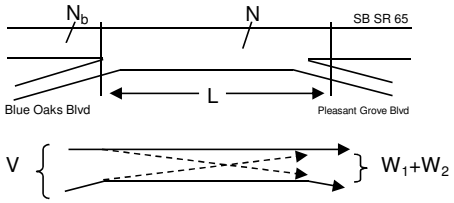


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   40 MPH and **45 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **42.8**
4. Weaving Intensity Factor (k) **2.24**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **2,140**
6. Level of Service (LOS) **F**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

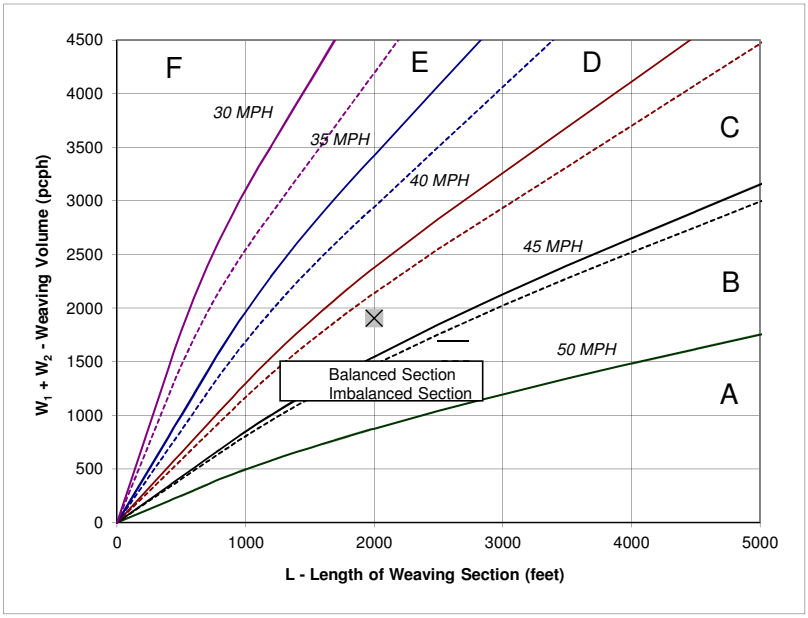
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,340	Volume (vph)*	783	Volume (vph)*	1,103
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,393	Volume (pcph)	790	Volume (pcph)	1,114

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 C+P AM
Freeway	SB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr



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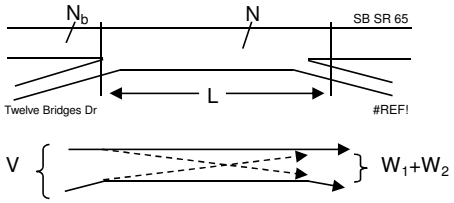


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**40 MPH** and **45 MPH**
	If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph)	42.8
4. Weaving Intensity Factor (k)	2.24
5. Service Volume (SV, pcph) $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$	2,126
6. Level of Service (LOS)	F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

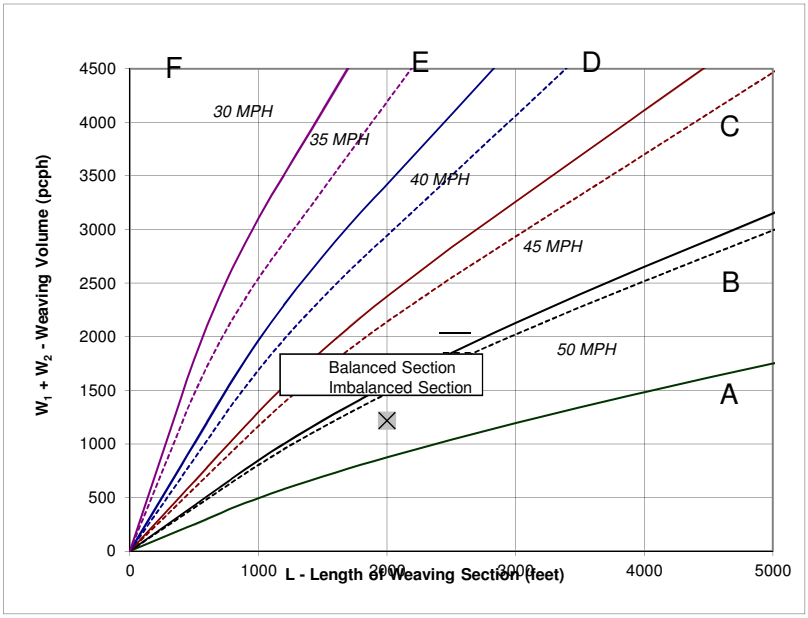
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,000

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 C+P PM
Freeway	SB SR 65
On-ramp	Lincoln Blvd
Off-ramp	Twelve Bridges Dr

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,780	Volume (vph)*	877	Volume (vph)*	327
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,818	Volume (pcph)	886	Volume (pcph)	331



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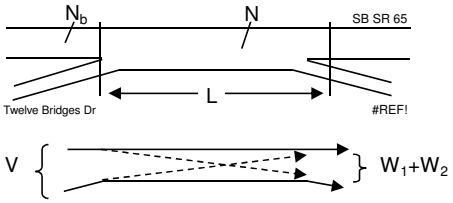


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**45 MPH** and **50 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	47.5
4. Weaving Intensity Factor (k)	1.60
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	1,339
6. Level of Service (LOS)	D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

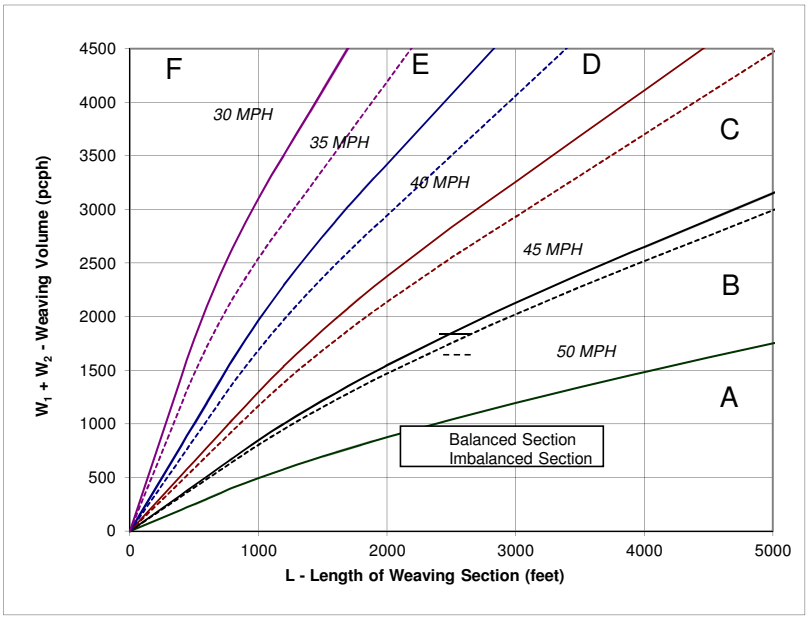
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

Data Input		
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,340

Project Information	
Project	Amoruso Ranch EIR & TDM
Scenario	2035 C+P AM
Freeway	SB SR 65
On-ramp	Placer Pkwy
Off-ramp	Sunset Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,270	Volume (vph)*	30	Volume (vph)*	760
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,313	Volume (pcph)	30	Volume (pcph)	776



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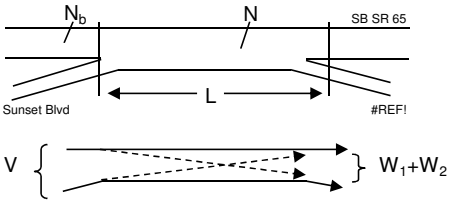


Capacity Analysis

1. Is the weaving section balanced (Y / N)? [If optional exit lane, then "Y". Otherwise "N".]	Y
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?	**40 MPH** and **45 MPH**
If below the 50 MPH curve, out of the realm of weaving. If left of the 30 MPH curve, LOS is F.	
3. Interpolated Weaving Speed (S_w, mph)	50.1
4. Weaving Intensity Factor (k)	1.00
5. Service Volume (SV, pcph) $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$	1,438
6. Level of Service (LOS)	D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

Leisch Method for Weaving Analysis

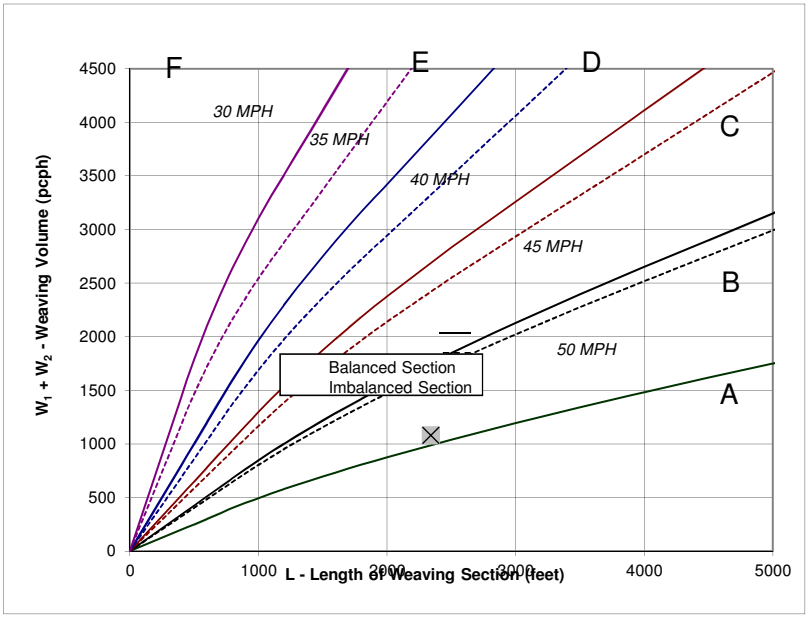
Data Input

Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	2,340

Project Information

Project	Amoruso Ranch EIR & TDM
Scenario	2035 C+P PM
Freeway	SB SR 65
On-ramp	Placer Pkwy
Off-ramp	Sunset Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,960	Volume (vph)*	300	Volume (vph)*	770
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,000	Volume (pcph)	303	Volume (pcph)	778



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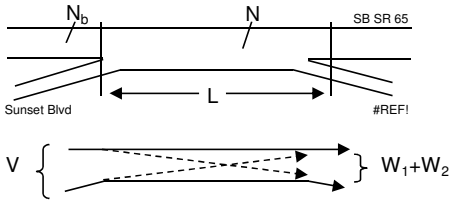


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 50 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **49.4**
4. Weaving Intensity Factor (k) **1.28**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **1,362**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

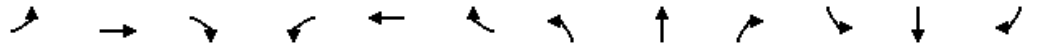
Source: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983.

APPENDIX E:

MITIGATION MEASURE TECHNICAL CALCULATIONS

EXISTING PLUS PROJECT MITIGATIONS

CITY OF ROSEVILLE INTERSECTIONS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	304	59	0	114	400	180	15	639	96	291	733	636
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		2.0	3.7	3.7	2.0	4.0	4.0	3.0	4.0	2.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3471		1770	3471	1553	1770	3539	1583	1736	3539	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3471		1770	3471	1553	1770	3539	1583	1736	3539	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	338	66	0	127	444	200	17	710	107	323	814	707
RTOR Reduction (vph)	0	0	0	0	0	164	0	0	73	0	0	135
Lane Group Flow (vph)	338	66	0	127	444	36	17	710	34	323	814	572
Heavy Vehicles (%)	4%	4%	2%	2%	4%	4%	2%	2%	2%	4%	2%	4%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	17.9	23.0		12.5	17.6	17.6	2.6	32.2	32.2	21.4	51.0	68.9
Effective Green, g (s)	18.9	26.0		14.5	19.9	19.9	4.6	34.2	34.2	22.4	53.0	72.9
Actuated g/C Ratio	0.17	0.24		0.13	0.18	0.18	0.04	0.31	0.31	0.21	0.49	0.67
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Vehicle Extension (s)	3.0	4.7		2.0	4.8	4.8	2.0	4.8	4.8	2.0	4.7	3.0
Lane Grp Cap (vph)	583	827		235	633	283	75	1109	496	356	1719	1038
v/s Ratio Prot	c0.10	0.02		0.07	c0.13		0.01	c0.20		c0.19	0.23	c0.10
v/s Ratio Perm						0.02			0.02			0.27
v/c Ratio	0.58	0.08		0.54	0.70	0.13	0.23	0.64	0.07	0.91	0.47	0.55
Uniform Delay, d1	41.5	32.3		44.2	41.8	37.3	50.5	32.2	26.3	42.3	18.7	9.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1		1.4	4.2	0.4	0.6	1.7	0.1	25.3	0.4	0.6
Delay (s)	42.9	32.3		45.5	46.1	37.7	51.1	33.8	26.4	67.6	19.1	10.1
Level of Service	D	C		D	D	D	D	C	C	E	B	B
Approach Delay (s)		41.1			43.8			33.2			24.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	109.1	Sum of lost time (s)	13.7
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	150	591	75	89	53	268	784	45	58	1022	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	103	167	657	83	99	59	298	871	50	64	1136	101
RTOR Reduction (vph)	0	0	144	0	0	41	0	0	30	0	0	0
Lane Group Flow (vph)	103	167	513	83	99	18	298	871	20	64	1136	101
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	11.5	35.8	35.8	4.8	30.1	30.1	10.5	38.3	38.3	6.1	33.9	105.0
Effective Green, g (s)	12.5	38.8	38.8	5.8	32.6	32.6	11.5	41.3	41.3	7.1	36.9	105.0
Actuated g/C Ratio	0.12	0.37	0.37	0.06	0.31	0.31	0.11	0.39	0.39	0.07	0.35	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	211	1308	585	98	1099	491	376	2000	623	120	1787	1583
v/s Ratio Prot	0.06	0.05		c0.05	0.03		c0.09	0.17		0.04	c0.22	
v/s Ratio Perm			c0.32			0.01			0.01			0.06
v/c Ratio	0.49	0.13	0.88	0.85	0.09	0.04	0.79	0.44	0.03	0.53	0.64	0.06
Uniform Delay, d1	43.3	21.9	30.9	49.2	25.7	25.3	45.6	23.3	19.6	47.3	28.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	14.6	44.1	0.1	0.1	10.9	0.7	0.1	2.3	0.9	0.1
Delay (s)	43.9	22.0	45.4	93.3	25.8	25.3	56.5	24.0	19.7	49.6	29.3	0.1
Level of Service	D	C	D	F	C	C	E	C	B	D	C	A
Approach Delay (s)		41.0			48.9			31.8			28.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	296	1466	4	9	1039	90	1	0	0	97	0	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	4.0			6.0	6.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00			0.95	0.95	0.88
Frt	1.00	1.00		1.00	1.00	0.85	1.00			1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95			0.95	0.95	1.00
Satd. Flow (prot)	3433	5083		1770	5085	1583	1770			1681	1681	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95			0.95	0.95	1.00
Satd. Flow (perm)	3433	5083		1770	5085	1583	1770			1681	1681	2787
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	329	1629	4	10	1154	100	1	0	0	108	0	624
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	0	0	0	392
Lane Group Flow (vph)	329	1633	0	10	1154	58	1	0	0	54	54	232
Turn Type	Prot			Prot		Perm	Split		Perm	Split		pm+ov
Protected Phases	7	4		3	8		5	5		6	6	7
Permitted Phases						8			5			6
Actuated Green, G (s)	20.0	88.2		1.3	69.5	69.5	2.8			7.3	7.3	27.3
Effective Green, g (s)	20.0	88.2		1.3	69.5	69.5	2.8			7.3	7.3	27.3
Actuated g/C Ratio	0.17	0.74		0.01	0.58	0.58	0.02			0.06	0.06	0.23
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	4.0			6.0	6.0	4.0
Vehicle Extension (s)	2.0	3.7		2.0	3.7	3.7	2.0			2.0	2.0	2.0
Lane Grp Cap (vph)	572	3736		19	2945	917	41			102	102	634
v/s Ratio Prot	c0.10	c0.32		0.01	c0.23		c0.00			c0.03	0.03	0.06
v/s Ratio Perm						0.04						0.02
v/c Ratio	0.58	0.44		0.53	0.39	0.06	0.02			0.53	0.53	0.37
Uniform Delay, d1	46.1	6.2		59.0	13.7	11.0	57.3			54.7	54.7	39.1
Progression Factor	0.58	0.40		1.24	0.68	0.32	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1		11.3	0.4	0.1	0.1			2.3	2.3	0.1
Delay (s)	27.2	2.5		84.3	9.7	3.7	57.4			57.0	57.0	39.2
Level of Service	C	A		F	A	A	E			E	E	D
Approach Delay (s)		6.7			9.8			57.4			41.8	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	435	102	152	428	8	130	0	132	237	0	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0		2.0	4.0	3.0	2.0		3.0	3.7		3.7
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.99	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3419		1770	3539	1562	1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3419		1770	3539	1562	1770		1583	1770		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	69	483	113	169	476	9	144	0	147	263	0	151
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	125	0	0	123
Lane Group Flow (vph)	69	568	0	169	476	9	144	0	22	263	0	28
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot			Prot		Free	Prot		custom	Prot		custom
Protected Phases	7	4		3	8		5			6		
Permitted Phases						Free			5			6
Actuated Green, G (s)	2.3	17.7		10.2	25.6	66.9	9.1		9.1	10.2		10.2
Effective Green, g (s)	4.3	19.7		12.2	27.6	66.9	11.1		10.1	12.2		12.2
Actuated g/C Ratio	0.06	0.29		0.18	0.41	1.00	0.17		0.15	0.18		0.18
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0		4.0	5.7		5.7
Vehicle Extension (s)	2.0	4.8		2.0	4.8		2.0		2.0	2.0		2.0
Lane Grp Cap (vph)	114	1007		323	1460	1562	294		239	323		289
v/s Ratio Prot	c0.04	c0.17		c0.10	0.13		c0.08			c0.15		
v/s Ratio Perm						0.01			0.01			0.02
v/c Ratio	0.61	0.56		0.52	0.33	0.01	0.49		0.09	0.81		0.10
Uniform Delay, d1	30.5	20.0		24.7	13.3	0.0	25.3		24.5	26.3		22.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	6.1	1.1		0.7	0.3	0.0	0.5		0.1	13.8		0.1
Delay (s)	36.6	21.1		25.4	13.6	0.0	25.8		24.5	40.1		22.8
Level of Service	D	C		C	B	A	C		C	D		C
Approach Delay (s)		22.7			16.5			25.2			33.8	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	66.9	Sum of lost time (s)	11.7
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	637	262	4	166	134	383	13	626	153	186	675	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		2.0	3.7	3.7	2.0	4.0	4.0	3.0	4.0	2.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3465		1770	3471	1553	1770	3539	1583	1736	3539	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3465		1770	3471	1553	1770	3539	1583	1736	3539	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	708	291	4	184	149	426	14	696	170	207	750	348
RTOR Reduction (vph)	0	1	0	0	0	213	0	0	120	0	0	103
Lane Group Flow (vph)	708	294	0	184	149	213	14	696	50	207	750	245
Heavy Vehicles (%)	4%	4%	2%	2%	4%	4%	2%	2%	2%	4%	2%	4%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	29.1	27.2		15.4	13.5	13.5	2.5	29.7	29.7	15.3	42.5	71.6
Effective Green, g (s)	30.1	30.2		17.4	15.8	15.8	4.5	31.7	31.7	16.3	44.5	75.6
Actuated g/C Ratio	0.28	0.28		0.16	0.15	0.15	0.04	0.29	0.29	0.15	0.41	0.70
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Vehicle Extension (s)	3.0	4.7		2.0	4.8	4.8	2.0	4.8	4.8	2.0	4.7	3.0
Lane Grp Cap (vph)	942	973		286	510	228	74	1043	466	263	1464	1091
v/s Ratio Prot	c0.21	0.08		0.10	0.04		0.01	c0.20		c0.12	0.21	0.06
v/s Ratio Perm						c0.14			0.03			0.09
v/c Ratio	0.75	0.30		0.64	0.29	0.93	0.19	0.67	0.11	0.79	0.51	0.22
Uniform Delay, d1	35.3	30.4		42.2	40.9	45.4	49.8	33.3	27.6	44.0	23.5	5.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.3		3.7	0.6	42.3	0.5	2.1	0.2	13.3	0.5	0.1
Delay (s)	38.8	30.8		45.9	41.5	87.7	50.2	35.4	27.8	57.3	24.0	5.8
Level of Service	D	C		D	D	F	D	D	C	E	C	A
Approach Delay (s)		36.4			68.5			34.2			24.4	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	38.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	107.6	Sum of lost time (s)	13.7
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	168	360	92	254	126	684	1055	79	145	1142	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	164	187	400	102	282	140	760	1172	88	161	1269	134
RTOR Reduction (vph)	0	0	332	0	0	120	0	0	44	0	0	0
Lane Group Flow (vph)	164	187	68	102	282	20	760	1172	44	161	1269	134
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Actuated Green, G (s)	14.7	17.4	17.4	11.3	15.0	15.0	28.3	56.8	56.8	14.5	43.0	120.0
Effective Green, g (s)	15.7	20.4	20.4	12.3	17.5	17.5	29.3	59.8	59.8	15.5	46.0	120.0
Actuated g/C Ratio	0.13	0.17	0.17	0.10	0.15	0.15	0.24	0.50	0.50	0.13	0.38	1.00
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	3.0	3.4	3.4	2.0	4.1	
Lane Grp Cap (vph)	232	602	269	181	516	231	838	2534	789	229	1949	1583
v/s Ratio Prot	c0.09	0.05		0.06	c0.08		c0.22	0.23		0.09	c0.25	
v/s Ratio Perm			0.04			0.01			0.03			0.08
v/c Ratio	0.71	0.31	0.25	0.56	0.55	0.09	0.91	0.46	0.06	0.70	0.65	0.08
Uniform Delay, d1	49.9	43.6	43.2	51.3	47.6	44.3	44.0	19.6	15.5	50.0	30.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	0.5	0.9	2.4	2.1	0.3	13.3	0.6	0.1	7.7	0.9	0.1
Delay (s)	57.7	44.1	44.0	53.7	49.6	44.7	57.4	20.2	15.7	57.8	31.3	0.1
Level of Service	E	D	D	D	D	D	E	C	B	E	C	A
Approach Delay (s)		47.1			49.1			34.0			31.4	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	36.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	487	41	80	602	36	155	0	181	143	0	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	4.0		2.0	4.0	5.0	2.0		3.0	3.7		3.7
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3490		1770	3539	1558	1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3490		1770	3539	1558	1770		1583	1770		1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	121	541	46	89	669	40	172	0	201	159	0	128
RTOR Reduction (vph)	0	7	0	0	0	27	0	0	160	0	0	110
Lane Group Flow (vph)	121	580	0	89	669	13	172	0	41	159	0	18
Confl. Peds. (#/hr)			5			5						
Turn Type	Prot			Prot		Perm	Prot		custom	Prot		custom
Protected Phases	7	4		3	8		5			6		
Permitted Phases						8			5			6
Actuated Green, G (s)	6.0	21.0		5.3	20.3	20.3	12.5		12.5	7.3		7.3
Effective Green, g (s)	8.0	23.0		7.3	22.3	21.3	14.5		13.5	9.3		9.3
Actuated g/C Ratio	0.12	0.35		0.11	0.34	0.32	0.22		0.21	0.14		0.14
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0		4.0	5.7		5.7
Vehicle Extension (s)	2.0	4.8		2.0	4.8	4.8	2.0		2.0	2.0		2.0
Lane Grp Cap (vph)	215	1220		196	1199	504	390		325	250		224
v/s Ratio Prot	c0.07	0.17		0.05	c0.19		c0.10			c0.09		
v/s Ratio Perm						0.01			0.03			0.01
v/c Ratio	0.56	0.48		0.45	0.56	0.03	0.44		0.13	0.64		0.08
Uniform Delay, d1	27.3	16.7		27.4	17.7	15.2	22.2		21.3	26.7		24.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	2.0	0.6		0.6	0.9	0.0	0.3		0.1	3.9		0.1
Delay (s)	29.3	17.3		28.0	18.6	15.2	22.4		21.4	30.5		24.6
Level of Service	C	B		C	B	B	C		C	C		C
Approach Delay (s)		19.3			19.5			21.9			27.9	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	11.7
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection 72 **Secret Ravine Pkwy/Roseville Pkwy** **Signal**

Direction	Movement	Volume (veh/hr)			Total Delay (sec/veh)		
		Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	124	134	107.7%	53.2	8.5	D
	Through						
	Right Turn	488	490	100.4%	27.7	5.6	C
	Subtotal	**612**	**624**	**101.9%**	**33.3**	**5.1**	**C**
EB	Left Turn	532	442	83.2%	36.8	11.1	D
	Through	1,516	1,455	96.0%	29.0	18.4	C
	Right Turn	4	3	70.0%	8.6	13.4	A
	Subtotal	**2,052**	**1,900**	**92.6%**	**30.9**	**16.3**	**C**
WB	Left Turn	12	12	96.7%	75.8	29.0	E
	Through	1,744	1,745	100.1%	39.3	6.8	D
	Right Turn	112	118	105.0%	16.8	2.6	B
	Subtotal	**1,868**	**1,874**	**100.3%**	**38.1**	**6.2**	**D**
Total		**4,532**	**4,398**	**97.1%**	**34.2**	**5.5**	**C**

INTERSECTINS OUTSIDE OF ROSEVILLE

Intersection	
Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR
Vol, veh/h	0	10	143	0	604	58	0	40	264
Peak Hour Factor	0.95	0.91	0.91	0.95	0.91	0.91	0.95	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	157	0	664	64	0	44	290
Number of Lanes	0	0	2	0	2	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	3	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	3
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	2
HCM Control Delay	11.6	14.9	16.6
HCM LOS	B	B	C

Lane	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	17%	0%	0%	0%	0%	13%
Vol Thru, %	83%	100%	100%	100%	0%	0%
Vol Right, %	0%	0%	0%	0%	100%	87%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	95	302	302	58	304
LT Vol	48	95	302	302	0	0
Through Vol	0	0	0	0	58	264
RT Vol	10	0	0	0	0	40
Lane Flow Rate	63	105	332	332	64	334
Geometry Grp	8	8	7	7	7	7
Degree of Util (X)	0.129	0.21	0.547	0.547	0.061	0.567
Departure Headway (Hd)	7.315	7.227	5.936	5.936	3.464	6.11
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	489	494	607	607	1027	588
Service Time	5.087	4.998	3.682	3.682	1.208	3.859
HCM Lane V/C Ratio	0.129	0.213	0.547	0.547	0.062	0.568
HCM Control Delay	11.2	11.9	15.7	15.7	6.4	16.6
HCM Lane LOS	B	B	C	C	A	C
HCM 95th-tile Q	0.4	0.8	3.3	3.3	0.2	3.5

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	136	44	0	187	597	0	63	29
Peak Hour Factor	0.95	0.90	0.90	0.95	0.90	0.90	0.95	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	151	49	0	208	663	0	70	32
Number of Lanes	0	2	1	0	0	2	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	8.7	18.1	11.4
HCM LOS	A	C	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	68%	0%	0%	0%	48%	0%
Vol Thru, %	0%	100%	100%	0%	52%	100%
Vol Right, %	32%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	92	68	68	44	386	398
LT Vol	0	68	68	0	199	398
Through Vol	29	0	0	44	0	0
RT Vol	63	0	0	0	187	0
Lane Flow Rate	102	76	76	49	429	442
Geometry Grp	7	7	7	7	8	8
Degree of Util (X)	0.197	0.125	0.125	0.047	0.66	0.651
Departure Headway (Hd)	6.953	5.944	5.944	3.483	5.646	5.403
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	518	606	606	1033	643	672
Service Time	4.66	3.65	3.65	1.189	3.346	3.103
HCM Lane V/C Ratio	0.197	0.125	0.125	0.047	0.667	0.658
HCM Control Delay	11.4	9.5	9.5	6.4	18.6	17.6
HCM Lane LOS	B	A	A	A	C	C
HCM 95th-tile Q	0.7	0.4	0.4	0.1	4.9	4.8

Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR
Vol, veh/h	0	231	574	0	232	92	0	49	17
Peak Hour Factor	0.95	0.93	0.93	0.95	0.93	0.93	0.95	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	248	617	0	249	99	0	53	18
Number of Lanes	0	0	2	0	2	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	3	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	3
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	2
HCM Control Delay	20.1	9	11.2
HCM LOS	C	A	B

Lane	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	55%	0%	0%	0%	0%	74%
Vol Thru, %	45%	100%	100%	100%	0%	0%
Vol Right, %	0%	0%	0%	0%	100%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	422	383	116	116	92	66
LT Vol	191	383	116	116	0	0
Through Vol	0	0	0	0	92	17
RT Vol	231	0	0	0	0	49
Lane Flow Rate	454	411	125	125	99	71
Geometry Grp	8	8	7	7	7	7
Degree of Util (X)	0.732	0.632	0.199	0.199	0.091	0.143
Departure Headway (Hd)	5.804	5.529	5.877	5.877	3.42	7.262
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	627	658	615	615	1055	495
Service Time	3.509	3.234	3.577	3.577	1.12	4.986
HCM Lane V/C Ratio	0.724	0.625	0.203	0.203	0.094	0.143
HCM Control Delay	22.7	17.2	10	10	6.5	11.2
HCM Lane LOS	C	C	A	A	A	B
HCM 95th-tile Q	6.3	4.5	0.7	0.7	0.3	0.5

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	554	62	0	31	209	0	114	168
Peak Hour Factor	0.95	0.96	0.96	0.95	0.96	0.96	0.95	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	577	65	0	32	218	0	119	175
Number of Lanes	0	2	1	0	0	2	0	1	0

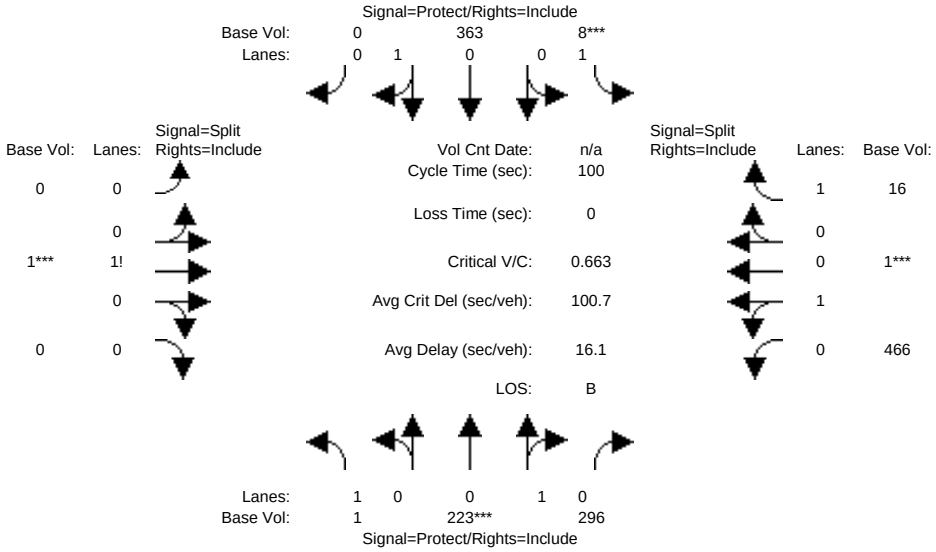
Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	13.3	12.2	16.3
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	40%	0%	0%	0%	31%	0%
Vol Thru, %	0%	100%	100%	0%	69%	100%
Vol Right, %	60%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	282	277	277	62	101	139
LT Vol	0	277	277	0	70	139
Through Vol	168	0	0	62	0	0
RT Vol	114	0	0	0	31	0
Lane Flow Rate	294	289	289	65	105	145
Geometry Grp	7	7	7	7	8	8
Degree of Util (X)	0.528	0.479	0.479	0.063	0.208	0.282
Departure Headway (Hd)	6.466	5.976	5.976	3.503	7.149	6.992
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	555	603	603	1014	500	512
Service Time	4.219	3.727	3.727	1.253	4.92	4.763
HCM Lane V/C Ratio	0.53	0.479	0.479	0.064	0.21	0.283
HCM Control Delay	16.3	14.1	14.1	6.5	11.8	12.5
HCM Lane LOS	C	B	B	A	B	B
HCM 95th-tile Q	3.1	2.6	2.6	0.2	0.8	1.1

City of Roseville
Existing Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P AM Mitigations

Intersection #305: Watt and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	1	223	296	8	363	0	0	1	0	466	1	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	223	296	8	363	0	0	1	0	466	1	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	223	296	8	363	0	0	1	0	466	1	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	223	296	8	363	0	0	1	0	466	1	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	223	296	8	363	0	0	1	0	466	1	16
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.43	0.57	1.00	1.00	0.00	0.00	1.00	0.00	0.99	0.01	1.00
Final Sat.:	1500	645	855	1500	1500	0	0	1500	0	1497	3	1500
Capacity Analysis Module:												
Vol/Sat:	0.00	0.35	0.35	0.01	0.24	0.00	0.00	0.00	0.00	0.31	0.31	0.01
Crit Volume:		519			8			1			467	
Crit Moves:		****			****			****			****	

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Existing Plus Project Conditions
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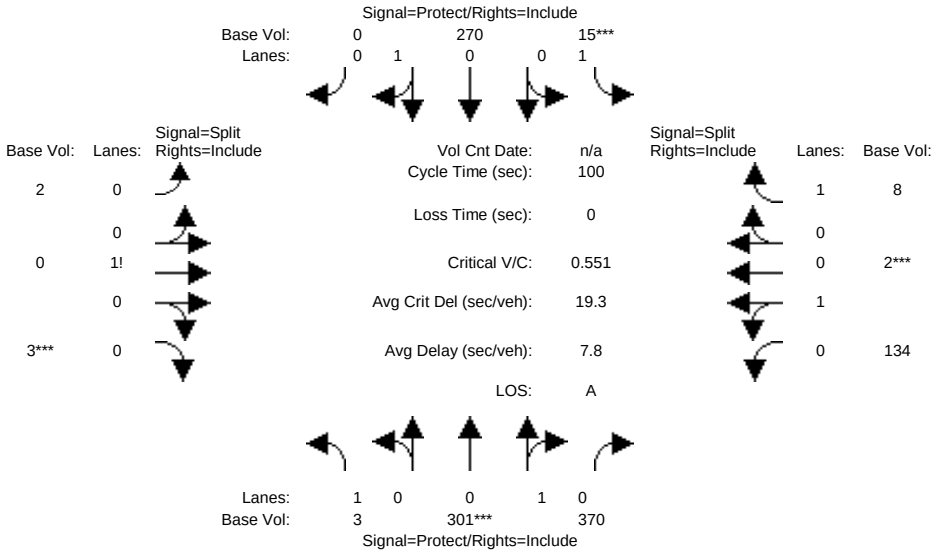
Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P PM Mitigations

Intersection #305: Watt and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	3	301	370	15	270	0	2	0	3	134	2	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	301	370	15	270	0	2	0	3	134	2	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	301	370	15	270	0	2	0	3	134	2	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	301	370	15	270	0	2	0	3	134	2	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	301	370	15	270	0	2	0	3	134	2	8
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.45	0.55	1.00	1.00	0.00	0.40	0.00	0.60	0.99	0.01	1.00
Final Sat.:	1500	673	827	1500	1500	0	600	0	900	1478	22	1500
Capacity Analysis Module:												
Vol/Sat:	0.00	0.45	0.45	0.01	0.18	0.00	0.00	0.00	0.00	0.09	0.09	0.01
Crit Volume:		671			15				5		136	
Crit Moves:		****			****				****		****	

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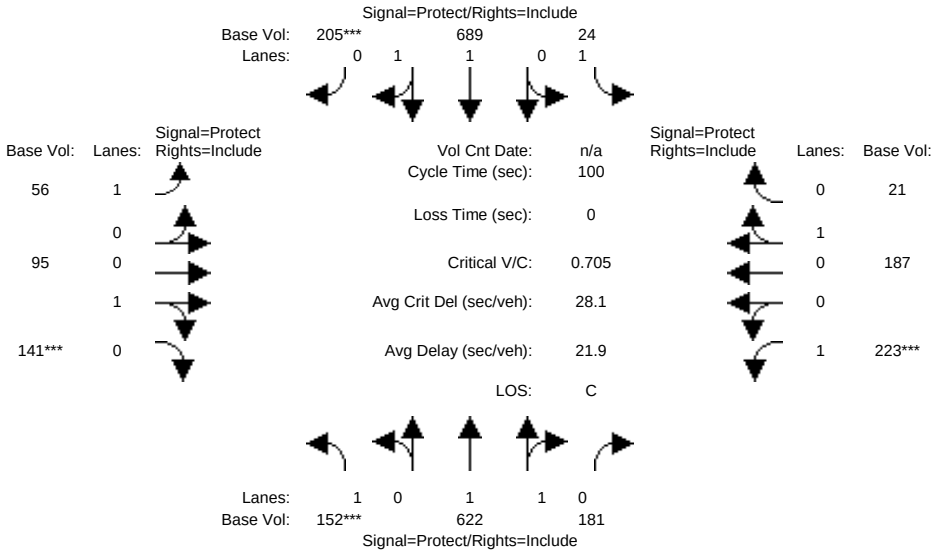
Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P AM Mitigations

Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	152	622	181	24	689	205	56	95	141	223	187	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	152	622	181	24	689	205	56	95	141	223	187	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	152	622	181	24	689	205	56	95	141	223	187	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	152	622	181	24	689	205	56	95	141	223	187	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	152	622	181	24	689	205	56	95	141	223	187	21
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.55	0.45	1.00	1.54	0.46	1.00	0.40	0.60	1.00	0.90	0.10
Final Sat.:	1500	2324	676	1500	2312	688	1500	604	896	1500	1349	151
Capacity Analysis Module:												
Vol/Sat:	0.10	0.27	0.27	0.02	0.30	0.30	0.04	0.16	0.16	0.15	0.14	0.14
Crit Volume:	152					447			236	223		
Crit Moves:	****					****			****	****		

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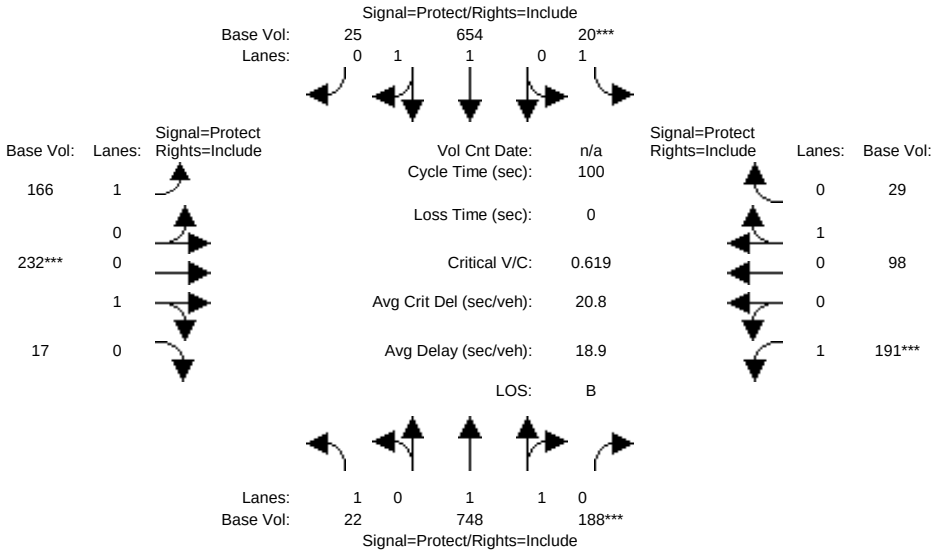
Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P PM Mitigations

Intersection #306: Walegra and PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	22	748	188	20	654	25	166	232	17	191	98	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	748	188	20	654	25	166	232	17	191	98	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	748	188	20	654	25	166	232	17	191	98	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	748	188	20	654	25	166	232	17	191	98	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	748	188	20	654	25	166	232	17	191	98	29
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.60	0.40	1.00	1.93	0.07	1.00	0.93	0.07	1.00	0.77	0.23
Final Sat.:	1500	2397	603	1500	2890	110	1500	1398	102	1500	1157	343
Capacity Analysis Module:												
Vol/Sat:	0.01	0.31	0.31	0.01	0.23	0.23	0.11	0.17	0.17	0.13	0.08	0.08
Crit Volume:			468	20				249		191		
Crit Moves:			****	****				****		****		

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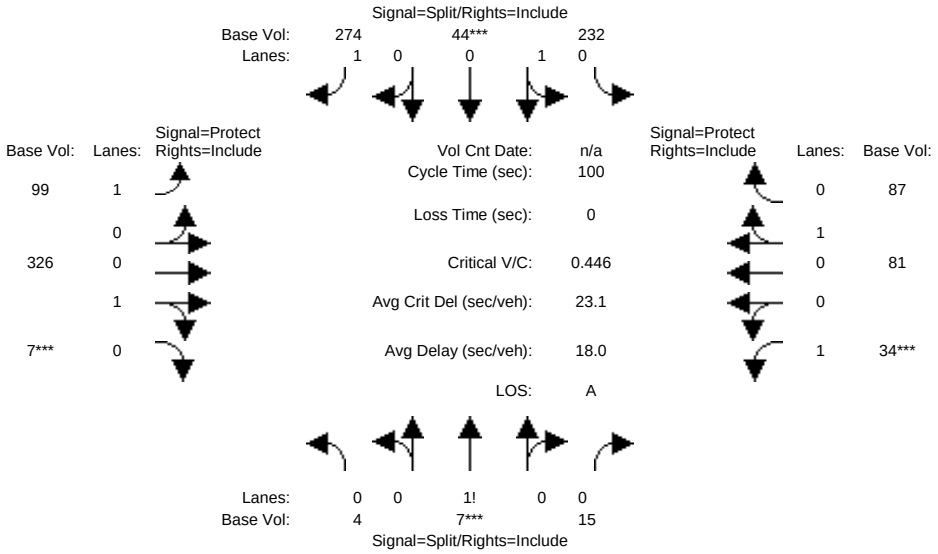
City of Roseville
Existing Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P AM Mitigations

Intersection #307: Cook Riolo/PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	4	7	15	232	44	274	99	326	7	34	81	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	7	15	232	44	274	99	326	7	34	81	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	7	15	232	44	274	99	326	7	34	81	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	7	15	232	44	274	99	326	7	34	81	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	7	15	232	44	274	99	326	7	34	81	87
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.15	0.27	0.58	0.84	0.16	1.00	1.00	0.98	0.02	1.00	0.48	0.52
Final Sat.:	231	404	865	1261	239	1500	1500	1468	32	1500	723	777
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.18	0.18	0.18	0.07	0.22	0.22	0.02	0.11	0.11
Crit Volume:		26			276				333	34		
Crit Moves:		****			****				****	****		

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City of Roseville
Existing Plus Project Conditions
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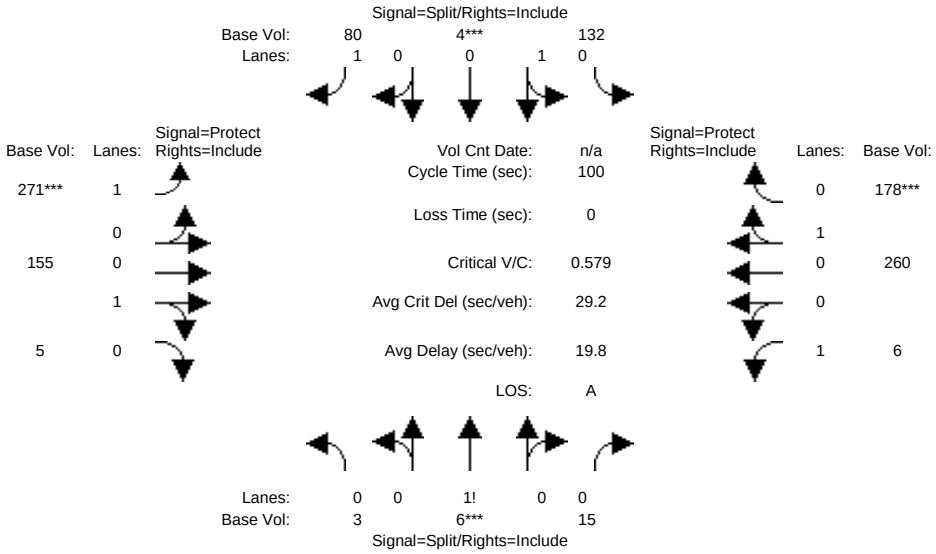
Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P PM Mitigations

Intersection #307: Cook Riolo/PFE



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	3	6	15	132	4	80	271	155	5	6	260	178
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	6	15	132	4	80	271	155	5	6	260	178
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	6	15	132	4	80	271	155	5	6	260	178
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	6	15	132	4	80	271	155	5	6	260	178
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	6	15	132	4	80	271	155	5	6	260	178
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.12	0.25	0.63	0.97	0.03	1.00	1.00	0.97	0.03	1.00	0.59	0.41
Final Sat.:	188	375	938	1456	44	1500	1500	1453	47	1500	890	610
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.09	0.09	0.05	0.18	0.11	0.11	0.00	0.29	0.29
Crit Volume:		24			136			271				438
Crit Moves:		****			****			****				****

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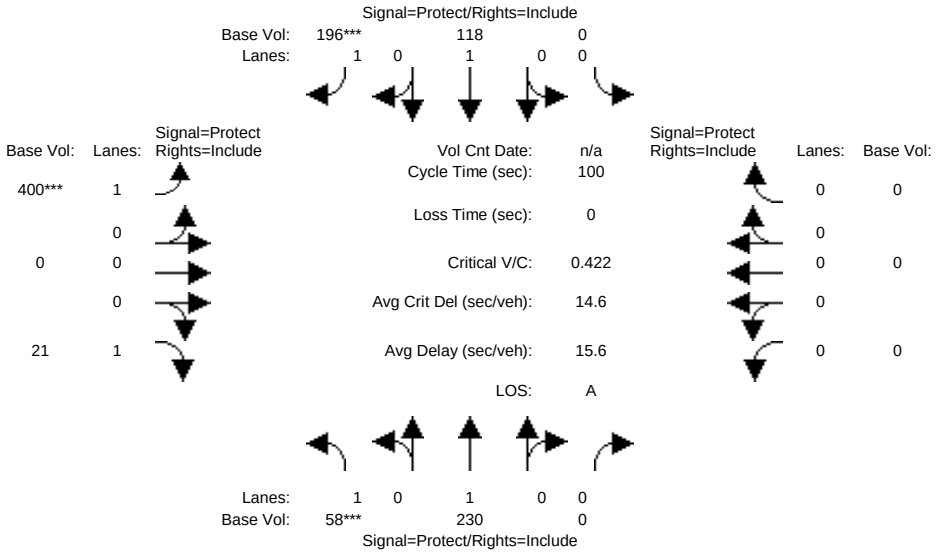
Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P AM Mitigations

Intersection #308: Fiddyment and Sunset



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	58	230	0	0	118	196	400	0	21	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	58	230	0	0	118	196	400	0	21	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	58	230	0	0	118	196	400	0	21	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	230	0	0	118	196	400	0	21	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	230	0	0	118	196	400	0	21	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.15	0.00	0.00	0.08	0.13	0.26	0.00	0.01	0.00	0.00	0.00
Crit Volume:	58					196	400				0	
Crit Moves:	****					****	****					

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Existing Plus Project Conditions
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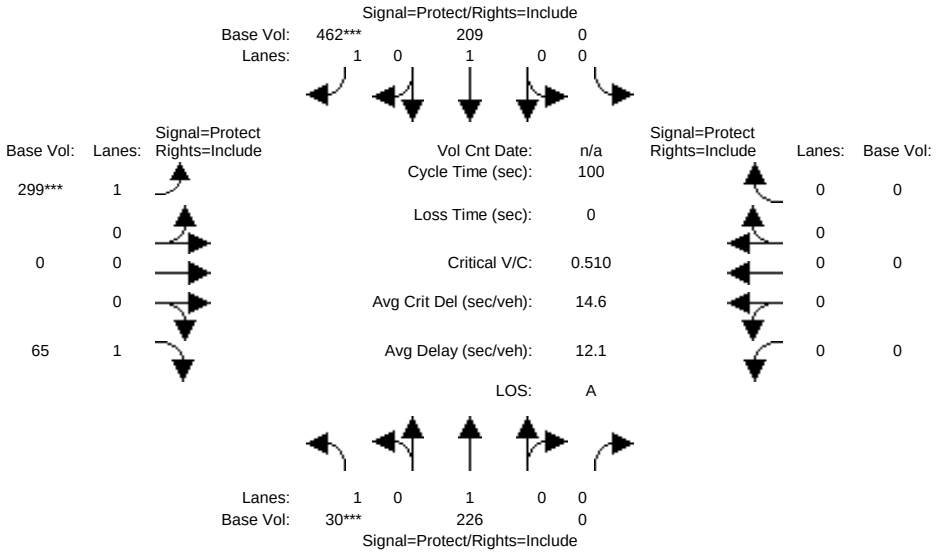
Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P PM Mitigations

Intersection #308: Fiddyment and Sunset



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	30	226	0	0	209	462	299	0	65	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	226	0	0	209	462	299	0	65	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	30	226	0	0	209	462	299	0	65	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	226	0	0	209	462	299	0	65	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	226	0	0	209	462	299	0	65	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	1550	0	0	1550	1550	1550	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.15	0.00	0.00	0.13	0.30	0.19	0.00	0.04	0.00	0.00	0.00
Crit Volume:	30					462	299				0	
Crit Moves:	****					****	****					

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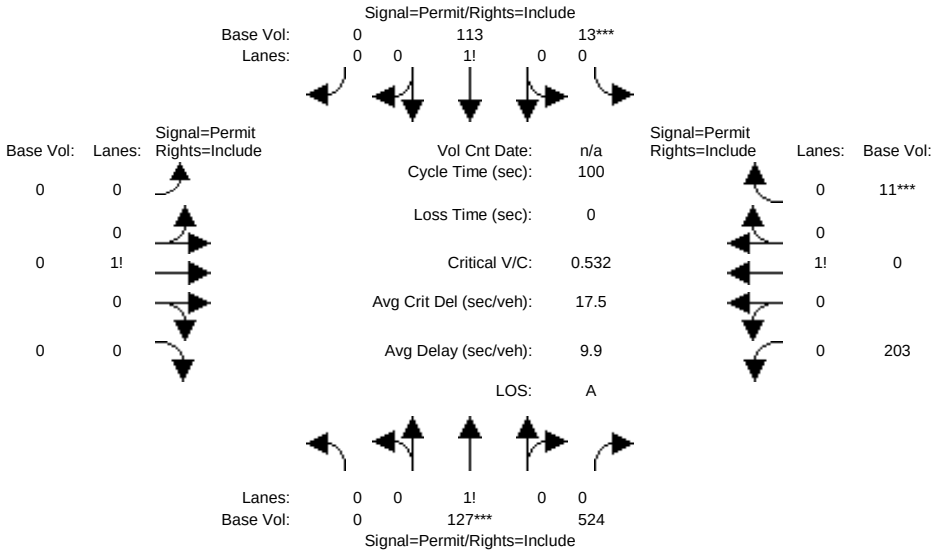
Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
E+P AM Mitigations

Intersection #309: Fiddyment and Athens



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	127	524	13	113	0	0	0	0	203	0	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	127	524	13	113	0	0	0	0	203	0	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	127	524	13	113	0	0	0	0	203	0	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	127	524	13	113	0	0	0	0	203	0	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	127	524	13	113	0	0	0	0	203	0	11
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.20	0.80	0.10	0.90	0.00	0.00	1.00	0.00	0.95	0.00	0.05
Final Sat.:	0	322	1328	170	1480	0	0	1650	0	1565	0	85
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.39	0.08	0.08	0.00	0.00	0.00	0.00	0.13	0.00	0.13
Crit Volume:		651			13			0				214
Crit Moves:		****			****							****

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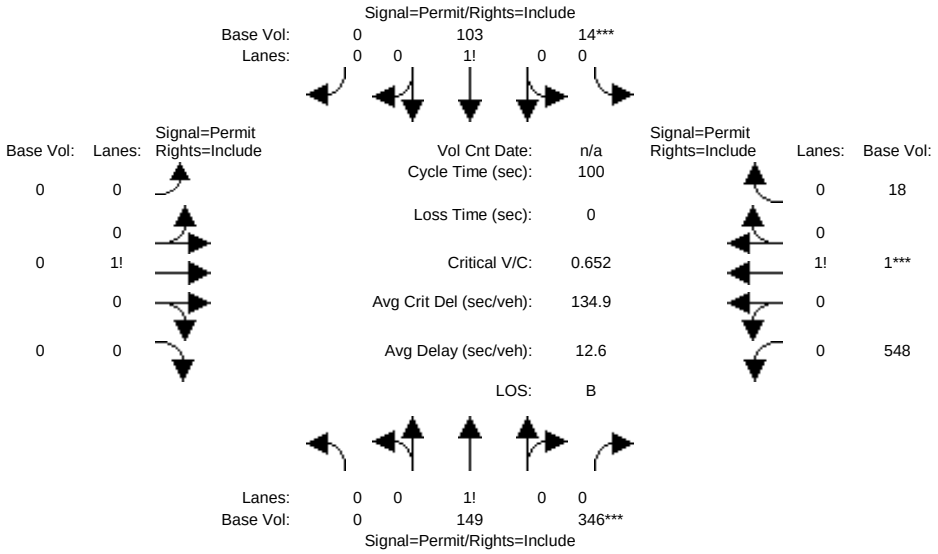
Circular 212 Planning (Base Volume Alternative)
E+P PM Mitigations

Intersection #309: Fiddyment and Athens



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	149	346	14	103	0	0	0	0	548	1	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	149	346	14	103	0	0	0	0	548	1	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	149	346	14	103	0	0	0	0	548	1	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	149	346	14	103	0	0	0	0	548	1	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	149	346	14	103	0	0	0	0	548	1	18
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.30	0.70	0.12	0.88	0.00	0.00	1.00	0.00	0.96	0.01	0.03
Final Sat.:	0	497	1153	197	1453	0	0	1650	0	1595	3	52
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.30	0.07	0.07	0.00	0.00	0.00	0.00	0.34	0.34	0.34
Crit Volume:			495	14			0				567	
Crit Moves:			****	****							****	

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2035 CIP PLUS PROJECT MITIGATIONS

CITY OF ROSEVILLE INTERSECTIONS

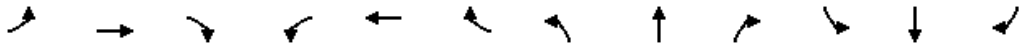
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	419	33	242	143	200	23	648	370	656	874	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	195	441	35	255	151	211	24	682	389	691	920	164
RTOR Reduction (vph)	0	0	28	0	0	23	0	0	148	0	0	77
Lane Group Flow (vph)	195	441	7	255	151	188	24	682	241	691	920	87
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.2	14.7	14.7	8.3	16.8	37.9	1.4	23.7	23.7	21.1	43.4	43.4
Effective Green, g (s)	7.2	16.7	15.7	9.3	18.8	39.9	2.4	25.7	24.7	22.1	45.4	44.4
Actuated g/C Ratio	0.09	0.20	0.19	0.11	0.22	0.48	0.03	0.31	0.29	0.26	0.54	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	295	1013	297	381	1141	810	98	1559	467	905	2755	839
v/s Ratio Prot	0.06	c0.09		c0.07	0.03	0.06	0.01	0.13		c0.20	0.18	
v/s Ratio Perm			0.00			0.06			c0.15			0.05
v/c Ratio	0.66	0.44	0.02	0.67	0.13	0.23	0.24	0.44	0.52	0.76	0.33	0.10
Uniform Delay, d1	37.1	29.4	27.8	35.8	26.0	12.9	39.8	23.3	24.6	28.4	10.7	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	0.3	0.0	4.4	0.1	0.1	1.3	0.2	1.0	3.9	0.1	0.1
Delay (s)	42.6	29.7	27.8	40.2	26.0	13.1	41.1	23.5	25.5	32.3	10.8	9.9
Level of Service	D	C	C	D	C	B	D	C	C	C	B	A
Approach Delay (s)		33.4			27.5			24.6			19.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	154	20	186	54	85	11	746	398	66	1213	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.3	4.3	4.0	3.3	4.3
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	162	21	196	57	89	12	785	419	69	1277	9
RTOR Reduction (vph)	0	0	18	0	0	67	0	0	237	0	0	5
Lane Group Flow (vph)	29	162	3	196	57	22	12	785	182	69	1277	4
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.4	11.1	11.1	8.2	17.9	17.9	0.6	32.7	32.7	5.1	37.2	37.2
Effective Green, g (s)	2.4	12.1	12.1	9.2	18.9	18.9	1.6	34.7	33.7	6.1	39.2	38.2
Actuated g/C Ratio	0.03	0.16	0.16	0.12	0.24	0.24	0.02	0.45	0.44	0.08	0.51	0.49
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.5	5.5	2.0	5.5	5.5
Lane Grp Cap (vph)	55	553	247	408	455	387	37	2280	689	139	2575	781
v/s Ratio Prot	0.02	c0.05		c0.06	0.03		0.01	0.15		c0.04	c0.25	
v/s Ratio Perm			0.00			0.01			0.12			0.00
v/c Ratio	0.53	0.29	0.01	0.48	0.13	0.06	0.32	0.34	0.26	0.50	0.50	0.01
Uniform Delay, d1	36.9	28.9	27.6	31.9	22.8	22.4	37.4	13.9	13.9	34.2	12.6	10.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.1	0.0	0.3	0.0	0.0	1.9	0.2	0.5	1.0	0.4	0.0
Delay (s)	41.1	29.0	27.6	32.2	22.9	22.4	39.2	14.2	14.5	35.2	13.0	10.0
Level of Service	D	C	C	C	C	C	D	B	B	D	B	A
Approach Delay (s)		30.5			28.1			14.5			14.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	227	17	477	581	700	63	1015	312	316	693	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	247	239	18	502	612	737	66	1068	328	333	729	266
RTOR Reduction (vph)	0	0	16	0	0	7	0	0	196	0	0	127
Lane Group Flow (vph)	247	239	2	502	612	730	66	1068	132	333	729	139
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.2	13.0	13.0	18.9	20.7	49.6	3.8	29.6	29.6	28.9	54.7	54.7
Effective Green, g (s)	12.2	15.0	14.0	19.9	22.7	51.6	4.8	31.6	30.6	29.9	56.7	55.7
Actuated g/C Ratio	0.11	0.14	0.13	0.19	0.21	0.48	0.05	0.30	0.29	0.28	0.53	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	394	717	208	642	1085	812	155	1510	455	965	2710	829
v/s Ratio Prot	0.07	0.05		c0.15	0.12	c0.25	0.02	c0.21		0.10	0.14	
v/s Ratio Perm			0.00			0.21			0.08			0.09
v/c Ratio	0.63	0.33	0.01	0.78	0.56	0.90	0.43	0.71	0.29	0.35	0.27	0.17
Uniform Delay, d1	44.9	41.2	40.2	41.2	37.4	25.0	49.5	33.3	29.5	30.5	13.5	13.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.3	0.0	6.2	0.7	12.7	1.9	1.5	0.4	0.2	0.1	0.1
Delay (s)	48.0	41.5	40.2	47.4	38.1	37.8	51.3	34.8	29.8	30.7	13.6	13.3
Level of Service	D	D	D	D	D	D	D	C	C	C	B	B
Approach Delay (s)		44.6			40.5			34.4			17.8	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	106.4	Sum of lost time (s)	5.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	64	9	566	175	34	40	1428	237	57	861	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.3	4.3	4.0	3.3	4.3
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	1863	1583	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	67	9	596	184	36	42	1503	249	60	906	43
RTOR Reduction (vph)	0	0	8	0	0	23	0	0	128	0	0	27
Lane Group Flow (vph)	20	67	1	596	184	13	42	1503	121	60	906	16
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.6	12.0	12.0	16.6	28.0	28.0	2.8	29.9	29.9	3.0	30.1	30.1
Effective Green, g (s)	1.6	13.0	13.0	17.6	29.0	29.0	3.8	31.9	30.9	4.0	32.1	31.1
Actuated g/C Ratio	0.02	0.16	0.16	0.22	0.35	0.35	0.05	0.39	0.38	0.05	0.39	0.38
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.3	5.3	5.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	35	562	252	739	660	561	82	1983	598	87	1995	602
v/s Ratio Prot	0.01	0.02		c0.17	c0.10		0.02	c0.30		c0.03	0.18	
v/s Ratio Perm			0.00			0.01			0.08			0.01
v/c Ratio	0.57	0.12	0.01	0.81	0.28	0.02	0.51	0.76	0.20	0.69	0.45	0.03
Uniform Delay, d1	39.8	29.5	29.0	30.5	18.9	17.2	38.1	21.6	17.2	38.3	18.4	15.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.6	0.1	0.0	6.4	0.2	0.0	5.3	1.7	0.2	20.4	0.2	0.0
Delay (s)	60.3	29.6	29.0	36.9	19.1	17.2	43.4	23.3	17.3	58.7	18.5	15.9
Level of Service	E	C	C	D	B	B	D	C	B	E	B	B
Approach Delay (s)		35.9			32.0			23.0			20.8	
Approach LOS		D			C			C			C	

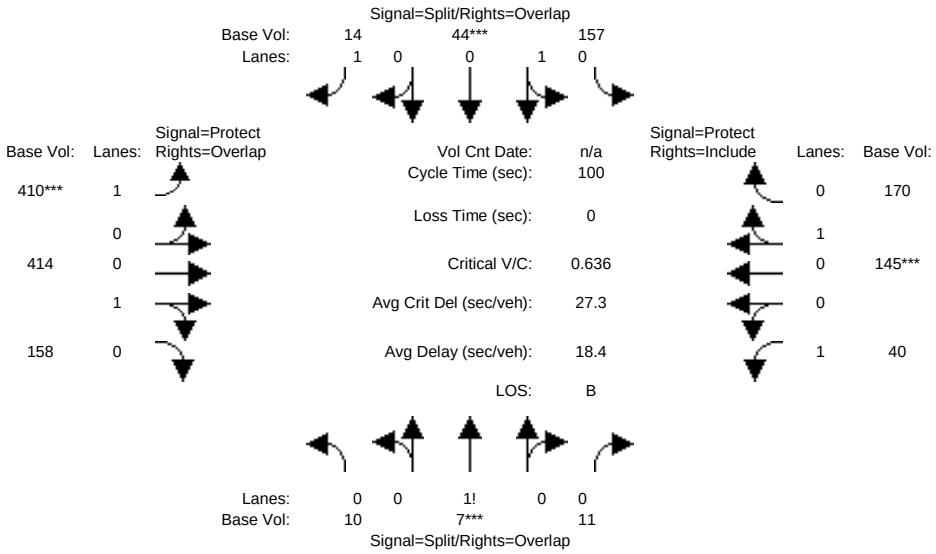
Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	81.8	Sum of lost time (s)	11.3
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

INTERSECTIONS OUTSIDE OF ROSEVILLE

City of Roseville
CIP Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM - Mitigations

Intersection #307: Cook Riolo Rd / PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	10	7	11	157	44	14	410	414	158	40	145	170
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	7	11	157	44	14	410	414	158	40	145	170
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	7	11	157	44	14	410	414	158	40	145	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	7	11	157	44	14	410	414	158	40	145	170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	7	11	157	44	14	410	414	158	40	145	170
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.36	0.25	0.39	0.78	0.22	1.00	1.00	0.72	0.28	1.00	0.46	0.54
Final Sat.:	536	375	589	1172	328	1500	1500	1086	414	1500	690	810
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.13	0.13	0.01	0.27	0.38	0.38	0.03	0.21	0.21
Crit Volume:		28			201		410				315	
Crit Moves:		****			****		****				****	

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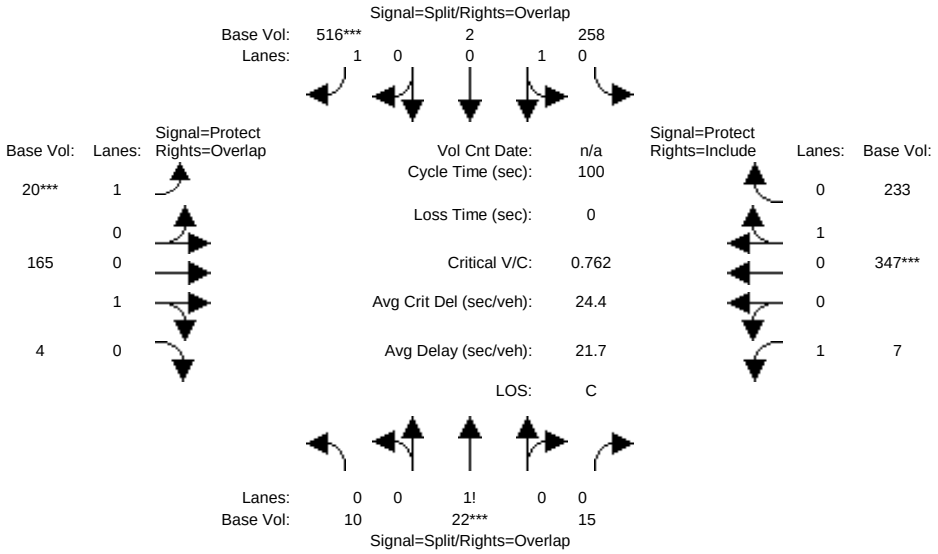
City of Roseville
CIP Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM - Mitigations

Intersection #307: Cook Riolo Rd / PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	10	22	15	258	2	516	20	165	4	7	347	233
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	22	15	258	2	516	20	165	4	7	347	233
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	22	15	258	2	516	20	165	4	7	347	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	22	15	258	2	516	20	165	4	7	347	233
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	22	15	258	2	516	20	165	4	7	347	233
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.21	0.47	0.32	0.99	0.01	1.00	1.00	0.98	0.02	1.00	0.60	0.40
Final Sat.:	319	702	479	1488	12	1500	1500	1464	36	1500	897	603
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.17	0.17	0.34	0.01	0.11	0.11	0.00	0.39	0.39
Crit Volume:		47				516	0				580	
Crit Moves:		****				****	****				****	

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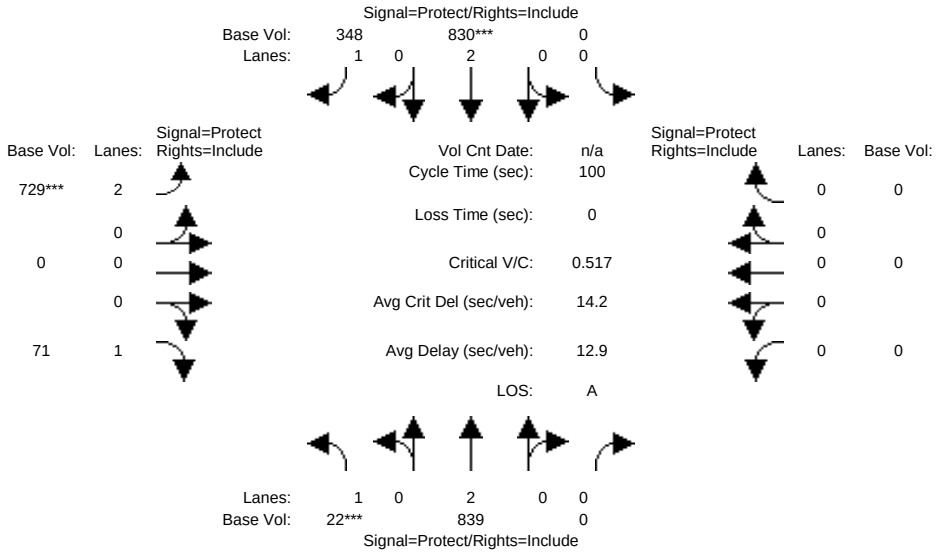
City of Roseville
CIP Plus Project PM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #308: Fiddyment Rd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	22	839	0	0	830	348	729	0	71	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	839	0	0	830	348	729	0	71	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	839	0	0	830	348	729	0	71	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	839	0	0	830	348	729	0	71	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	839	0	0	830	348	729	0	71	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	3100	0	0	3100	1550	3100	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.27	0.00	0.00	0.27	0.22	0.24	0.00	0.05	0.00	0.00	0.00
Crit Volume:	22				415		365				0	
Crit Moves:	****				****		****					

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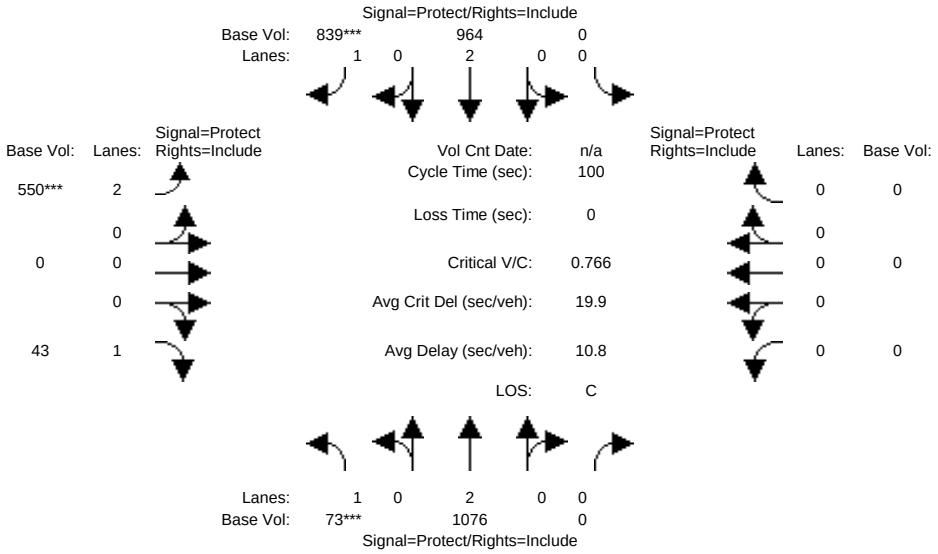
City of Roseville
CIP Plus Project PM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #308: Fiddyment Rd/Sunset Blvd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	73	1076	0	0	964	839	550	0	43	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	1076	0	0	964	839	550	0	43	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	73	1076	0	0	964	839	550	0	43	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	73	1076	0	0	964	839	550	0	43	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	73	1076	0	0	964	839	550	0	43	0	0	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1550	3100	0	0	3100	1550	3100	0	1550	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.35	0.00	0.00	0.31	0.54	0.18	0.00	0.03	0.00	0.00	0.00
Crit Volume:	73					839	275				0	
Crit Moves:	****					****	****					

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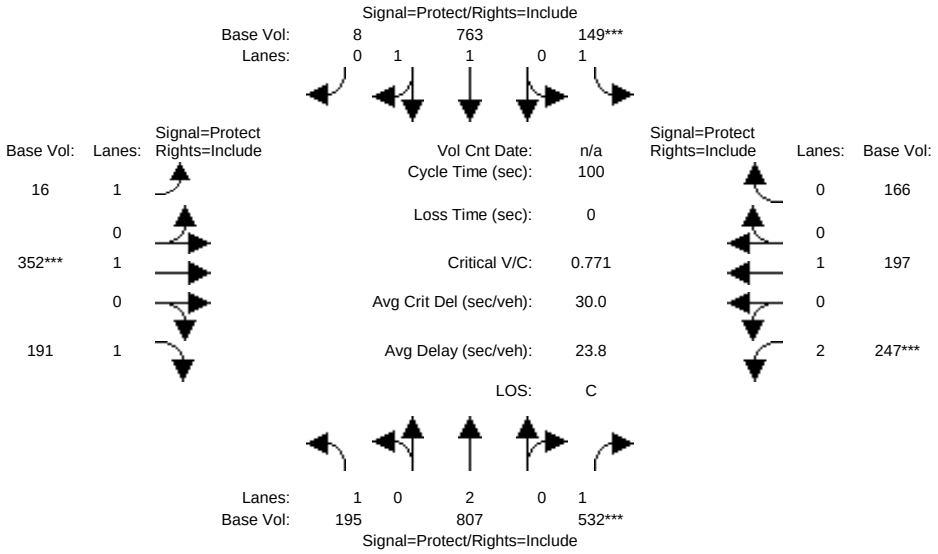
City of Roseville
CIP Plus Project PM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM Peak Hour

Intersection #309: Fiddyment Rd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	195	807	532	149	763	8	16	352	191	247	197	166
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	195	807	532	149	763	8	16	352	191	247	197	166
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	195	807	532	149	763	8	16	352	191	247	197	166
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	807	532	149	763	8	16	352	191	247	197	166
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	195	807	532	149	763	8	16	352	191	247	197	166
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.98	0.02	1.00	1.00	1.00	2.00	0.54	0.46
Final Sat.:	1500	3000	1500	1500	2969	31	1500	1500	1500	3000	814	686
Capacity Analysis Module:												
Vol/Sat:	0.13	0.27	0.35	0.10	0.26	0.26	0.01	0.23	0.13	0.08	0.24	0.24
Crit Volume:			532	149				352		123		
Crit Moves:			****	****				****		****		

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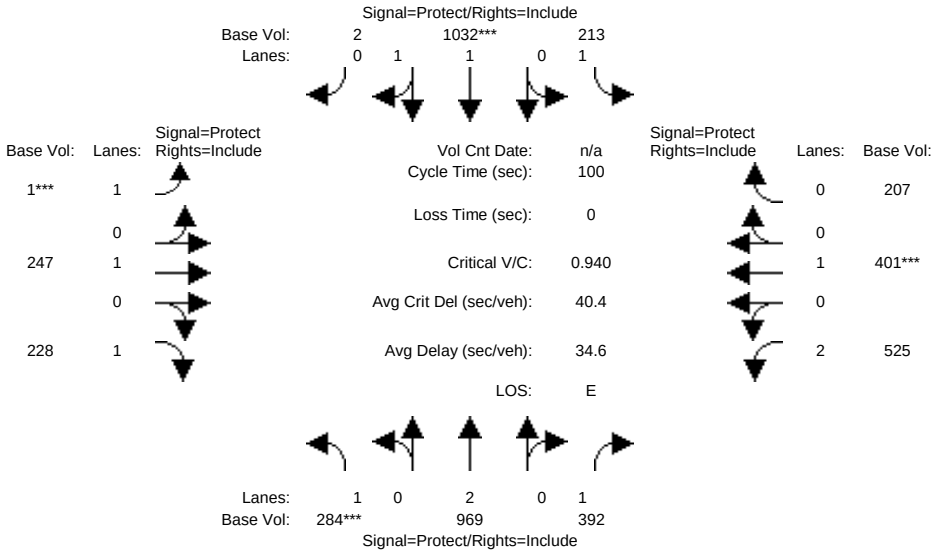
CIP Plus Project PM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM Peak Hour

Intersection #309: Fiddyment Rd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	284	969	392	213	1032	2	1	247	228	525	401	207
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	284	969	392	213	1032	2	1	247	228	525	401	207
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	284	969	392	213	1032	2	1	247	228	525	401	207
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	284	969	392	213	1032	2	1	247	228	525	401	207
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	284	969	392	213	1032	2	1	247	228	525	401	207
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.99	0.01	1.00	1.00	1.00	2.00	0.66	0.34
Final Sat.:	1500	3000	1500	1500	2994	6	1500	1500	1500	3000	989	511
Capacity Analysis Module:												
Vol/Sat:	0.19	0.32	0.26	0.14	0.34	0.34	0.00	0.16	0.15	0.17	0.41	0.41
Crit Volume:	284				517		1				608	
Crit Moves:	****				****		****				****	

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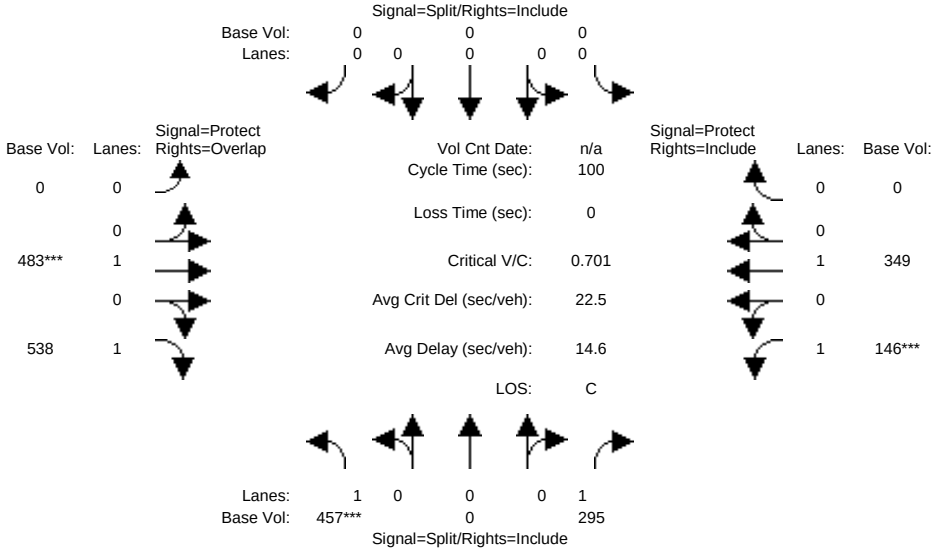
City of Roseville
CIP Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project AM - Mitigations

Intersection #311: Foothills Blvd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	457	0	295	0	0	0	0	483	538	146	349	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	457	0	295	0	0	0	0	483	538	146	349	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	457	0	295	0	0	0	0	483	538	146	349	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	457	0	295	0	0	0	0	483	538	146	349	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	457	0	295	0	0	0	0	483	538	146	349	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1550	0	1550	0	0	0	0	1550	1550	1550	1550	0
Capacity Analysis Module:												
Vol/Sat:	0.29	0.00	0.19	0.00	0.00	0.00	0.00	0.31	0.35	0.09	0.23	0.00
Crit Volume:	457				0			483		146		
Crit Moves:	****							****		****		

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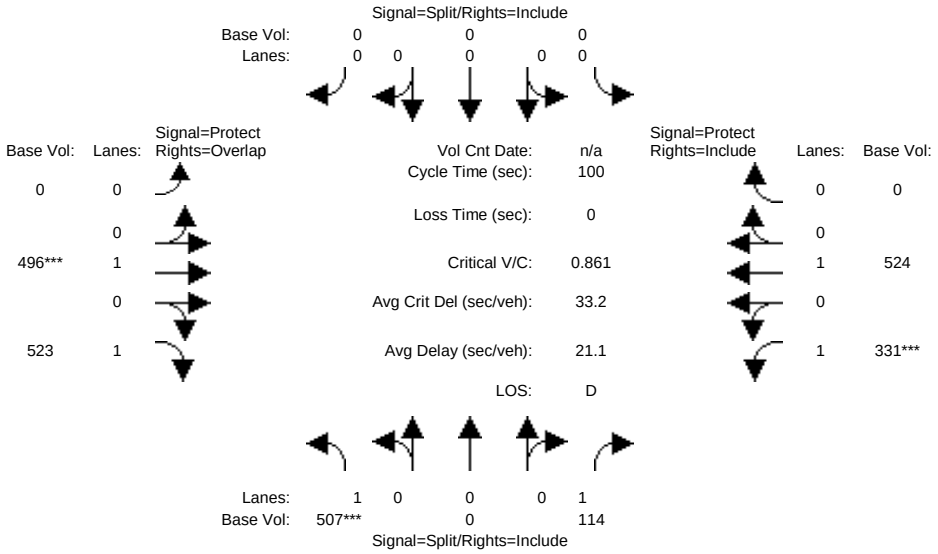
City of Roseville
CIP Plus Project AM Peak Hour
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CIP Plus Project PM - Mitigations

Intersection #311: Foothills Blvd/Athens Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	507	0	114	0	0	0	0	496	523	331	524	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	507	0	114	0	0	0	0	496	523	331	524	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	507	0	114	0	0	0	0	496	523	331	524	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	507	0	114	0	0	0	0	496	523	331	524	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	507	0	114	0	0	0	0	496	523	331	524	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1550	0	1550	0	0	0	0	1550	1550	1550	1550	0
Capacity Analysis Module:												
Vol/Sat:	0.33	0.00	0.07	0.00	0.00	0.00	0.00	0.32	0.34	0.21	0.34	0.00
Crit Volume:	507				0			496		331		
Crit Moves:	****							****		****		

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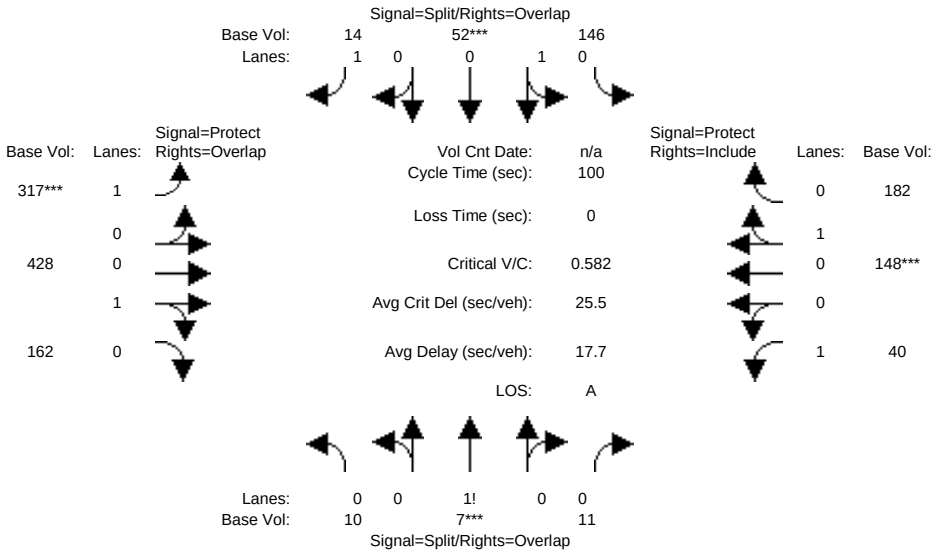
CUMULATIVE PLUS PROJECT MITIGATIONS

INTERSECTINS OUTSIDE OF ROSEVILLE

City of Roseville
Cumulative Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CPP AM - Mitigations

Intersection #307: Cook Riolo Rd / PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	10	7	11	146	52	14	317	428	162	40	148	182
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	7	11	146	52	14	317	428	162	40	148	182
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	7	11	146	52	14	317	428	162	40	148	182
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	7	11	146	52	14	317	428	162	40	148	182
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	7	11	146	52	14	317	428	162	40	148	182
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.36	0.25	0.39	0.74	0.26	1.00	1.00	0.73	0.27	1.00	0.45	0.55
Final Sat.:	536	375	589	1106	394	1500	1500	1088	412	1500	673	827
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.13	0.13	0.01	0.21	0.39	0.39	0.03	0.22	0.22
Crit Volume:		28			198		317				330	
Crit Moves:		****			****		****				****	

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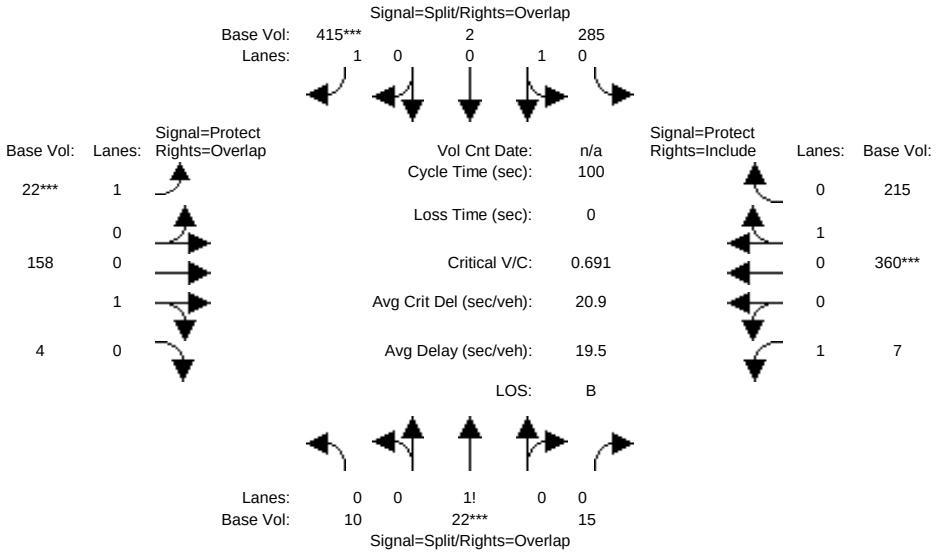
City of Roseville
Cumulative Plus Project Conditions
Amoruso Ranch Specific Plan

Level Of Service Computation Report
Circular 212 Planning (Base Volume Alternative)
CPP PM - Mitigations

Intersection #307: Cook Riolo Rd / PFE Rd



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	10	22	15	285	2	415	22	158	4	7	360	215
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	22	15	285	2	415	22	158	4	7	360	215
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	22	15	285	2	415	22	158	4	7	360	215
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	22	15	285	2	415	22	158	4	7	360	215
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	22	15	285	2	415	22	158	4	7	360	215
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.21	0.47	0.32	0.99	0.01	1.00	1.00	0.98	0.02	1.00	0.63	0.37
Final Sat.:	319	702	479	1490	10	1500	1500	1463	37	1500	939	561
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.19	0.19	0.28	0.01	0.11	0.11	0.00	0.38	0.38
Crit Volume:		47				415	0				575	
Crit Moves:		****				****	****				****	

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APPENDIX F:

SUPERCUMULATIVE PEAK HOUR TURNING VOLUMES

SUPERCUMULATIVE NO PROJECT CONDITIONS

N:\2011Projects\2923_AmorusoRanchEIR_TDM\Graphics\Draft\GIS\MXD_Nov2015\FigC3_StudyIntersection_Cumu.mxd

1 Existing Study Intersection

P1 Existing Study Intersection in Pedestrian Overlay Zone

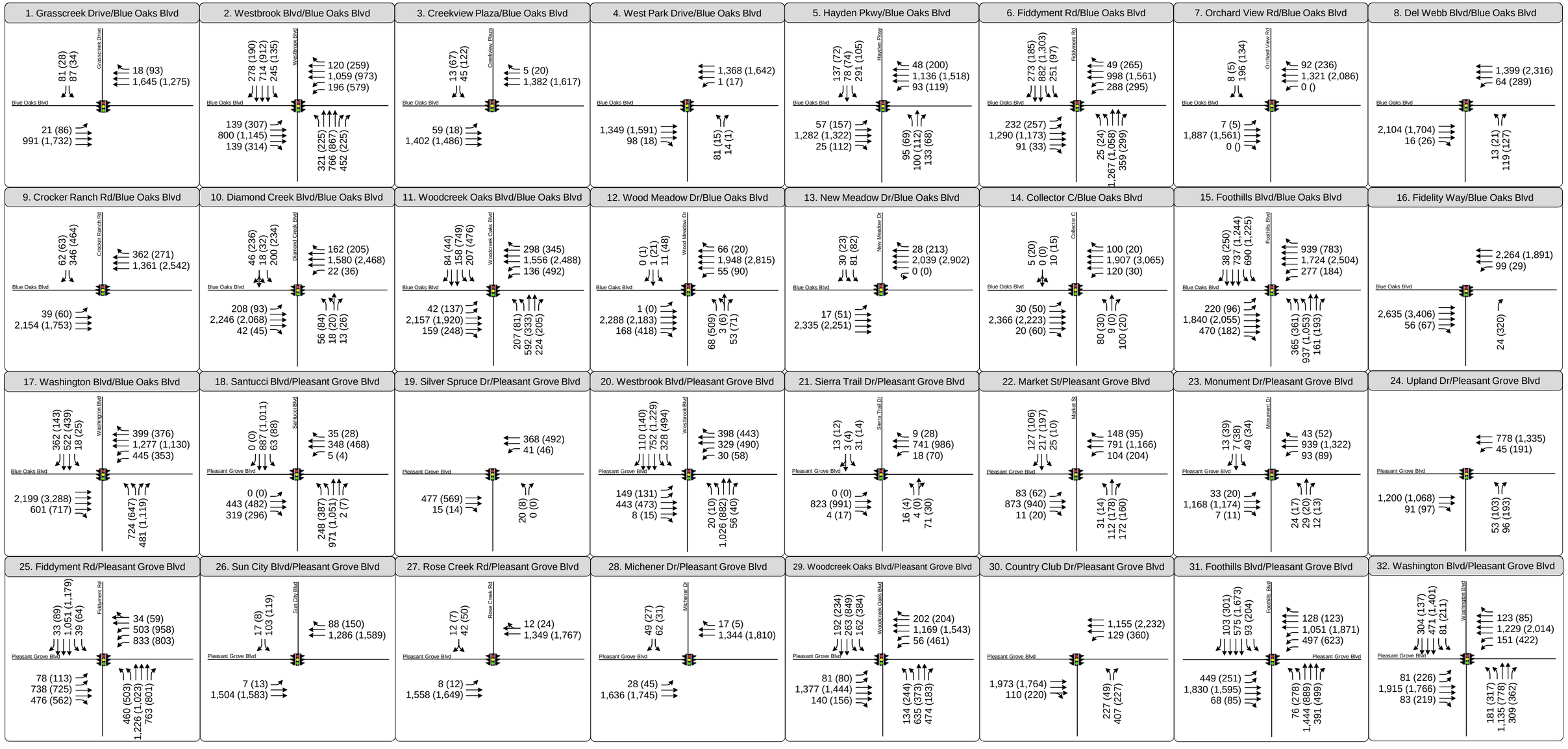
1 Future Study Intersections by 2035

N Not to Scale

Note: Additional intersections outside City of Roseville also being studied.

Figure C-3

Signalized Study Intersections in Roseville - 2035 Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Note: Lane configurations that are shown here are from the 2035 CIP/Cumulative scenarios. They do not represent a recommended set of lane configurations under supercumulative conditions.

Figure E-1a

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative No Project Conditions

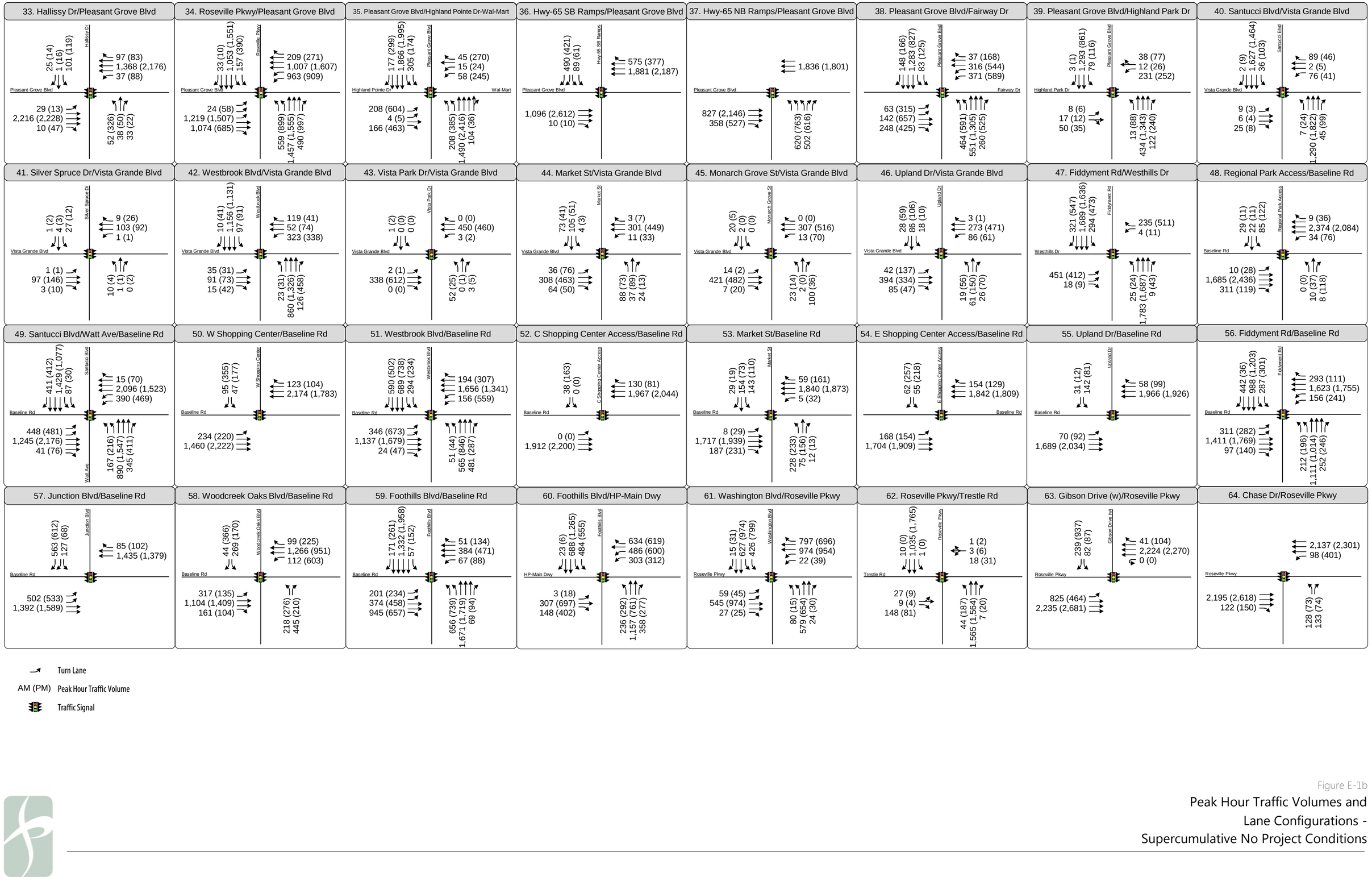


Figure E-1b

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative No Project Conditions

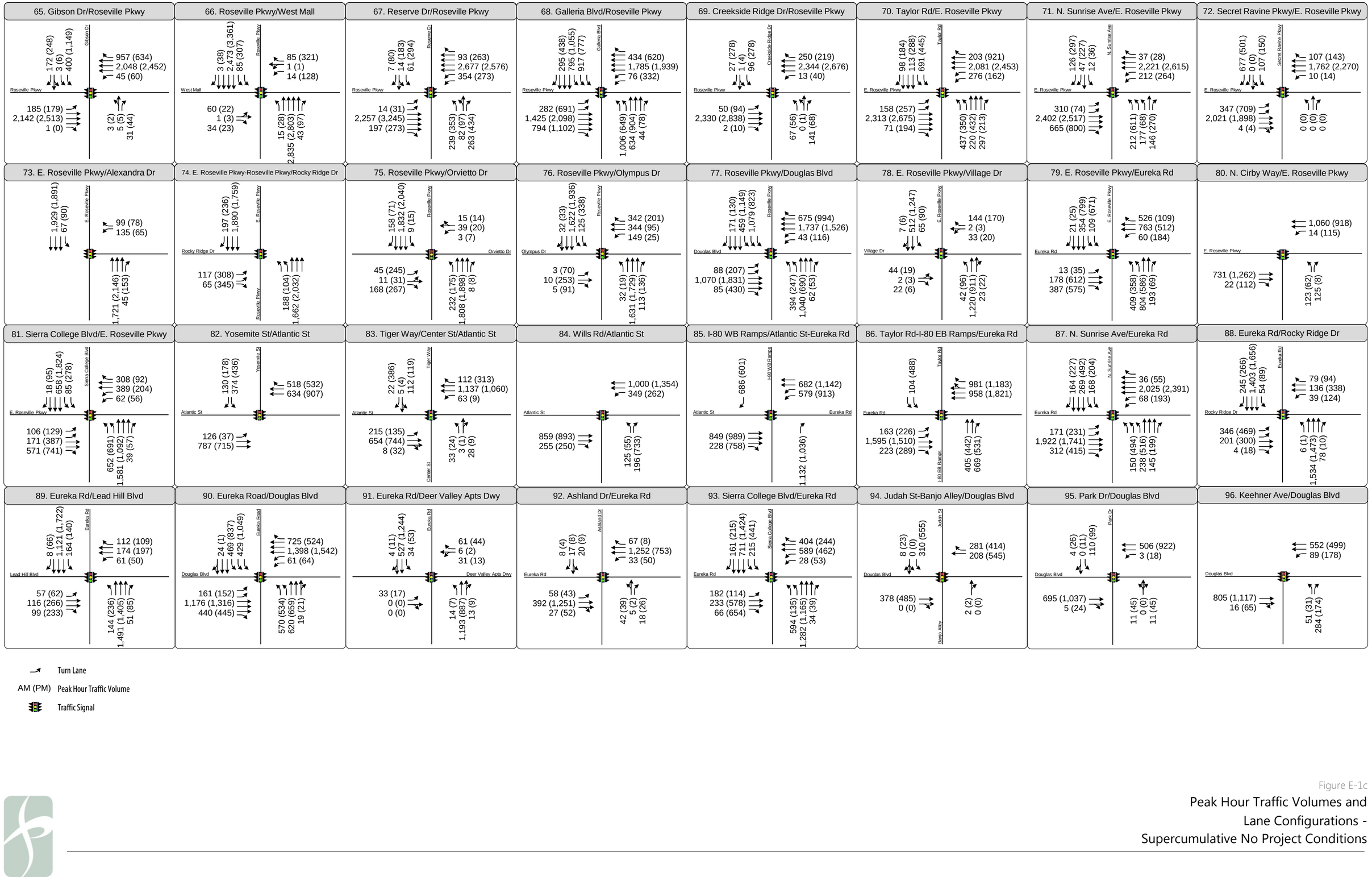


Figure E-1c

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative No Project Conditions

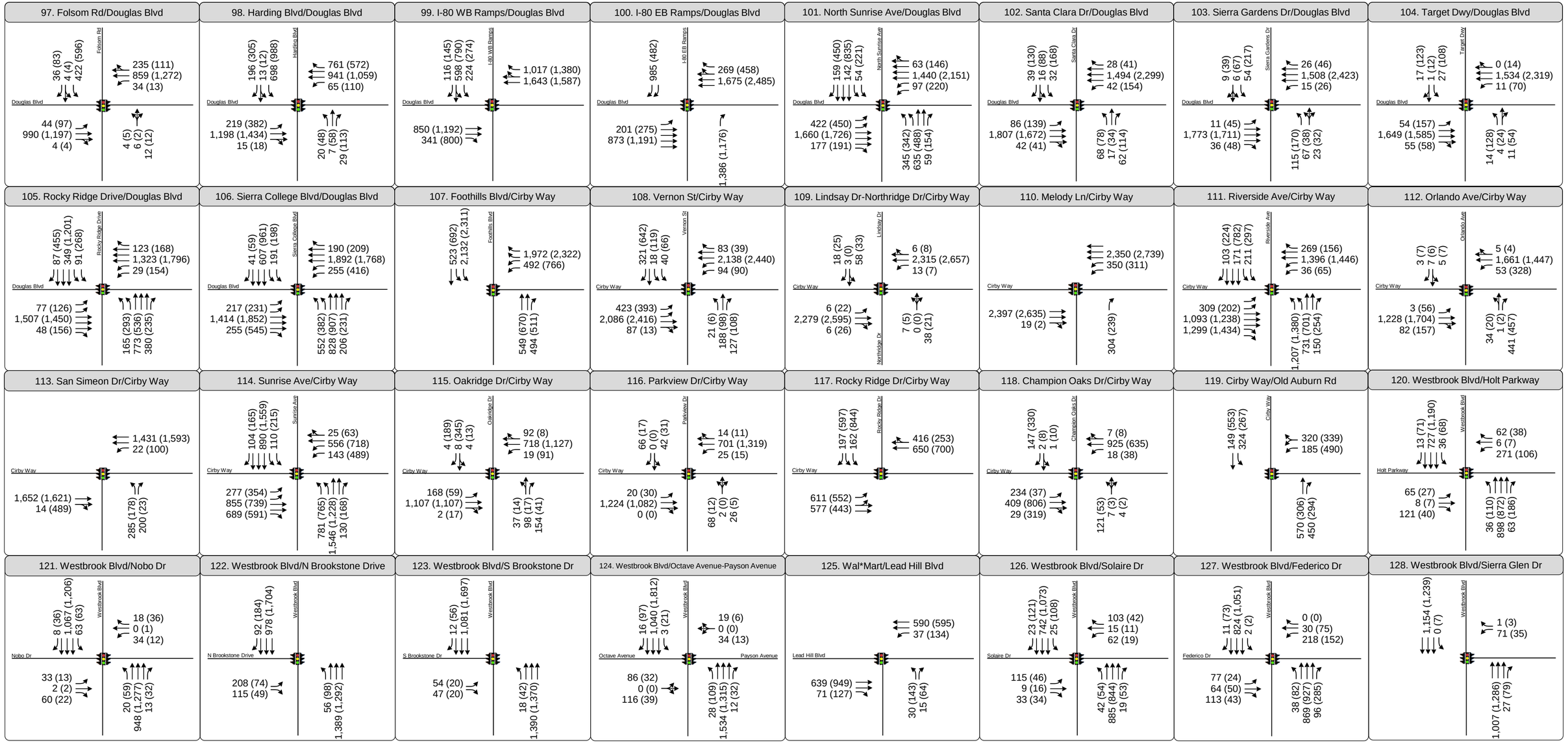
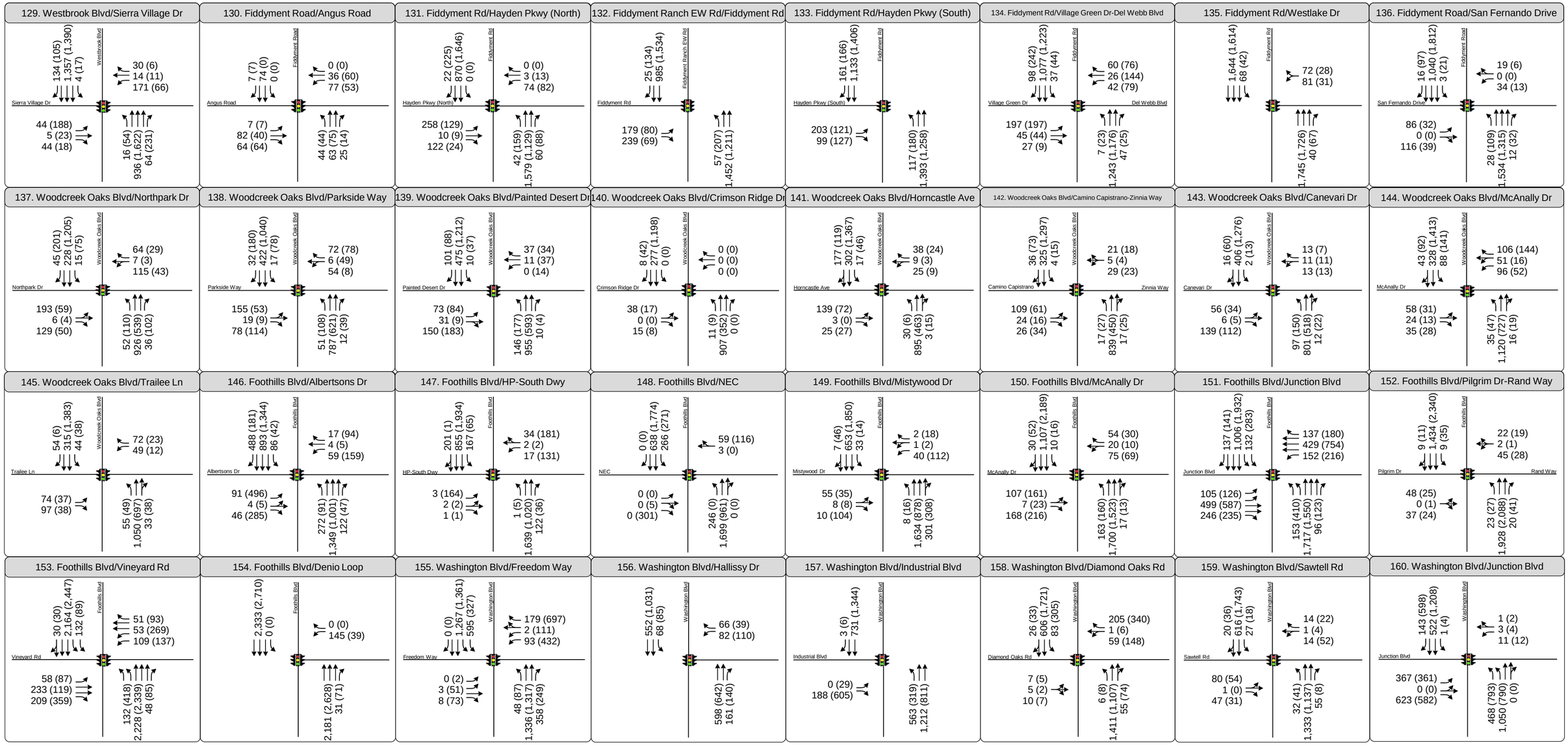


Figure E-1d

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative No Project Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure E-1e

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative No Project Conditions

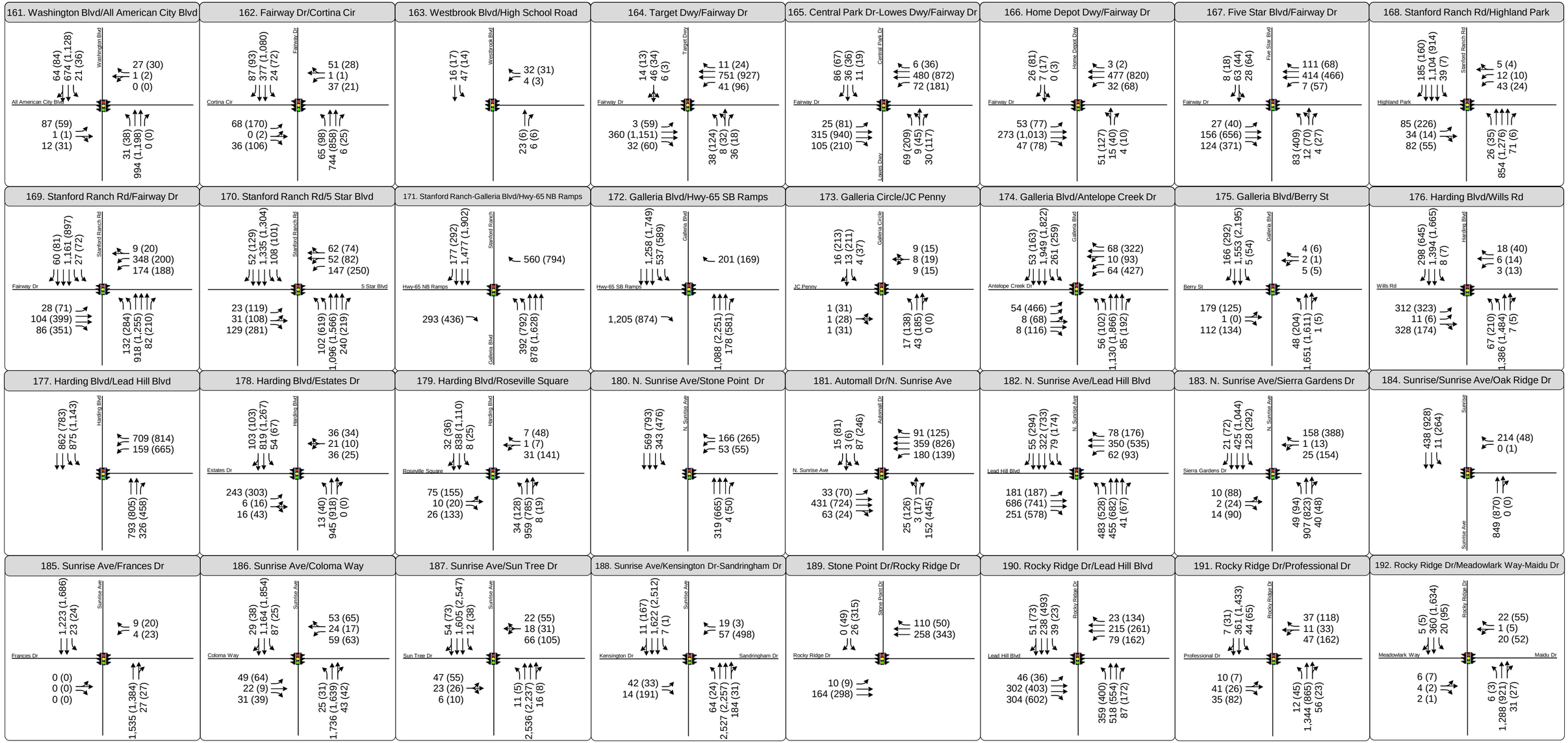
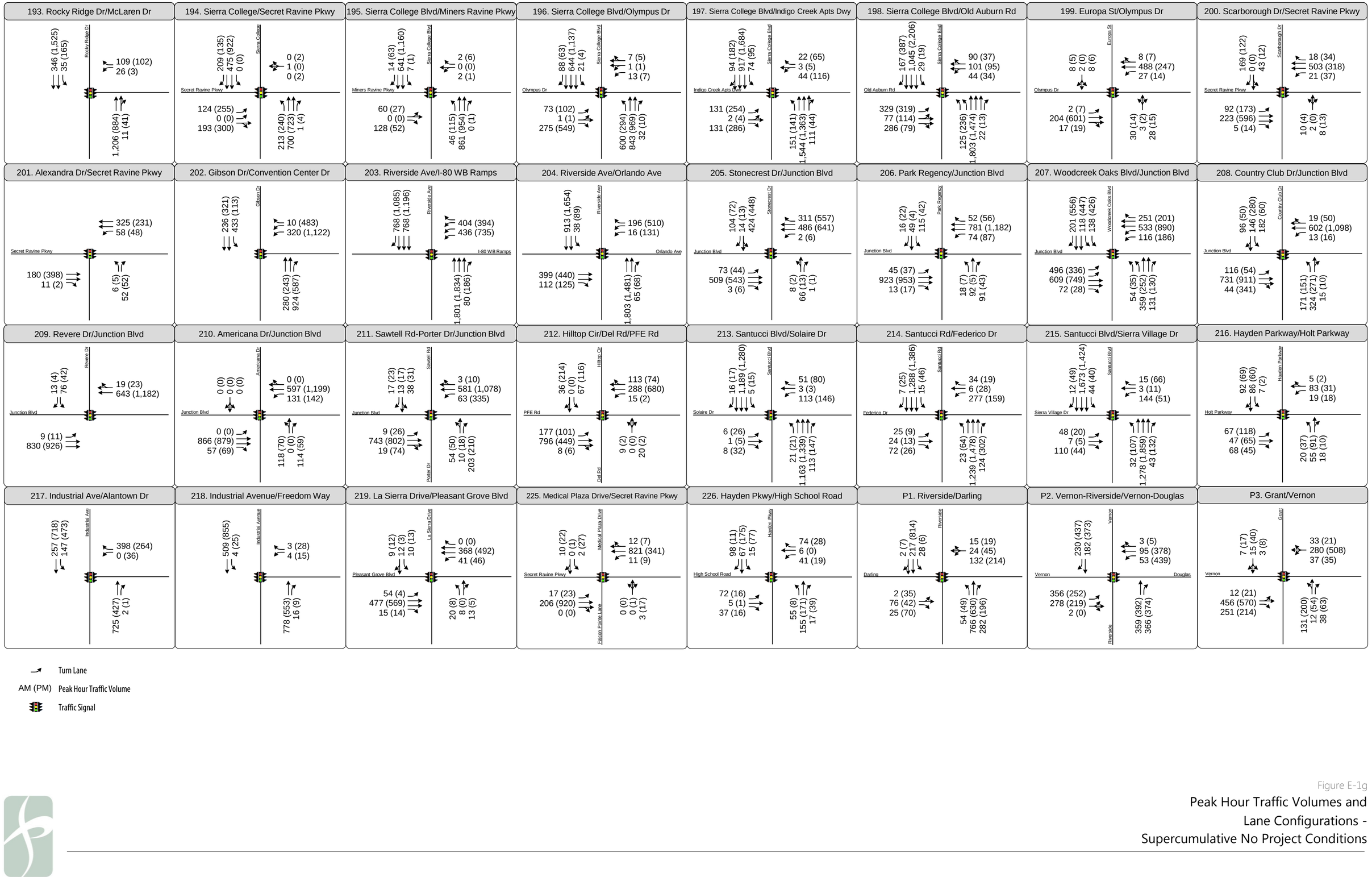


Figure E-1f

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative No Project Conditions



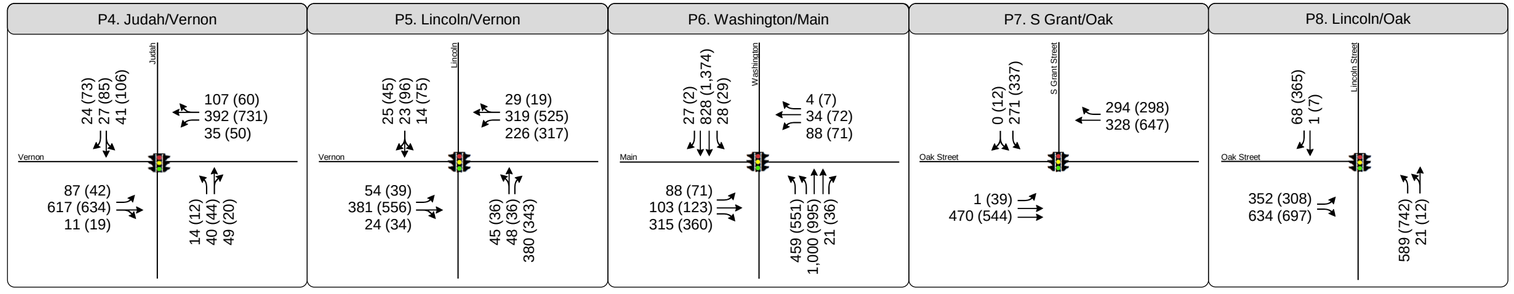
Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure E-1g

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative No Project Conditions



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Turn Lane

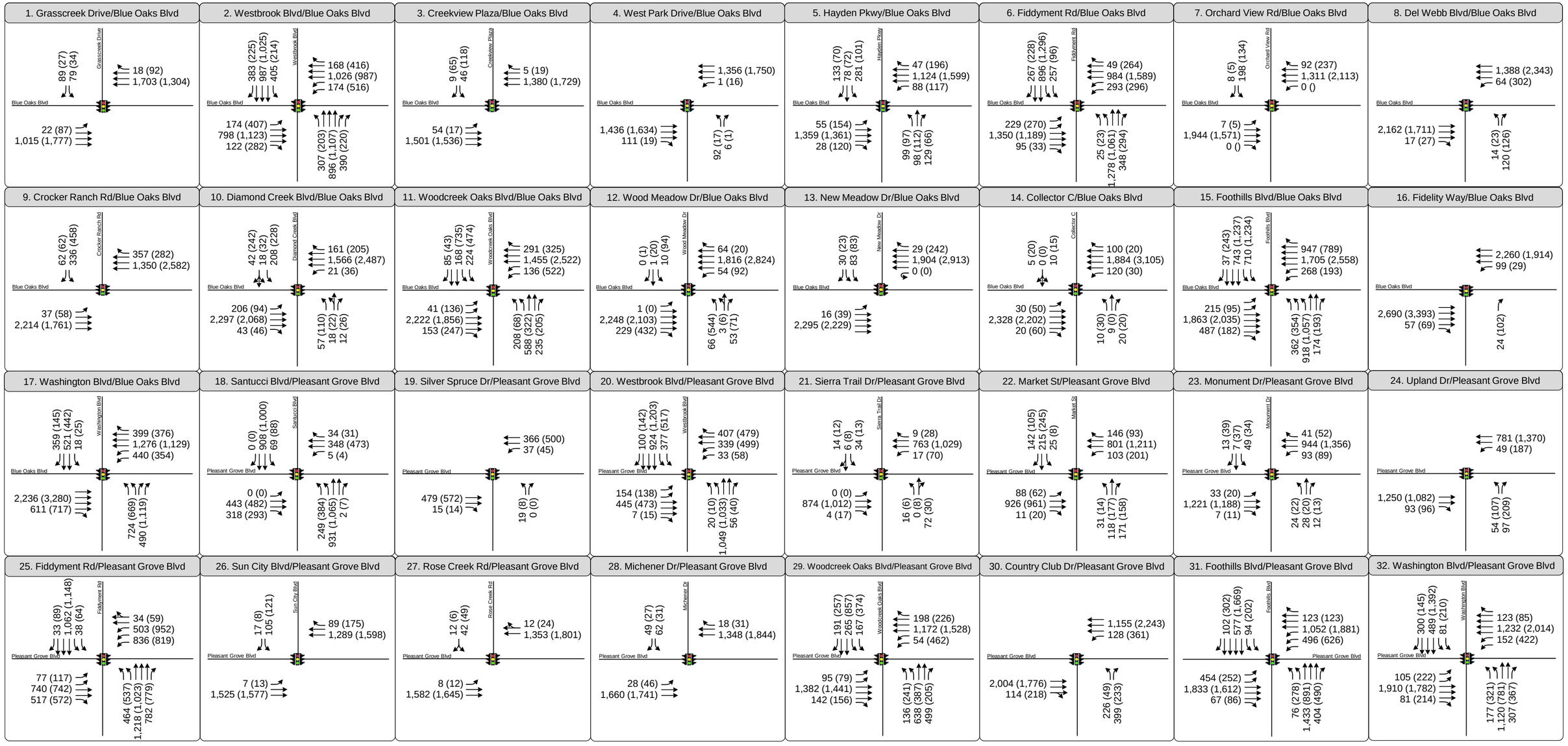
AM (PM) Peak Hour Traffic Volume

Traffic Signal

Figure E-1h

Peak Hour Traffic Volumes and
Lane Configurations -
Supercumulative No Project Conditions

SUPERCUMULATIVE PLUS PROJECT CONDITIONS



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Note: Lane configurations that are shown here are from the 2035 CIP/Cumulative scenarios. They do not represent a recommended set of lane configurations under supercumulative conditions.

Figure E-2a

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative Plus Project Conditions

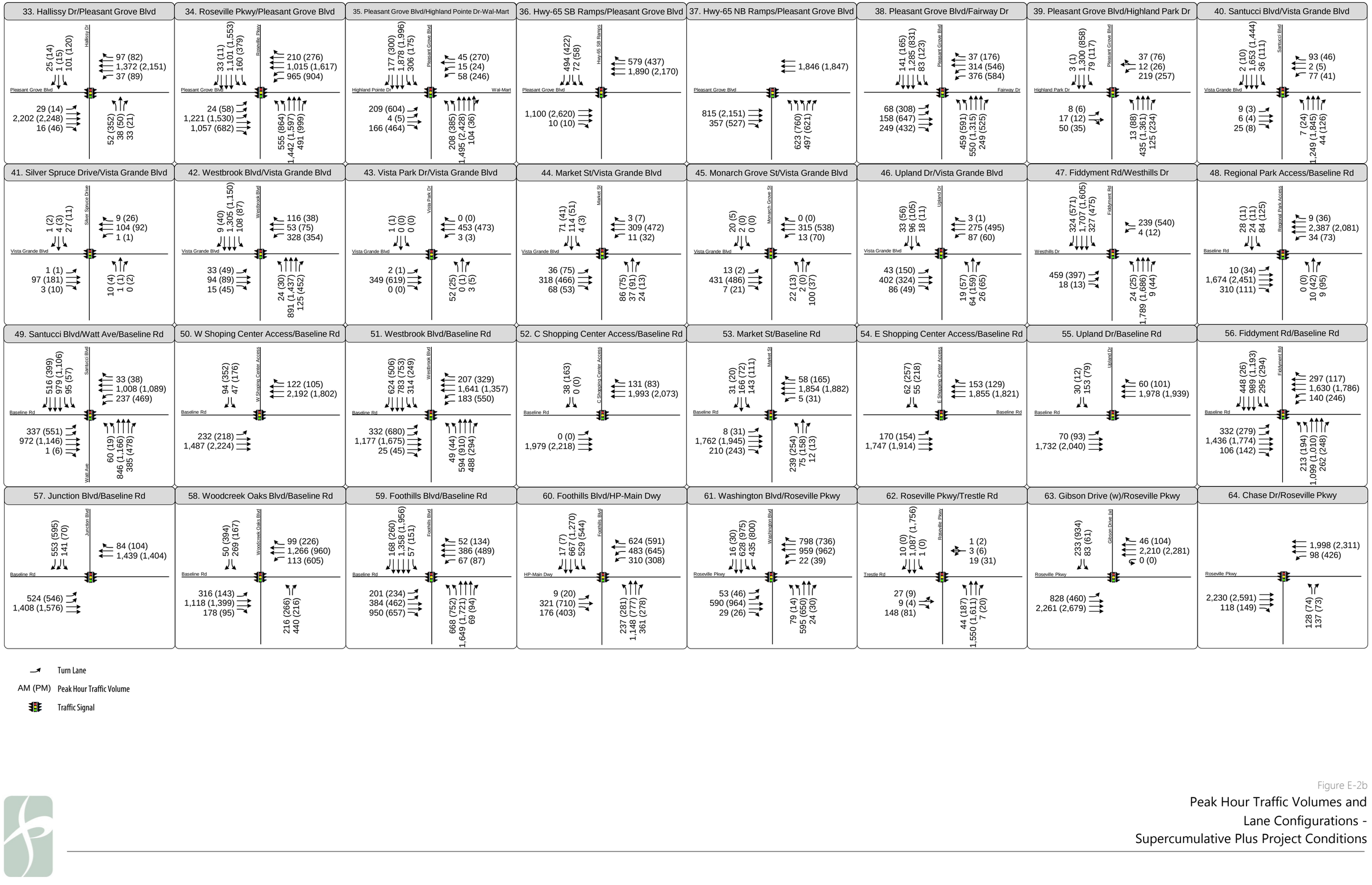


Figure E-2b

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative Plus Project Conditions

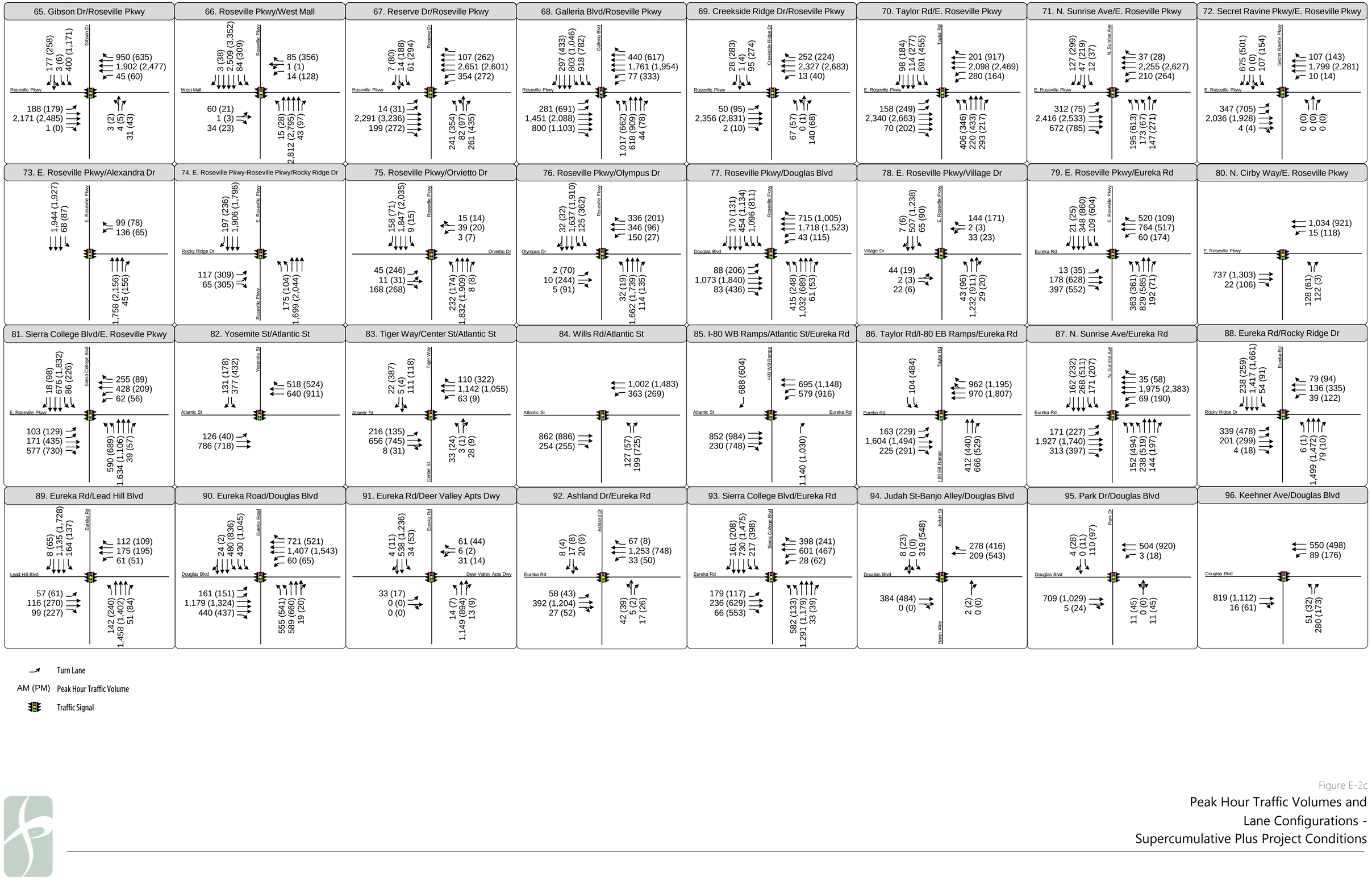


Figure E-2c

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative Plus Project Conditions

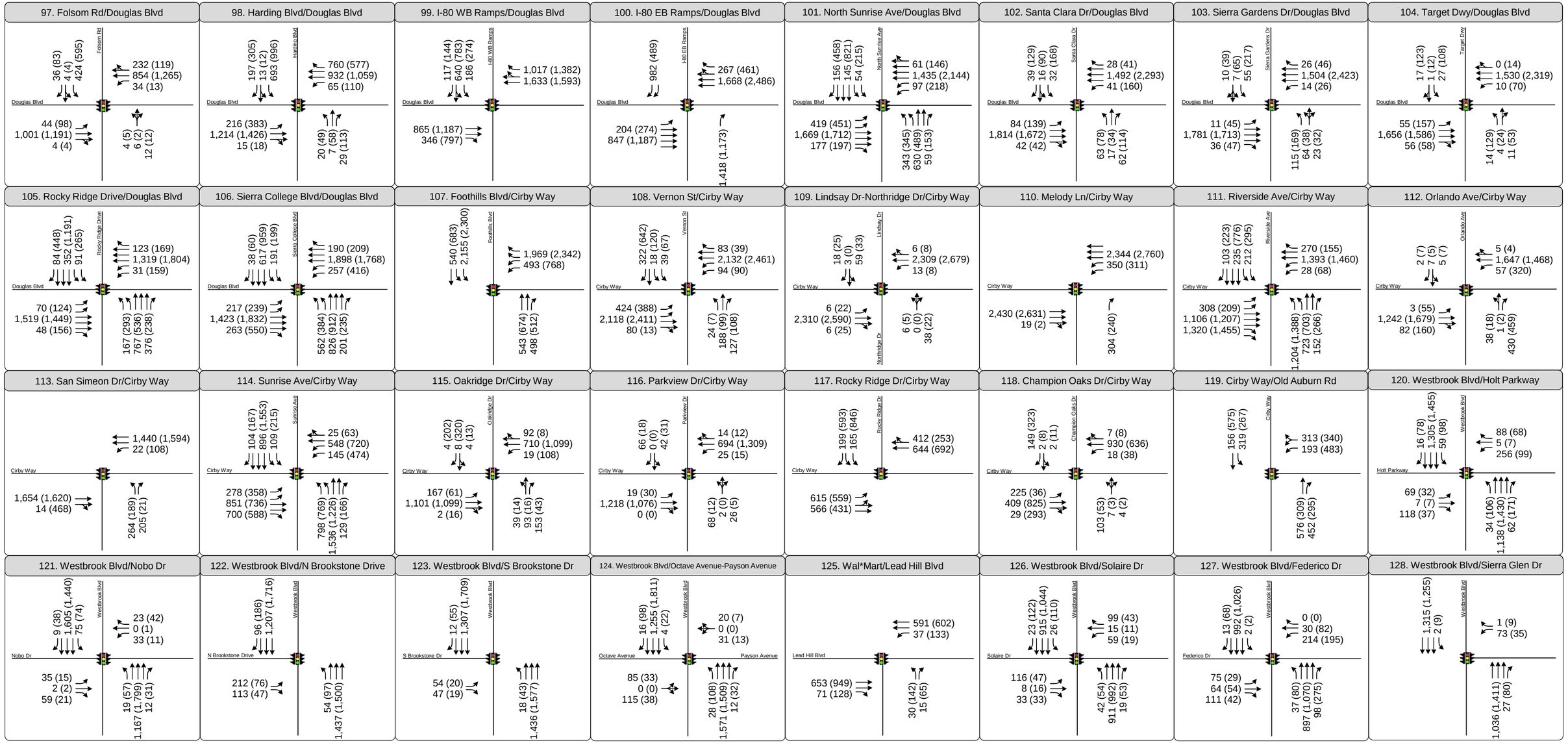


Figure E-2d

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative Plus Project Conditions

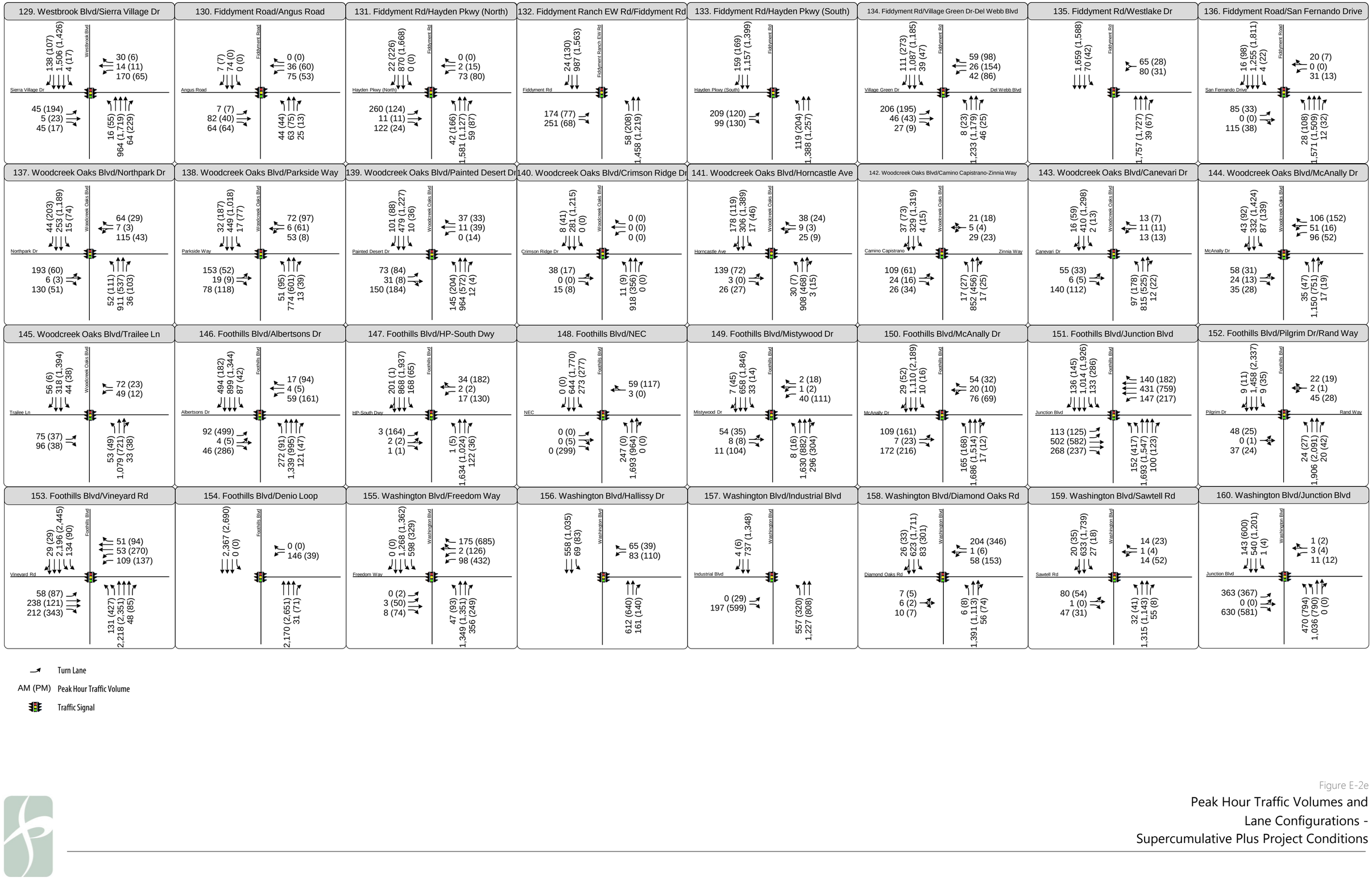


Figure E-2e

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative Plus Project Conditions

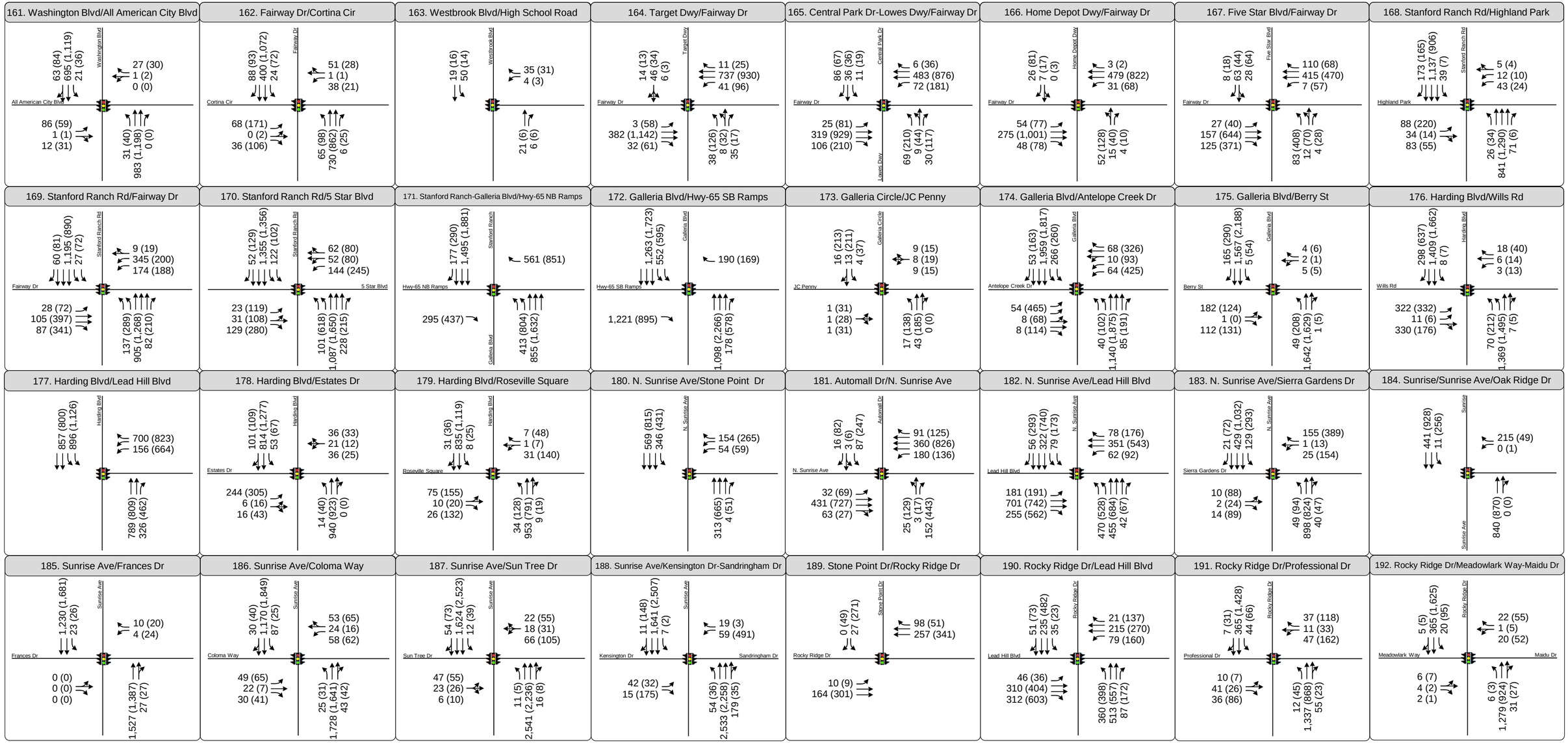


Figure E-2f

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative Plus Project Conditions

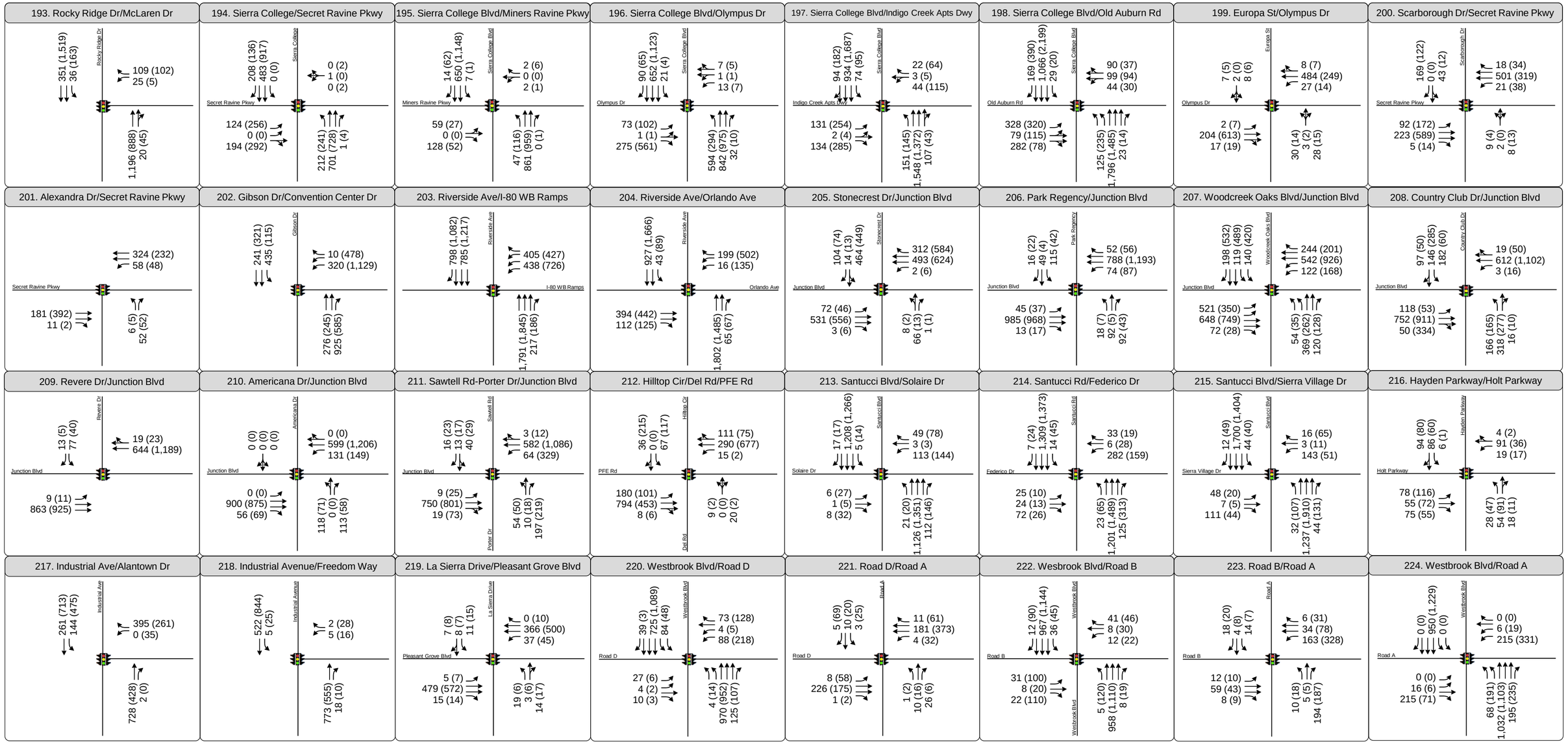
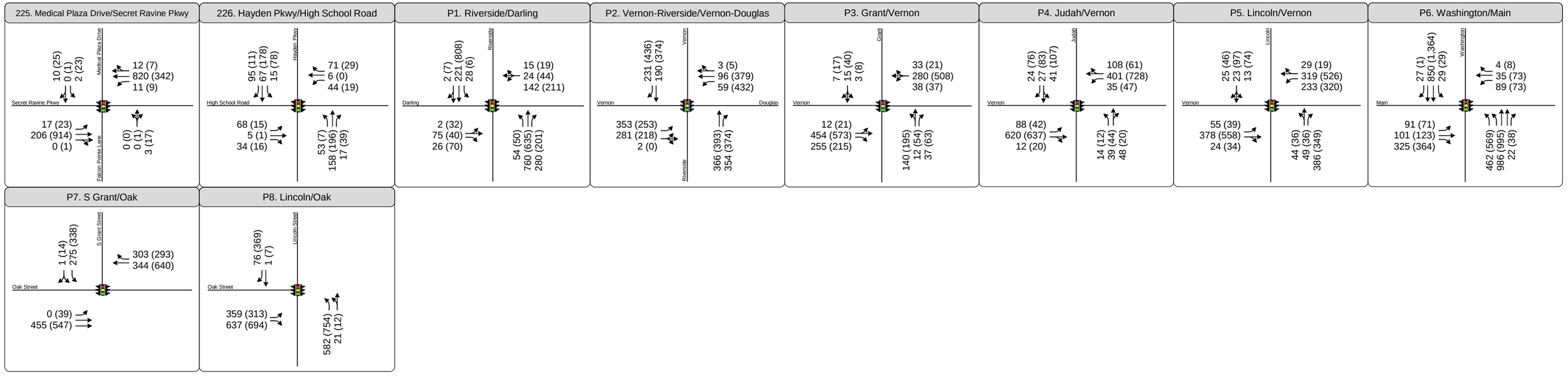


Figure E-2g

Peak Hour Traffic Volumes and Lane Configurations - Supercumulative Plus Project Conditions



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

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Figure E-2h

Peak Hour Traffic Volumes and
Lane Configurations -
Supercumulative Plus Project Conditions

		2035 Cumulative Plus Project - Alternative 1				2035 Cumulative Plus Project - Alternative 2				2035 Cumulative Plus Proposed Project			
		AM		PM		AM		PM		AM		PM	
Int No	Study Intersection	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Blue Oaks Blvd/Grasscreek Drive	14	B	15	B	14	B	15	B	14	B	15	B
2	Blue Oaks Blvd/Westbrook Blvd	26	C	33	C	26	C	33	C	27	C	35	C
3	Blue Oaks Blvd/Creekview Plaza	14	B	14	B	14	B	14	B	14	B	14	B
4	Blue Oaks Blvd/West Park Drive	13	B	13	B	13	B	13	B	13	B	13	B
5	Blue Oaks Blvd/Hayden Pkwy	30	C	24	C	30	C	24	C	31	C	25	C
6	Blue Oaks Blvd/Fiddyment Rd	35	C	36	D	35	C	36	D	35	C	36	D
7	Blue Oaks Blvd/Orchard View Rd	8	A	8	A	8	A	8	A	8	A	8	A
8	Blue Oaks Blvd/Del Webb Blvd	11	B	10	A	11	B	10	A	11	B	10	A
9	Blue Oaks Blvd/Crocker Ranch Rd	12	B	12	B	12	B	12	B	12	B	12	B
10	Blue Oaks Blvd/Diamond Creek Blvd	22	C	37	D	22	C	36	D	22	C	37	D
11	Blue Oaks Blvd/Woodcreek Oaks Blvd	31	C	64	E	31	C	62	E	31	C	64	E
12	Blue Oaks Blvd/Wood Meadow Dr	10	A	34	C	10	A	34	C	8	A	33	C
13	Blue Oaks Blvd/New Meadow Dr	3	A	15	B	3	A	15	B	4	A	15	B
14	Blue Oaks Blvd/Collector C	21	C	54	D	21	C	54	D	21	C	55	D
15	Blue Oaks Blvd/Foothills Blvd	34	C	101	F	34	C	98	F	34	C	100	F
16	Blue Oaks Blvd/Fidelity Way	4	A	10	A	4	A	10	A	4	A	10	A
17	Blue Oaks Blvd/Washington Blvd	32	C	56	E	32	C	51	D	33	C	59	E
18	Pleasant Grove Blvd/Santucci Blvd	21	C	28	C	21	C	29	C	21	C	28	C
19	Pleasant Grove Blvd/Silver Spruce Dr	7	A	9	A	7	A	9	A	7	A	8	A
20	Pleasant Grove Blvd/Westbrook Blvd	29	C	26	C	29	C	25	C	29	C	26	C
21	Pleasant Grove Blvd/Sierra Trail Dr	16	B	13	B	15	B	13	B	16	B	13	B
22	Pleasant Grove Blvd/Market St	32	C	28	C	31	C	28	C	33	C	29	C
23	Pleasant Grove Blvd/Monument Dr	15	B	14	B	15	B	14	B	15	B	14	B
24	Pleasant Grove Blvd/Upland Dr	11	B	12	B	11	B	12	B	11	B	11	B
25	Pleasant Grove Blvd/Fiddyment Rd	47	D	43	D	46	D	43	D	48	D	44	D
26	Pleasant Grove Blvd/Sun City Blvd	6	A	6	A	6	A	6	A	6	A	6	A
27	Pleasant Grove Blvd/Rose Creek Rd	4	A	5	A	4	A	5	A	4	A	5	A
28	Pleasant Grove Blvd/Michener Dr	6	A	6	A	6	A	6	A	6	A	7	A
29	Pleasant Grove Blvd/Woodcreek Oaks Blvd	23	C	35	D	24	C	36	D	24	C	35	D
30	Pleasant Grove Blvd/Country Club Dr	19	B	11	B	19	B	11	B	19	B	11	B
31	Pleasant Grove Blvd/Foothills Blvd	46	D	55	E	46	D	55	E	46	D	55	E
32	Pleasant Grove Blvd/Washington Blvd	35	C	41	D	35	C	41	D	35	D	41	D
33	Pleasant Grove Blvd/Hallissy Dr	9	A	33	C	9	A	32	C	9	A	33	C
34	Pleasant Grove Blvd/Roseville Pkwy	86	F	120	F	86	F	123	F	88	F	126	F
35	Highland Pointe Dr/Pleasant Grove Blvd	23	C	99	F	23	C	104	F	23	C	102	F
36	Pleasant Grove Blvd/Hwy-65 SB Ramps	9	A	14	B	9	A	14	B	9	A	17	B
37	Pleasant Grove Blvd/Hwy-65 NB Ramps	12	B	20	C	12	B	21	C	12	B	20	B
38	Fairway Dr/Pleasant Grove Blvd	38	D	85	F	38	D	80	E	38	D	82	F
39	Highland Park Dr/Pleasant Grove Blvd	19	B	25	C	19	B	25	C	19	B	25	C
40	Vista Grande Blvd/Santucci Blvd	14	B	14	B	14	B	14	B	14	B	14	B
41	Vista Grande Blvd/Silver Spruce Dr	14	B	16	B	14	B	15	B	14	B	15	B
42	Vista Grande Blvd/Westbrook Blvd	18	B	34	C	18	B	33	C	18	B	33	C
43	Vista Grande Blvd/Vista Park Dr	15	B	30	C	15	B	29	C	14	B	30	C
44	Vista Grande Blvd/Market St	18	B	25	C	18	B	25	C	18	B	25	C
45	Vista Grande Blvd/Monarch Grove St	21	C	15	B	21	C	15	B	21	C	15	B
46	Vista Grande Blvd/Upland Dr	15	B	23	C	15	B	22	C	15	B	23	C
47	Westhills Dr/Fiddyment Rd	30	C	31	C	30	C	31	C	31	C	32	C
48	Baseline Rd/Regional Park Access	17	B	17	B	17	B	17	B	17	B	17	B
49	Baseline Rd/Santucci Blvd	30	C	38	D	30	C	37	D	30	C	38	D
50	Baseline Rd/West Shopping Center Access	12	B	14	B	12	B	14	B	12	B	14	B
51	Baseline Rd/Westbrook Blvd	28	C	35	C	28	C	35	C	28	C	34	C
52	Baseline Rd/Central Shopping Center Acc.	5	A	6	A	5	A	6	A	5	A	6	A
53	Baseline Rd/Market St	19	B	17	B	19	B	17	B	19	B	17	B
54	Baseline Rd/East Shopping Center Access	10	B	14	B	10	B	14	B	11	B	14	B
55	Baseline Rd/Upland Dr	10	A	10	A	10	A	10	A	10	A	10	A
56	Baseline Rd/Fiddyment Rd	41	D	43	D	41	D	43	D	41	D	43	D
57	Baseline Rd/Junction Blvd	18	B	15	B	19	B	15	B	18	B	15	B
58	Baseline Rd/Woodcreek Oaks Blvd	43	D	39	D	44	D	39	D	43	D	39	D
59	Baseline Rd/Foothills Blvd	69	E	38	D	69	E	38	D	68	E	38	D
60	HP-Main Dwy/Foothills Blvd	40	D	55	E	39	D	55	D	41	D	54	D
61	Roseville Pkwy/Washington Blvd	22	C	36	D	22	C	37	D	22	C	36	D
62	Trestle Rd/Roseville Pkwy	9	A	21	C	9	A	21	C	9	A	22	C
63	Roseville Pkwy/Gibson Drive (w)	43	D	32	C	43	D	37	D	43	D	33	C
64	Roseville Pkwy/Chase Dr	8	A	24	C	8	A	22	C	8	A	24	C
65	Roseville Pkwy/Gibson Dr	13	B	52	D	13	B	52	D	12	B	54	D
66	West Mall/Roseville Pkwy	7	A	19	B	7	A	19	B	7	A	19	C
67	Roseville Pkwy/Reserve Dr	21	C	56	E	21	C	59	E	21	C	56	E
68	Roseville Pkwy/Galleria Blvd	40	D	67	E	39	D	67	E	40	D	67	E
69	Roseville Pkwy/Creekside Ridge Dr	14	B	25	C	14	B	25	C	14	B	26	C
70	E. Roseville Pkwy/Taylor Rd	44	D	61	E	45	D	60	E	45	D	61	E
71	E. Roseville Pkwy/N. Sunrise Ave	23	C	56	E	23	C	58	E	23	C	58	E
72	E. Roseville Pkwy/Secret Ravine Pkwy	21	C	59	E	21	C	58	E	21	C	62	E
73	Alexandra Dr/E. Roseville Pkwy	11	B	9	A	11	B	9	A	11	B	9	A
74	Rocky Ridge Dr/E. Roseville Pkwy	11	B	10	B	11	B	10	B	11	B	10	B
75	Orvietto Dr/Roseville Pkwy	23	C	20	B	23	C	20	B	23	C	20	B
76	Olympus Dr/Roseville Pkwy	13	B	21	C	13	B	21	C	13	B	21	C
77	Douglas Blvd/Roseville Pkwy	48	D	61	E	49	D	65	E	49	D	58	E
78	Village Dr/E. Roseville Pkwy	19	B	20	B	19	B	19	B	19	B	20	C
79	Eureka Rd/E. Roseville Pkwy	27	C	35	C	27	C	35	D	27	C	36	D
80	E. Roseville Pkwy/N. Cirby Way	6	A	7	A	6	A	7	A	6	A	7	A
81	E. Roseville Pkwy/Sierra College Blvd	25	C	37	D	25	C	40	D	25	C	37	D
82	Atlantic St/Yosemite St	18	B	14	B	18	B	14	B	18	B	14	B
83	Atlantic St/Tiger Way	17	B	27	C	17	B	27	C	17	B	26	C
84	Atlantic St/Wills Rd	14	B	13	B	14	B	13	B	14	B	13	B
85	Atlantic St/I-80 WB Ramps	5	A	30	C	5	A	30	C	5	A	30	C
86	Eureka Rd/Taylor Rd	29	C	56	E	29	C	55	D	30	C	55	E
87	Eureka Rd/N. Sunrise Ave	19	B	59	E	19	B	52	D	19	B	57	E
88	Rocky Ridge Dr/Eureka Rd	21	C	28	C	22	C	28	C	21	C	28	C
89	Lead Hill Blvd/Eureka Rd	22	C	24	C	22	C	23	C	22	C	23	C
90	Douglas Blvd/Eureka Road	29	C	66	E	29	C	63	E	29	C	65	E
91	Deer Valley Apts Dwy/Eureka Rd	13	B	9	A	13	B	9	A	13	B	9	A
92	Eureka Rd/Ashland Dr	12	B	11	B	12	B	11	B	12	B	11	B
93	Eureka Rd/Sierra College Blvd	33	C	28	C	32	C	28	C	33	C	28	C

		2035 Cumulative Plus Project - Alternative 1				2035 Cumulative Plus Project - Alternative 2				2035 Cumulative Plus Proposed Project			
		AM		PM		AM		PM		AM		PM	
Int No	Study Intersection	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
94	Douglas Blvd/Judah St	9	A	20	B	9	A	20	B	9	A	20	B
95	Douglas Blvd/Park Dr	9	A	10	A	9	A	10	A	9	A	10	A
96	Douglas Blvd/Keehner Ave	9	A	8	A	9	A	8	A	9	A	8	A
97	Douglas Blvd/Folsom Rd	19	B	23	C	19	B	22	C	19	B	22	C
98	Douglas Blvd/Harding Blvd	50	D	52	D	50	D	52	D	50	D	52	D
99	Douglas Blvd/I-80 WB Ramps	39	D	82	F	39	D	82	F	39	D	82	F
100	Douglas Blvd/I-80 EB Ramps	10	A	9	A	10	B	8	A	10	A	9	A
101	Douglas Blvd/North Sunrise Ave	28	C	59	E	28	C	60	E	28	C	63	E
102	Douglas Blvd/Santa Clara Dr	8	A	29	C	8	A	28	C	8	A	29	C
103	Douglas Blvd/Sierra Gardens Dr	9	A	28	C	9	A	29	C	9	A	29	C
104	Douglas Blvd/Target Dwy	6	A	40	D	6	A	38	D	6	A	38	D
105	Douglas Blvd/Rocky Ridge Drive	28	C	48	D	28	C	48	D	28	C	49	D
106	Douglas Blvd/Sierra College Blvd	37	D	41	D	37	D	41	D	38	D	41	D
107	Cirby Way/Foothills Blvd	82	F	71	E	82	F	70	E	82	F	71	E
108	Cirby Way/Vernon St	46	D	74	E	46	D	74	E	46	D	68	E
109	Cirby Way/Lindsay Dr	20	C	10	A	20	B	8	A	20	C	10	A
110	Cirby Way/Melody Ln	16	B	16	B	15	B	15	B	15	B	13	B
111	Cirby Way/Riverside Ave	48	D	153	F	47	D	143	F	48	D	140	F
112	Cirby Way/Orlando Ave	15	B	24	C	15	B	24	C	15	B	24	C
113	Cirby Way/San Simeon Dr	11	B	10	B	11	B	11	B	11	B	12	B
114	Cirby Way/Sunrise Ave	42	D	65	E	42	D	65	E	42	D	65	E
115	Cirby Way/Oakridge Dr	18	B	24	C	18	B	24	C	17	B	24	C
116	Cirby Way/Parkview Dr	7	A	6	A	7	A	6	A	7	A	6	A
117	Cirby Way/Rocky Ridge Dr	19	B	32	C	19	B	32	C	19	B	31	C
118	Cirby Way/Champion Oaks Dr	12	B	10	A	12	B	10	A	12	B	10	A
119	Old Auburn Rd/Cirby Way	20	B	15	B	20	B	15	B	20	B	15	B
120	Parkway One/Westbrook Blvd	18	B	16	B	18	B	17	B	18	B	16	B
121	Nobo Dr/Westbrook Blvd	10	B	12	B	10	B	12	B	11	B	12	B
122	N Brookstone Drive/Westbrook Blvd	8	A	8	A	8	A	8	A	8	A	8	A
123	S Brookstone Dr/Westbrook Blvd	6	A	6	A	6	A	6	A	6	A	6	A
124	Octave Avenue/Westbrook Blvd	16	B	16	B	16	B	16	B	16	B	16	B
125	Lead Hill Blvd/Wal*Mart	4	A	9	A	4	A	9	A	4	A	9	A
126	Solaire Dr/Westbrook Blvd	14	B	17	B	14	B	17	B	14	B	17	B
127	Federico Dr/Westbrook Blvd	19	B	17	B	19	B	17	B	19	B	17	B
128	Sierra Glen Dr/Westbrook Blvd	5	A	4	A	5	A	4	A	5	A	4	A
129	Sierra Village Dr/Westbrook Blvd	16	B	18	B	16	B	17	B	16	B	17	B
130	Angus Road/Fiddyment Road	29	C	25	C	30	C	25	C	30	C	25	C
131	Hayden Pkwy (North)/Fiddyment Rd	19	B	27	C	19	B	27	C	19	B	27	C
132	Fiddyment Rd/Fiddyment Ranch EW Rd	11	B	15	B	11	B	15	B	11	B	15	B
133	Hayden Pkwy (South)/Fiddyment Rd	11	B	9	A	11	B	9	A	11	B	9	A
134	Village Green Dr/Fiddyment Rd	19	B	19	B	19	B	19	B	19	B	19	B
135	Westlake Dr/Fiddyment Rd	9	A	6	A	9	A	6	A	9	A	6	A
136	San Fernando Drive/Fiddyment Road	13	B	12	B	13	B	12	B	13	B	12	B
137	Northpark Dr/Woodcreek Oaks Blvd	22	C	21	C	22	C	21	C	21	C	17	C
138	Parkside Way/Woodcreek Oaks Blvd	19	B	20	B	18	B	20	B	19	B	20	C
139	Painted Desert Dr/Woodcreek Oaks Blvd	15	B	17	B	15	B	18	B	15	B	17	B
140	Crimson Drige Dr/Woodcreek Oaks Blvd	31	C	12	B	30	C	12	B	31	C	12	B
141	Horncastle Ave/Woodcreek Oaks Blvd	13	B	12	B	13	B	12	B	13	B	12	B
142	Camino Capistrano/Woodcreek Oaks Blvd	13	B	14	B	13	B	14	B	13	B	14	B
143	Canevari Dr/Woodcreek Oaks Blvd	12	B	17	B	12	B	17	B	12	B	17	B
144	McAnally Dr/Woodcreek Oaks Blvd	26	C	22	C	26	C	22	C	26	C	22	C
145	Trailee Ln/Woodcreek Oaks Blvd	16	B	15	B	16	B	15	B	16	B	15	B
146	Albertsons Dr/Foothills Blvd	17	B	20	C	17	B	21	C	17	B	21	C
147	HP-South Dwy/Foothills Blvd	8	A	15	B	8	A	15	B	8	A	15	B
148	NEC/Foothills Blvd	27	C	18	B	26	C	18	B	27	C	18	B
149	Mistywood Dr/Foothills Blvd	10	B	12	B	10	B	12	B	10	B	12	B
150	McAnally Dr/Foothills Blvd	15	B	21	C	15	B	21	C	15	B	21	C
151	Junction Blvd/Foothills Blvd	33	C	42	D	32	C	41	D	33	C	42	D
152	Pilgrim Dr/Foothills Blvd	9	A	7	A	9	A	7	A	9	A	7	A
153	Vineyard Rd/Foothills Blvd	24	C	27	C	24	C	27	C	24	C	27	C
154	Denio Loop/Foothills Blvd	13	B	12	B	13	B	12	B	13	B	12	B
155	Freedom Way/Washington Blvd	17	B	32	C	17	B	32	C	17	B	32	C
156	Hallissy Dr/Washington Blvd	7	A	7	A	7	A	7	A	7	A	7	A
157	Industrial Blvd/Washington Blvd	13	B	30	C	13	B	30	C	13	B	30	C
158	Diamond Oaks Rd/Washington Blvd	11	B	18	B	11	B	18	B	11	B	18	B
159	Sawtell Rd/Washington Blvd	10	A	13	B	10	A	13	B	10	A	13	B
160	Junction Blvd/Washington Blvd	17	B	23	C	17	B	23	C	17	B	23	C
161	All American City Blvd/Washington Blvd	12	B	13	B	12	B	13	B	12	B	13	B
162	Cortina Cir/Fairway Dr	17	B	19	B	17	B	19	B	17	B	19	B
163	Fairway Dr/Highland Park Dr	15	B	11	B	15	B	11	B	15	B	11	B
163	High School Road/Westbrook Blvd	10	A	6	A	10	A	6	A	10	A	6	A
164	Fairway Dr/Target Dwy	10	A	12	B	10	A	12	B	10	A	12	B
165	Fairway Dr/Central Park Dr	11	B	19	B	11	B	19	B	11	B	19	B
166	Fairway Dr/Home Depot Dwy	10	A	28	C	10	A	28	C	10	A	28	C
167	Fairway Dr/Five Star Blvd	11	B	21	C	11	B	21	C	11	B	21	C
168	Highland Park/Stanford Ranch Rd	12	B	11	B	12	B	11	B	12	B	11	B
169	Fairway Dr/Stanford Ranch Rd	28	C	30	C	28	C	29	C	28	C	28	C
170	5 Star Blvd/Stanford Ranch Rd	20	B	40	D	20	B	40	D	20	B	40	D
171	Hwy-65 NB Ramps/Stanford Ranch	5	A	19	B	5	A	19	B	5	A	19	B
172	Hwy-65 SB Ramps/Galleria Blvd	69	E	35	D	69	E	37	D	69	E	34	C
173	JC Penny/Galleria Circle	13	B	15	B	13	B	15	B	13	B	15	B
174	Antelope Creek Dr/Galleria Blvd	10	A	64	E	10	A	79	E	10	A	67	E
175	Berry St/Galleria Blvd	17	B	26	C	16	B	26	C	17	B	26	C
176	Wills Rd/Harding Blvd	18	B	19	B	18	B	19	B	18	B	19	B
177	Lead Hill Blvd/Harding Blvd	20	B	30	C	20	B	30	C	19	B	30	C
178	Estates Dr/Harding Blvd	19	B	25	C	19	B	26	C	19	B	26	C
179	Roseville Square/Harding Blvd	12	B	30	C	12	B	30	C	12	B	30	C
180	Stone Point Dr/N. Sunrise Ave	10	A	12	B	10	A	13	B	10	A	12	B
181	N. Sunrise Ave/Automall Dr	20	B	27	C	18	B	27	C	19	B	28	C
182	Lead Hill Blvd/N. Sunrise Ave	23	C	32	C	23	C	31	C	23	C	31	C
183	Sierra Gardens Dr/N. Sunrise Ave	15	B	22	C	15	B	22	C	15	B	22	C
184	Oak Ridge Dr/Sunrise Ave	6	A	8	A	6	A	8	A	6	A	7	A
185	Frances Dr/Sunrise Ave	5	A	6	A	5	A	6	A	5	A	6	A

		2035 Cumulative Plus Project - Alternative 1				2035 Cumulative Plus Project - Alternative 2				2035 Cumulative Plus Proposed Project			
		AM		PM		AM		PM		AM		PM	
Int No	Study Intersection	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
186	Coloma Way/Sunrise Ave	18	B	18	B	18	B	18	B	18	B	18	B
187	Sun Tree Dr/Sunrise Ave	10	A	19	B	10	A	20	B	10	A	20	B
188	Kensington Dr/Sunrise Ave	8	A	25	C	8	A	25	C	8	A	26	C
189	Rocky Ridge Dr/Stone Point Dr	4	A	8	A	4	A	9	A	4	A	8	A
190	Lead Hill Blvd/Rocky Ridge Dr	17	B	24	C	17	B	25	C	18	B	25	C
191	Professional Dr/Rocky Ridge Dr	9	A	13	B	9	A	13	B	9	A	13	B
192	Meadowlark Way/Rocky Ridge Dr	3	A	7	A	3	A	7	A	3	A	7	A
193	McLaren Dr/Rocky Ridge Dr	8	A	7	A	8	A	7	A	8	A	7	A
194	Secret Ravine Pkwy/Sierra College	14	B	25	C	14	B	25	C	14	B	25	C
195	Miners Ravine Pkwy/Sierra College Blvd	12	B	13	B	12	B	13	B	12	B	13	B
196	Olympus Dr/Sierra College Blvd	23	C	26	C	23	C	26	C	23	C	26	C
197	Indigo Creek Apts Dwy/Sierra College Blvd	21	C	27	C	21	C	28	C	21	C	27	C
198	Old Auburn Rd/Sierra College Blvd	30	C	28	C	30	C	28	C	30	C	28	C
199	Olympus Dr/Europa St	8	A	6	A	8	A	6	A	8	A	6	A
200	Secret Ravine Pkwy/Scarborough Dr	14	B	13	B	14	B	13	B	14	B	13	B
201	Secret Ravine Pkwy/Alexandra Dr	9	A	9	A	9	A	9	A	9	A	9	A
202	Convention Center Dr/Gibson Dr	61	E	19	B	61	E	19	B	61	E	19	B
203	I-80 WB Ramps/Riverside Ave	17	B	85	F	17	B	85	F	17	B	90	F
204	Orlando Ave/Riverside Ave	32	C	70	E	33	C	65	E	32	C	70	E
205	Junction Blvd/Stonecrest Dr	19	B	13	B	19	B	13	B	20	B	13	B
206	Junction Blvd/Park Regency Dr	24	C	17	B	24	C	17	B	25	C	17	B
207	Junction Blvd/Woodcreek Oaks Blvd	18	B	25	C	18	B	24	C	18	B	25	C
208	Junction Blvd/Country Club Dr	31	C	25	C	31	C	25	C	31	C	25	C
209	Junction Blvd/Revere Dr	4	A	5	A	4	A	5	A	4	A	5	A
210	Junction Blvd/Americana Dr	11	B	7	A	11	B	7	A	11	B	7	A
211	Junction Blvd/Sawtell Rd	9	A	10	B	9	A	10	A	9	A	10	B
212	PFE Rd/Hilltop Cir	12	B	14	B	12	B	14	B	12	B	14	B
213	Solaire Dr/Santucci Blvd	16	B	19	B	16	B	20	B	16	B	20	B
214	Federico Dr/Santucci Rd	23	C	22	C	23	C	22	C	23	C	22	C
215	Sierra Village Dr/Santucci Blvd	18	B	14	B	18	B	14	B	18	B	14	B
217	Alantown Dr/Industrial Ave	20	B	18	B	20	B	18	B	20	B	18	B
218	Freedom Way/Industrial Avenue	4	A	4	A	4	A	4	A	4	A	4	A
219	Pleasant Grove Blvd/La Sierra Drive	28	C	30	C	28	C	29	C	28	C	30	C
220	Westbrook Blvd/Road D	14	B	14	B	14	B	15	B	14	B	15	B
221	Road D/Road A	14	B	17	B	14	B	17	B	14	B	17	B
222	Westbrook Blvd/Road B	13	B	19	B	13	B	19	B	13	B	19	B
223	Road A/Road B	20	C	21	C	20	C	21	C	20	C	21	C
224	Westbrook Blvd/Road A	15	B	17	B	15	B	17	B	15	B	17	B
225	Secret Ravine Pkwy/Medical Plaza Drive	17	B	15	B	17	B	15	B	17	B	15	B
226	High School Road/Hayden Pkwy	20	B	26	C	20	B	25	C	20	B	26	C
P1	Darling/Riverside	22	C	19	B	22	C	19	B	22	C	19	B
P2	Vernon/Douglas	25	C	49	D	24	C	48	D	24	C	49	D
P3	Vernon/Grant	6	A	7	A	6	A	8	A	6	A	7	A
P4	Vernon/Judah	5	A	9	A	5	A	9	A	5	A	9	A
P5	Vernon/Lincoln	12	B	30	C	12	B	30	C	12	B	31	C
P6	Main/Washington	23	C	37	D	23	C	37	D	23	C	37	D
P7	Oak/S Grant	7	A	12	B	7	A	12	B	7	A	12	B
P8	Oak/Lincoln	13	B	21	C	13	B	21	C	13	B	22	C
	LOS C or Better	205		180		205		178		204		180	
	Total Number of Intersections	226		226		226		226		226		226	
	Operating at LOS C or Better %	91%		80%		91%		79%		90%		80%	

LOS Summary

	2035 Cumulative Plus Project - Alternative 1		2035 Cumulative Plus Project - Alternative 2		2035 Cumulative Plus Proposed Project	
	AM	PM	AM	PM	AM	PM
LOS A	53	37	52	38	53	37
LOS B	101	79	103	78	101	77
LOS C	51	64	50	62	50	66
LOS D	16	20	16	26	17	21
LOS E	3	19	3	16	3	18
LOS F	2	7	2	6	2	7

LOS exempted
LOS results from SimTraffic simulation