

JAA MPR Traffic Analysis
7: Harding Blvd & Lead Hill Blvd

Cumulative Plus Project Conditions
School PM Peak

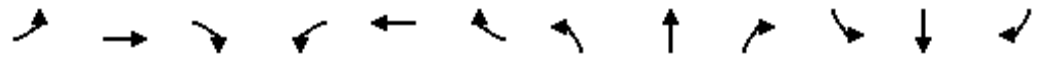


Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	647	527	837	466	1080	816
Future Volume (vph)	647	527	837	466	1080	816
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	1.7	1.7	1.7	3.0
Lane Util. Factor	0.97	0.91	0.95	1.00	0.97	0.95
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.97	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.96	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3372	1441	3539	1583	3433	3539
Flt Permitted	0.96	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3372	1441	3539	1583	3433	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	703	573	910	507	1174	887
RTOR Reduction (vph)	30	282	0	359	0	0
Lane Group Flow (vph)	845	119	910	148	1174	887
Confl. Peds. (#/hr)	484					
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	20.0	20.0	18.0	18.0	25.0	47.0
Effective Green, g (s)	21.0	22.3	20.3	20.3	27.3	48.0
Actuated g/C Ratio	0.28	0.30	0.27	0.27	0.36	0.64
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	944	428	957	428	1249	2264
v/s Ratio Prot	c0.25		c0.26		c0.34	0.25
v/s Ratio Perm		0.08		0.09		
v/c Ratio	0.90	0.28	0.95	0.35	0.94	0.39
Uniform Delay, d1	25.9	20.2	26.9	22.0	23.1	6.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.9	0.4	18.3	0.5	13.4	0.1
Delay (s)	36.9	20.5	45.2	22.5	36.5	6.6
Level of Service	D	C	D	C	D	A
Approach Delay (s)	31.7		37.1			23.6
Approach LOS	C		D			C

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.4
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

JAA MPR Traffic Analysis
8: N. Sunrise Ave & Lead Hill Blvd

Cumulative Plus Project Conditions
School PM Peak

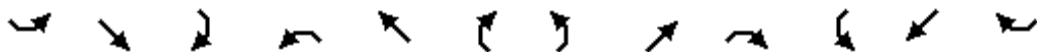


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	544	478	86	585	162	324	406	62	169	628	349
Future Volume (vph)	153	544	478	86	585	162	324	406	62	169	628	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.0	2.0	3.0	1.3	1.3	3.0	1.7	3.0	3.0	1.7	1.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	166	591	520	93	636	176	352	441	67	184	683	379
RTOR Reduction (vph)	0	0	370	0	0	131	0	0	48	0	0	305
Lane Group Flow (vph)	166	591	150	93	636	45	352	441	19	184	683	74
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	10.4	18.1	18.1	7.4	15.1	15.1	16.9	19.2	19.2	9.0	11.3	11.3
Effective Green, g (s)	11.4	20.1	20.1	8.4	17.8	17.8	17.9	21.5	20.2	10.0	13.6	13.6
Actuated g/C Ratio	0.16	0.29	0.29	0.12	0.26	0.26	0.26	0.31	0.29	0.14	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	289	1020	456	213	903	404	454	1568	458	509	1026	319
v/s Ratio Prot	c0.09	c0.17		0.05	c0.18		c0.20	0.09		0.05	c0.13	
v/s Ratio Perm			0.09			0.03			0.01			0.05
v/c Ratio	0.57	0.58	0.33	0.44	0.70	0.11	0.78	0.28	0.04	0.36	0.67	0.23
Uniform Delay, d1	26.9	21.2	19.5	28.5	23.6	19.9	24.0	18.2	17.8	27.0	25.9	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.8	0.4	1.4	2.5	0.1	8.1	0.1	0.0	0.4	1.6	0.4
Delay (s)	29.7	22.0	19.9	29.9	26.1	20.0	32.1	18.3	17.8	27.4	27.6	24.0
Level of Service	C	C	B	C	C	C	C	B	B	C	C	C
Approach Delay (s)		22.1			25.3			23.9			26.5	
Approach LOS		C			C			C			C	

Intersection Summary		
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.66	
Actuated Cycle Length (s)	69.7	Sum of lost time (s) 9.7
Intersection Capacity Utilization	68.1%	ICU Level of Service C
Analysis Period (min)	15	
c Critical Lane Group		

JAA MPR Traffic Analysis
9: Harding Blvd & Estates Drive

Cumulative Plus Project Conditions
School PM Peak



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	323	16	28	27	13	57	42	962	0	81	1202	159
Future Volume (vph)	323	16	28	27	13	57	42	962	0	81	1202	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0	3.0	3.0	2.0		3.0	2.0	
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.98			1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1666			1802	1583	1770	3539		1770	3477	
Flt Permitted	0.95	0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1666			1802	1583	1770	3539		1770	3477	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	351	17	30	29	14	62	46	1046	0	88	1307	173
RTOR Reduction (vph)	0	4	0	0	0	58	0	0	0	0	7	0
Lane Group Flow (vph)	200	194	0	0	43	4	46	1046	0	88	1473	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	19.6	19.6			6.4	6.4	6.5	52.6		8.4	54.5	
Effective Green, g (s)	20.6	20.6			7.4	7.4	7.5	54.6		9.4	56.5	
Actuated g/C Ratio	0.20	0.20			0.07	0.07	0.07	0.53		0.09	0.55	
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	336	333			129	113	128	1876		161	1907	
v/s Ratio Prot	c0.12	0.12			c0.02		0.03	0.30		c0.05	c0.42	
v/s Ratio Perm						0.00						
v/c Ratio	0.60	0.58			0.33	0.04	0.36	0.56		0.55	0.77	
Uniform Delay, d1	37.4	37.3			45.5	44.5	45.5	16.1		44.8	18.2	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.8	2.6			1.5	0.1	1.7	0.4		3.8	2.0	
Delay (s)	40.2	39.9			47.0	44.6	47.2	16.5		48.5	20.2	
Level of Service	D	D			D	D	D	B		D	C	
Approach Delay (s)		40.1			45.6			17.8			21.8	
Approach LOS		D			D			B			C	

Intersection Summary

HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	103.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
10: Harding Blvd & Roseville Square

Cumulative Plus Project Conditions
School PM Peak



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕	↕		↕	↕	↕	↕↔		↕	↕↔	
Traffic Volume (vph)	149	19	177	144	8	53	129	820	28	28	1134	35
Future Volume (vph)	149	19	177	144	8	53	129	820	28	28	1134	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.0		3.0	2.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1779	1583	1770	3522		1770	3523	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1779	1583	1770	3522		1770	3523	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	21	192	157	9	58	140	891	30	30	1233	38
RTOR Reduction (vph)	0	0	162	0	0	49	0	1	0	0	2	0
Lane Group Flow (vph)	0	183	30	0	166	9	140	920	0	30	1269	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		17.6	17.6		16.4	16.4	14.7	62.8		4.7	52.8	
Effective Green, g (s)		18.6	18.6		17.4	17.4	15.7	64.8		5.7	54.8	
Actuated g/C Ratio		0.16	0.16		0.15	0.15	0.13	0.55		0.05	0.47	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		282	250		263	234	236	1942		85	1643	
v/s Ratio Prot		c0.10			c0.09		c0.08	0.26		0.02	c0.36	
v/s Ratio Perm			0.02			0.01						
v/c Ratio		0.65	0.12		0.63	0.04	0.59	0.47		0.35	0.77	
Uniform Delay, d1		46.4	42.4		47.0	42.9	47.9	16.0		54.1	26.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.1	0.2		4.9	0.1	4.0	0.2		2.5	2.3	
Delay (s)		51.5	42.7		51.9	42.9	51.9	16.2		56.6	28.5	
Level of Service		D	D		D	D	D	B		E	C	
Approach Delay (s)		47.0			49.6			20.9			29.1	
Approach LOS		D			D			C			C	
























Intersection Summary













HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
11: Harding Blvd & Douglas Blvd

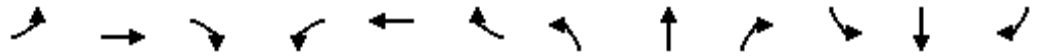
Cumulative Plus Project Conditions
School PM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	366	1356	16	90	875	683	29	30	91	1060	12	316	
Future Volume (vph)	366	1356	16	90	875	683	29	30	91	1060	12	316	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	
Satd. Flow (prot)	1770	3533		1770	3539	1583	1770	1863	1583	1681	1687	1583	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	
Satd. Flow (perm)	1770	3533		1770	3539	1583	1770	1863	1583	1681	1687	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	398	1474	17	98	951	742	32	33	99	1152	13	343	
RTOR Reduction (vph)	0	1	0	0	0	239	0	0	93	0	0	158	
Lane Group Flow (vph)	398	1490	0	98	951	503	32	33	6	588	577	185	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm	
Protected Phases	5	2		1	6		3	3		4		4	
Permitted Phases						6			3			4	
Actuated Green, G (s)	31.0	62.8		11.2	43.0	43.0	8.2	8.2	8.2	48.0	48.0	48.0	
Effective Green, g (s)	32.0	63.8		12.2	44.0	44.0	9.2	9.2	9.2	49.0	49.0	49.0	
Actuated g/C Ratio	0.22	0.44		0.08	0.30	0.30	0.06	0.06	0.06	0.34	0.34	0.34	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	387	1541		147	1065	476	111	117	99	563	565	530	
v/s Ratio Prot	c0.22	0.42		0.06	0.27		c0.02	0.02		c0.35	0.34		
v/s Ratio Perm						c0.32			0.00			0.12	
v/c Ratio	1.03	0.97		0.67	0.89	1.06	0.29	0.28	0.06	1.04	1.02	0.35	
Uniform Delay, d1	57.1	40.2		65.0	48.8	51.1	65.4	65.3	64.4	48.6	48.6	36.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	53.2	15.6		10.9	9.7	57.0	1.4	1.3	0.3	50.0	43.3	0.4	
Delay (s)	110.3	55.8		75.9	58.5	108.1	66.8	66.7	64.7	98.6	91.9	37.0	
Level of Service	F	E		E	E	F	E	E	E	F	F	D	
Approach Delay (s)		67.3			80.0			65.5			82.0		
Approach LOS		E			F			E			F		
Intersection Summary													
HCM 2000 Control Delay			75.7									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.99										
Actuated Cycle Length (s)			146.2									Sum of lost time (s)	12.0
Intersection Capacity Utilization			90.8%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↑↑		↑
Traffic Volume (veh/h)	0	1145	802	0	1542	1129	0	0	0	892	0	154
Future Volume (veh/h)	0	1145	802	0	1542	1129	0	0	0	892	0	154
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863				1863	0	1863
Adj Flow Rate, veh/h	0	1245	0	0	1676	0				970	0	167
Adj No. of Lanes	0	2	1	0	2	1				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	0	2
Cap, veh/h	0	2112	928	0	2136	928				1103	0	508
Arrive On Green	0.00	0.60	0.00	0.00	0.60	0.00				0.32	0.00	0.32
Sat Flow, veh/h	0	3632	1583	0	3632	1583				3442	0	1583
Grp Volume(v), veh/h	0	1245	0	0	1676	0				970	0	167
Grp Sat Flow(s),veh/h/ln	0	1770	1583	0	1770	1583				1721	0	1583
Q Serve(g_s), s	0.0	12.7	0.0	0.0	20.7	0.0				15.5	0.0	4.6
Cycle Q Clear(g_c), s	0.0	12.7	0.0	0.0	20.7	0.0				15.5	0.0	4.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2112	928	0	2136	928				1103	0	508
V/C Ratio(X)	0.00	0.59	0.00	0.00	0.78	0.00				0.88	0.00	0.33
Avail Cap(c_a), veh/h	0	2232	982	0	2257	982				1103	0	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.3	0.0	0.0	8.7	0.0				18.7	0.0	15.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	1.8	0.0				8.4	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.2	0.0	0.0	10.3	0.0				8.6	0.0	2.1
LnGrp Delay(d),s/veh	0.0	7.7	0.0	0.0	10.5	0.0				27.0	0.0	15.3
LnGrp LOS		A			B					C		B
Approach Vol, veh/h		1245			1676						1137	
Approach Delay, s/veh		7.7			10.5						25.3	
Approach LOS		A			B						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		37.0		21.0		37.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		35.0		17.0		35.0						
Max Q Clear Time (g_c+I1), s		14.7		17.5		22.7						
Green Ext Time (p_c), s		15.7		0.0		10.3						
Intersection Summary												
HCM 2010 Ctrl Delay			13.8									
HCM 2010 LOS			B									

JAA MPR Traffic Analysis
13: I-80 EB & Douglas Blvd

Cumulative Plus Project Conditions
School PM Peak


























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	1008	0	0	2179	668	0	0	478	0	0	512
Future Volume (vph)	331	1008	0	0	2179	668	0	0	478	0	0	512
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0			2.0	2.0			3.0			3.0
Lane Util. Factor	1.00	0.86			0.91	1.00			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			5085	1583			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			5085	1583			1611			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	360	1096	0	0	2368	726	0	0	520	0	0	557
RTOR Reduction (vph)	0	0	0	0	0	161	0	0	0	0	0	519
Lane Group Flow (vph)	360	1096	0	0	2368	565	0	0	520	0	0	38
Turn Type	Prot	NA			NA	Perm			Free			Perm
Protected Phases	5	2			6							
Permitted Phases						6			Free			4
Actuated Green, G (s)	30.9	109.2			75.3	75.3			125.7			6.5
Effective Green, g (s)	32.9	111.2			77.3	77.3			125.7			8.5
Actuated g/C Ratio	0.26	0.88			0.61	0.61			1.00			0.07
Clearance Time (s)	4.0	5.0			4.0	4.0						5.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	463	5668			3127	973			1611			188
v/s Ratio Prot	c0.20	0.17			c0.47							
v/s Ratio Perm						0.36			c0.32			0.01
v/c Ratio	0.78	0.19			0.76	0.58			0.32			0.20
Uniform Delay, d1	43.0	1.0			17.4	14.5			0.0			55.4
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	8.0	0.0			1.1	0.9			0.5			0.5
Delay (s)	51.0	1.0			18.5	15.4			0.5			55.9
Level of Service	D	A			B	B			A			E
Approach Delay (s)		13.4			17.8			0.5			55.9	
Approach LOS		B			B			A			E	

Intersection Summary







HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	125.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	446	1598	188	244	2164	157	324	478	161	157	732	346
Future Volume (veh/h)	446	1598	188	244	2164	157	324	478	161	157	732	346
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	485	1737	204	265	2352	171	352	520	175	171	796	376
Adj No. of Lanes	2	3	1	2	4	0	2	2	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	548	2380	937	387	2588	188	465	764	333	290	839	504
Arrive On Green	0.16	0.47	0.46	0.11	0.42	0.42	0.14	0.22	0.21	0.08	0.16	0.16
Sat Flow, veh/h	3442	5085	1583	3442	6145	445	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	485	1737	204	265	1838	685	352	520	175	171	796	376
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1784	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	12.1	24.3	5.3	6.5	31.5	31.7	8.7	11.9	8.6	4.2	13.6	14.0
Cycle Q Clear(g_c), s	12.1	24.3	5.3	6.5	31.5	31.7	8.7	11.9	8.6	4.2	13.6	14.0
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	548	2380	937	387	2024	751	465	764	333	290	839	504
V/C Ratio(X)	0.88	0.73	0.22	0.69	0.91	0.91	0.76	0.68	0.53	0.59	0.95	0.75
Avail Cap(c_a), veh/h	548	2380	937	509	2077	771	509	764	333	509	839	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	18.9	8.4	37.5	23.9	23.9	36.6	31.7	30.8	38.8	36.3	26.8
Incr Delay (d2), s/veh	15.8	1.2	0.1	2.5	6.3	14.8	5.9	2.5	1.5	1.9	19.8	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	11.5	2.3	3.2	15.0	18.5	4.5	6.0	3.9	2.1	7.9	9.0
LnGrp Delay(d),s/veh	52.0	20.1	8.5	40.0	30.1	38.7	42.5	34.2	32.4	40.7	56.1	32.7
LnGrp LOS	D	C	A	D	C	D	D	C	C	D	E	C
Approach Vol, veh/h		2426			2788			1047			1343	
Approach Delay, s/veh		25.5			33.2			36.7			47.6	
Approach LOS		C			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.9	43.1	14.9	17.0	17.0	39.0	10.4	21.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	37.0	12.0	13.0	13.0	36.0	12.0	13.0				
Max Q Clear Time (g_c+I1), s	8.5	26.3	10.7	16.0	14.1	33.7	6.2	13.9				
Green Ext Time (p_c), s	0.4	10.7	0.2	0.0	0.0	1.3	0.3	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			33.7									
HCM 2010 LOS			C									

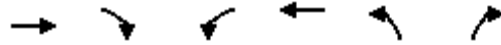
JAA MPR Traffic Analysis
1: Wills Road & Atlantic Street

Cumulative Conditions
PM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑		
Traffic Volume (veh/h)	731	269	247	1640	116	649		
Future Volume (veh/h)	731	269	247	1640	116	649		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1788	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	795	292	268	1783	126	705		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1110	517	507	2363	426	868		
Arrive On Green	0.33	0.31	0.29	0.67	0.24	0.24		
Sat Flow, veh/h	3487	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	795	292	268	1783	126	705		
Grp Sat Flow(s),veh/h/ln	1699	1583	1774	1770	1774	1583		
Q Serve(g_s), s	11.1	8.2	6.9	18.3	3.1	13.0		
Cycle Q Clear(g_c), s	11.1	8.2	6.9	18.3	3.1	13.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1110	517	507	2363	426	868		
V/C Ratio(X)	0.72	0.56	0.53	0.75	0.30	0.81		
Avail Cap(c_a), veh/h	1317	614	589	2744	426	868		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.0	15.1	16.3	6.0	16.8	8.5		
Incr Delay (d2), s/veh	1.5	1.0	0.9	1.0	0.4	5.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.4	3.8	3.5	9.0	1.6	11.8		
LnGrp Delay(d),s/veh	17.6	16.0	17.1	7.1	17.2	14.4		
LnGrp LOS	B	B	B	A	B	B		
Approach Vol, veh/h	1087			2051	831			
Approach Delay, s/veh	17.1			8.4	14.8			
Approach LOS	B			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	18.5	19.7		16.0		38.2		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	17.0	19.0		12.0		40.0		
Max Q Clear Time (g_c+I1), s	8.9	13.1		15.0		20.3		
Green Ext Time (p_c), s	5.8	2.6		0.0		11.0		
Intersection Summary								
HCM 2010 Ctrl Delay			12.1					
HCM 2010 LOS			B					

JAA MPR Traffic Analysis
2: I-80 WB & Atlantic Street

Cumulative Conditions
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑↓	↑↑		↑
Traffic Volume (vph)	838	660	993	1888	0	1060
Future Volume (vph)	838	660	993	1888	0	1060
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	2.0		4.0
Lane Util. Factor	0.91	1.00	0.97	0.95		1.00
Frt	1.00	0.85	1.00	1.00		0.86
Flt Protected	1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)	5085	1583	3433	3539		1611
Flt Permitted	1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)	5085	1583	3433	3539		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	911	717	1079	2052	0	1152
RTOR Reduction (vph)	0	478	0	0	0	405
Lane Group Flow (vph)	911	239	1079	2052	0	747
Turn Type	NA	Perm	Prot	NA		Perm
Protected Phases	2		1	6		
Permitted Phases		2				8
Actuated Green, G (s)	21.0	21.0	32.0	57.0		40.0
Effective Green, g (s)	23.0	23.0	33.0	59.0		41.0
Actuated g/C Ratio	0.22	0.22	0.31	0.56		0.39
Clearance Time (s)	4.0	4.0	4.0	4.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	1103	343	1068	1969		623
v/s Ratio Prot	0.18		0.31	c0.58		
v/s Ratio Perm		0.15				c0.46
v/c Ratio	0.83	0.70	1.01	1.04		1.20
Uniform Delay, d1	39.6	38.3	36.5	23.5		32.5
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	5.2	6.1	30.1	32.3		104.7
Delay (s)	44.8	44.4	66.6	55.8		137.2
Level of Service	D	D	E	E		F
Approach Delay (s)	44.6			59.5	137.2	
Approach LOS	D			E	F	
























Intersection Summary

HCM 2000 Control Delay	70.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
 3: I-80 EB/Taylor Road & Eureka Road/Atlantic Street

Cumulative Conditions
 PM Peak Hour

													
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR	
Lane Configurations													
Traffic Volume (vph)	214	1364	319	0	1723	1456	243	452	556	376	0	462	
Future Volume (vph)	214	1364	319	0	1723	1456	243	452	556	376	0	462	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	2.5	2.5	3.0		2.5	2.5	2.5	2.5	3.0	2.5		2.5	
Lane Util. Factor	0.97	0.95	1.00		0.86	1.00	1.00	0.95	1.00	0.97		1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00		0.85	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95		1.00	
Satd. Flow (prot)	3433	3539	1583		6408	1583	1770	3539	1583	3433		1583	
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95		1.00	
Satd. Flow (perm)	3433	3539	1583		6408	1583	1770	3539	1583	3433		1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	233	1483	347	0	1873	1583	264	491	604	409	0	502	
RTOR Reduction (vph)	0	0	164	0	0	0	0	0	0	0	0	42	
Lane Group Flow (vph)	233	1483	183	0	1873	1583	264	491	604	409	0	460	
Turn Type	Prot	NA	Perm		NA	Free	Prot	NA	Free	Prot		pt+ov	
Protected Phases	5	2			6		3	8		7		4 5	
Permitted Phases			2		6	Free		8	Free				
Actuated Green, G (s)	11.0	49.0	49.0		34.0	100.8	18.0	23.7	100.8	16.1		36.8	
Effective Green, g (s)	12.5	50.5	50.0		35.5	100.8	19.5	25.2	100.8	17.6		38.3	
Actuated g/C Ratio	0.12	0.50	0.50		0.35	1.00	0.19	0.25	1.00	0.17		0.38	
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0			
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0			
Lane Grp Cap (vph)	425	1773	785		2256	1583	342	884	1583	599		601	
v/s Ratio Prot	0.07	0.42			0.29		0.15	0.14		0.12		0.29	
v/s Ratio Perm			0.12			c1.00			0.38				
v/c Ratio	0.55	0.84	0.23		0.83	1.00	0.77	0.56	0.38	0.68		0.77	
Uniform Delay, d1	41.5	21.6	14.5		29.9	50.4	38.5	32.9	0.0	39.0		27.3	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.4	3.6	0.2		2.7	22.6	10.3	0.8	0.7	3.2		5.8	
Delay (s)	42.9	25.2	14.6		32.6	73.0	48.9	33.7	0.7	42.2		33.1	
Level of Service	D	C	B		C	E	D	C	A	D		C	
Approach Delay (s)		25.4			51.1			22.0				37.2	
Approach LOS		C			D			C				D	







































Intersection Summary

HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
4: N. Sunrise Ave & Eureka Road

Cumulative Conditions
PM Peak Hour

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	 	  		 	  		  	  		  	  	
Traffic Volume (vph)	216	1575	354	190	2423	92	536	525	204	162	478	257
Future Volume (vph)	216	1575	354	190	2423	92	536	525	204	162	478	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.5	3.0	3.0	1.5	3.0	3.0	1.5	3.0	3.0	1.5	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.94	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	4990	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	4990	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	1712	385	207	2634	100	583	571	222	176	520	279
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	235	1712	385	207	2634	100	583	571	222	176	520	279
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases		4	Free			Free			Free		6	Free
Actuated Green, G (s)	11.1	49.0	104.0	10.8	48.7	104.0	15.4	18.0	104.0	10.2	12.8	104.0
Effective Green, g (s)	12.1	51.5	104.0	11.8	51.2	104.0	16.4	20.5	104.0	11.2	15.3	104.0
Actuated g/C Ratio	0.12	0.50	1.00	0.11	0.49	1.00	0.16	0.20	1.00	0.11	0.15	1.00
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	399	2518	1583	389	3154	1583	786	1002	1583	369	748	1583
v/s Ratio Prot	c0.07	0.34		0.06	c0.41		c0.12	0.11		0.05	c0.10	
v/s Ratio Perm			c0.24			0.06			0.14			0.18
v/c Ratio	0.59	0.68	0.24	0.53	0.84	0.06	0.74	0.57	0.14	0.48	0.70	0.18
Uniform Delay, d1	43.6	20.0	0.0	43.5	22.8	0.0	41.8	37.8	0.0	43.6	42.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.7	0.4	1.4	2.0	0.1	3.8	0.7	0.2	1.0	2.8	0.2
Delay (s)	45.8	20.7	0.4	44.9	24.8	0.1	45.6	38.5	0.2	44.6	45.0	0.2
Level of Service	D	C	A	D	C	A	D	D	A	D	D	A
Approach Delay (s)		19.9			25.4			35.3			32.1	
Approach LOS		B			C			D			C	

























Intersection Summary

HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	104.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group
























JAA MPR Traffic Analysis
5: Galleria Blvd & Roseville Pkwy

Cumulative Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	1457	793	309	1865	680	655	846	77	810	990	459
Future Volume (veh/h)	306	1457	793	309	1865	680	655	846	77	810	990	459
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1788	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	333	1584	0	336	2027	0	712	920	0	880	1076	0
Adj No. of Lanes	2	4	1	2	4	1	2	3	1	3	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	454	1945	449	464	1928	445	656	1418	418	1089	1083	461
Arrive On Green	0.14	0.30	0.00	0.13	0.30	0.00	0.19	0.28	0.00	0.22	0.31	0.00
Sat Flow, veh/h	3304	6408	1583	3442	6408	1583	3442	5085	1583	5003	3539	1583
Grp Volume(v), veh/h	333	1584	0	336	2027	0	712	920	0	880	1076	0
Grp Sat Flow(s),veh/h/ln	1652	1602	1583	1721	1602	1583	1721	1695	1583	1668	1770	1583
Q Serve(g_s), s	9.6	22.8	0.0	9.3	30.0	0.0	19.0	15.9	0.0	16.6	30.2	0.0
Cycle Q Clear(g_c), s	9.6	22.8	0.0	9.3	30.0	0.0	19.0	15.9	0.0	16.6	30.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	1945	449	464	1928	445	656	1418	418	1089	1083	461
V/C Ratio(X)	0.73	0.81	0.00	0.72	1.05	0.00	1.09	0.65	0.00	0.81	0.99	0.00
Avail Cap(c_a), veh/h	464	1945	449	483	1928	445	656	1418	418	1154	1083	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.3	32.1	0.0	41.4	34.8	0.0	40.3	31.7	0.0	37.0	34.5	0.0
Incr Delay (d2), s/veh	5.8	2.8	0.0	5.1	35.5	0.0	60.6	1.0	0.0	4.2	25.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	10.4	0.0	4.8	17.9	0.0	14.4	7.5	0.0	8.1	18.5	0.0
LnGrp Delay(d),s/veh	47.1	34.9	0.0	46.5	70.3	0.0	101.0	32.7	0.0	41.2	60.3	0.0
LnGrp LOS	D	C		D	F		F	C		D	E	
Approach Vol, veh/h		1917			2363			1632			1956	
Approach Delay, s/veh		37.0			66.9			62.5			51.7	
Approach LOS		D			E			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.7	29.3	15.4	31.3	21.0	32.0	15.7	31.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	21.0	24.0	12.0	27.0	17.0	28.0	12.0	27.0				
Max Q Clear Time (g_c+I1), s	18.6	17.9	11.3	24.8	21.0	32.2	11.6	32.0				
Green Ext Time (p_c), s	1.1	3.8	0.1	2.1	0.0	0.0	0.1	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			54.9									
HCM 2010 LOS			D									

JAA MPR Traffic Analysis
6: Harding Blvd & Wills Road

Cumulative Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	304	7	196	16	16	40	220	1440	5	5	1543	613
Future Volume (vph)	304	7	196	16	16	40	220	1440	5	5	1543	613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	1.5		3.0	1.5	1.5
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1817	1583	3433	3538		1770	3539	1583
Flt Permitted	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1689	1583		1817	1583	3433	3538		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	330	8	213	17	17	43	239	1565	5	5	1677	666
RTOR Reduction (vph)	0	0	134	0	0	40	0	0	0	0	0	154
Lane Group Flow (vph)	168	170	79	0	34	3	239	1570	0	5	1677	512
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)	12.4	12.4	23.4		5.8	5.8	11.0	63.0		1.2	53.2	53.2
Effective Green, g (s)	13.4	13.4	25.4		6.8	6.8	12.0	65.5		2.2	55.7	55.7
Actuated g/C Ratio	0.14	0.14	0.26		0.07	0.07	0.12	0.67		0.02	0.57	0.57
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	228	230	456		125	109	418	2355		39	2003	896
v/s Ratio Prot	0.10	c0.10	0.02		c0.02		c0.07	0.44		0.00	c0.47	
v/s Ratio Perm			0.03			0.00						0.32
v/c Ratio	0.74	0.74	0.17		0.27	0.03	0.57	0.67		0.13	0.84	0.57
Uniform Delay, d1	40.8	40.8	28.4		43.5	42.7	40.8	9.9		47.2	17.6	13.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	11.7	11.7	0.2		1.2	0.1	1.9	0.7		1.5	3.2	0.9
Delay (s)	52.5	52.6	28.5		44.6	42.8	42.7	10.6		48.6	20.8	14.6
Level of Service	D	D	C		D	D	D	B		D	C	B
Approach Delay (s)		43.3			43.6			14.8			19.1	
Approach LOS		D			D			B			B	

Intersection Summary

HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	10.5
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
7: Harding Blvd & Lead Hill Blvd

Cumulative Conditions
PM Peak Hour


































Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	793	744	818	444	1016	825
Future Volume (vph)	793	744	818	444	1016	825
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	1.7	1.7	1.7	3.0
Lane Util. Factor	0.97	0.91	0.95	1.00	0.97	0.95
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.96	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.96	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3354	1441	3539	1583	3433	3539
Flt Permitted	0.96	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3354	1441	3539	1583	3433	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	862	809	889	483	1104	897
RTOR Reduction (vph)	31	331	0	344	0	0
Lane Group Flow (vph)	1114	195	889	139	1104	897
Confl. Peds. (#/hr)	484					
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	36.9	36.9	25.0	25.0	32.0	61.0
Effective Green, g (s)	37.9	39.2	27.3	27.3	34.3	62.0
Actuated g/C Ratio	0.36	0.37	0.26	0.26	0.32	0.59
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1200	533	912	408	1111	2071
v/s Ratio Prot	c0.33		c0.25		c0.32	0.25
v/s Ratio Perm		0.14		0.09		
v/c Ratio	0.93	0.37	0.97	0.34	0.99	0.43
Uniform Delay, d1	32.7	24.3	39.0	32.0	35.7	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.2	0.4	23.6	0.5	25.3	0.1
Delay (s)	44.9	24.7	62.5	32.5	61.0	12.3
Level of Service	D	C	E	C	E	B
Approach Delay (s)	38.6		52.0		39.2	
Approach LOS	D		D		D	

Intersection Summary			
HCM 2000 Control Delay	42.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	105.9	Sum of lost time (s)	6.4
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			
























JAA MPR Traffic Analysis
8: N. Sunrise Ave & Lead Hill Blvd

Cumulative Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  		 	  	
Traffic Volume (vph)	201	643	543	83	601	181	488	683	58	163	638	313
Future Volume (vph)	201	643	543	83	601	181	488	683	58	163	638	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.0	2.0	3.0	1.3	1.3	3.0	1.7	3.0	3.0	1.7	1.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	699	590	90	653	197	530	742	63	177	693	340
RTOR Reduction (vph)	0	0	411	0	0	149	0	0	39	0	0	233
Lane Group Flow (vph)	218	699	179	90	653	48	530	742	24	177	693	107
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	14.8	27.7	27.7	8.1	21.0	21.0	32.5	36.1	36.1	10.1	13.7	13.7
Effective Green, g (s)	15.8	29.7	29.7	9.1	23.7	23.7	33.5	38.4	37.1	11.1	16.0	16.0
Actuated g/C Ratio	0.16	0.30	0.30	0.09	0.24	0.24	0.34	0.39	0.38	0.11	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	285	1072	479	164	855	382	605	1992	599	402	859	267
v/s Ratio Prot	c0.12	0.20		0.05	c0.18		c0.30	0.15		0.05	c0.13	
v/s Ratio Perm			0.11			0.03			0.02			0.07
v/c Ratio	0.76	0.65	0.37	0.55	0.76	0.12	0.88	0.37	0.04	0.44	0.81	0.40
Uniform Delay, d1	39.3	29.7	26.8	42.5	34.5	29.0	30.3	21.2	19.2	40.6	39.5	36.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.6	1.4	0.5	3.7	4.1	0.1	13.4	0.1	0.0	0.8	5.6	1.0
Delay (s)	50.9	31.1	27.3	46.2	38.6	29.2	43.7	21.3	19.2	41.3	45.1	37.7
Level of Service	D	C	C	D	D	C	D	C	B	D	D	D
Approach Delay (s)		32.5			37.4			30.1			42.5	
Approach LOS		C			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			35.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			98.0				Sum of lost time (s)			9.7		
Intersection Capacity Utilization			80.4%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

JAA MPR Traffic Analysis
9: Harding Blvd & Estates Drive

Cumulative Conditions
PM Peak Hour

													
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR	
Lane Configurations													
Traffic Volume (vph)	302	14	27	25	12	53	47	907	0	71	1358	187	
Future Volume (vph)	302	14	27	25	12	53	47	907	0	71	1358	187	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.0	3.0			3.0	3.0	3.0	2.0		3.0	2.0		
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	0.95		1.00	0.95		
Frt	1.00	0.98			1.00	0.85	1.00	1.00		1.00	0.98		
Flt Protected	0.95	0.96			0.97	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1681	1665			1802	1583	1770	3539		1770	3475		
Flt Permitted	0.95	0.96			0.97	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (perm)	1681	1665			1802	1583	1770	3539		1770	3475		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	328	15	29	27	13	58	51	986	0	77	1476	203	
RTOR Reduction (vph)	0	6	0	0	0	54	0	0	0	0	9	0	
Lane Group Flow (vph)	187	179	0	0	40	4	51	986	0	77	1670	0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA		
Protected Phases	4	4		3	3		5	2		1	6		
Permitted Phases						3							
Actuated Green, G (s)	13.1	13.1			5.9	5.9	6.5	48.7		7.3	49.5		
Effective Green, g (s)	14.1	14.1			6.9	6.9	7.5	50.7		8.3	51.5		
Actuated g/C Ratio	0.15	0.15			0.08	0.08	0.08	0.56		0.09	0.57		
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0		
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	260	257			136	120	145	1971		161	1966		
v/s Ratio Prot	c0.11	0.11			c0.02		0.03	0.28		c0.04	c0.48		
v/s Ratio Perm						0.00							
v/c Ratio	0.72	0.70			0.29	0.04	0.35	0.50		0.48	0.85		
Uniform Delay, d1	36.6	36.4			39.7	39.0	39.5	12.4		39.3	16.5		
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2	9.2	8.0			1.2	0.1	1.5	0.2		2.2	3.6		
Delay (s)	45.7	44.4			41.0	39.1	40.9	12.6		41.5	20.2		
Level of Service	D	D			D	D	D	B		D	C		
Approach Delay (s)		45.1			39.9			14.0			21.1		
Approach LOS		D			D			B			C		
























Intersection Summary

HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
10: Harding Blvd & Roseville Square
























Cumulative Conditions
PM Peak Hour

														
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR		
Lane Configurations														
Traffic Volume (vph)	159	20	129	132	7	48	130	779	20	25	1179	39		
Future Volume (vph)	159	20	129	132	7	48	130	779	20	25	1179	39		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.0		3.0	2.0			
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00			
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00			
Satd. Flow (prot)		1784	1583		1779	1583	1770	3526		1770	3522			
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00			
Satd. Flow (perm)		1784	1583		1779	1583	1770	3526		1770	3522			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	173	22	140	143	8	52	141	847	22	27	1282	42		
RTOR Reduction (vph)	0	0	118	0	0	45	0	1	0	0	2	0		
Lane Group Flow (vph)	0	195	22	0	151	7	141	868	0	27	1322	0		
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA			
Protected Phases	4	4		3	3		5	2		1	6			
Permitted Phases			4			3								
Actuated Green, G (s)		14.0	14.0		11.6	11.6	11.4	50.7		4.4	43.7			
Effective Green, g (s)		15.0	15.0		12.6	12.6	12.4	52.7		5.4	45.7			
Actuated g/C Ratio		0.16	0.16		0.13	0.13	0.13	0.54		0.06	0.47			
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0			
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		276	245		231	206	226	1921		98	1664			
v/s Ratio Prot		c0.11			c0.08		c0.08	0.25		0.02	c0.38			
v/s Ratio Perm			0.01			0.00								
v/c Ratio		0.71	0.09		0.65	0.03	0.62	0.45		0.28	0.79			
Uniform Delay, d1		38.8	35.0		40.0	36.7	39.9	13.3		43.8	21.5			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00			
Incremental Delay, d2		8.0	0.2		6.5	0.1	5.3	0.2		1.5	2.7			
Delay (s)		46.8	35.2		46.5	36.8	45.2	13.4		45.3	24.2			
Level of Service		D	D		D	D	D	B		D	C			
Approach Delay (s)		41.9			44.0			17.9			24.7			
Approach LOS		D			D			B			C			
Intersection Summary														
HCM 2000 Control Delay			25.6									HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio			0.73											
Actuated Cycle Length (s)			96.7								11.0		Sum of lost time (s)	
Intersection Capacity Utilization			67.6%										ICU Level of Service	C
Analysis Period (min)			15											

c Critical Lane Group

JAA MPR Traffic Analysis
11: Harding Blvd & Douglas Blvd

Cumulative Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	370	1307	18	109	1103	580	48	60	114	1012	12	336
Future Volume (vph)	370	1307	18	109	1103	580	48	60	114	1012	12	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	402	1421	20	118	1199	630	52	65	124	1100	13	365
RTOR Reduction (vph)	0	1	0	0	0	227	0	0	112	0	0	248
Lane Group Flow (vph)	402	1440	0	118	1199	403	52	65	12	561	552	117
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4		4
Permitted Phases						6			3			4
Actuated Green, G (s)	19.0	39.3		10.7	31.0	31.0	8.9	8.9	8.9	28.0	28.0	28.0
Effective Green, g (s)	20.0	40.3		11.7	32.0	32.0	9.9	9.9	9.9	29.0	29.0	29.0
Actuated g/C Ratio	0.19	0.39		0.11	0.31	0.31	0.10	0.10	0.10	0.28	0.28	0.28
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	344	1383		201	1100	492	170	179	152	473	475	446
v/s Ratio Prot	c0.23	c0.41		0.07	0.34		0.03	c0.03		c0.33		0.33
v/s Ratio Perm						0.25			0.01			0.07
v/c Ratio	1.17	1.04		0.59	1.09	0.82	0.31	0.36	0.08	1.19	1.16	0.26
Uniform Delay, d1	41.5	31.3		43.3	35.5	32.8	43.3	43.5	42.3	37.0	37.0	28.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	102.7	35.7		4.3	55.1	10.2	1.0	1.3	0.2	103.4	94.0	0.3
Delay (s)	144.1	67.0		47.6	90.5	43.0	44.3	44.8	42.6	140.3	131.0	29.0
Level of Service	F	E		D	F	D	D	D	D	F	F	C
Approach Delay (s)		83.9			72.5			43.5			109.3	
Approach LOS		F			E			D			F	













Intersection Summary

HCM 2000 Control Delay	84.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	102.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group
























JAA MPR Traffic Analysis
12: Douglas Blvd & I-80 WB

Cumulative Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↑↑		↑
Traffic Volume (veh/h)	0	1094	767	0	1612	1401	0	0	0	1019	0	175
Future Volume (veh/h)	0	1094	767	0	1612	1401	0	0	0	1019	0	175
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863				1863	0	1863
Adj Flow Rate, veh/h	0	1189	0	0	1752	0				1108	0	190
Adj No. of Lanes	0	2	1	0	2	1				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	0	2
Cap, veh/h	0	2174	956	0	2198	956				1043	0	480
Arrive On Green	0.00	0.61	0.00	0.00	0.62	0.00				0.30	0.00	0.30
Sat Flow, veh/h	0	3632	1583	0	3632	1583				3442	0	1583
Grp Volume(v), veh/h	0	1189	0	0	1752	0				1108	0	190
Grp Sat Flow(s),veh/h/ln	0	1770	1583	0	1770	1583				1721	0	1583
Q Serve(g_s), s	0.0	11.3	0.0	0.0	21.6	0.0				17.6	0.0	5.5
Cycle Q Clear(g_c), s	0.0	11.3	0.0	0.0	21.6	0.0				17.6	0.0	5.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2174	956	0	2198	956				1043	0	480
V/C Ratio(X)	0.00	0.55	0.00	0.00	0.80	0.00				1.06	0.00	0.40
Avail Cap(c_a), veh/h	0	2292	1009	0	2317	1009				1043	0	480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.5	0.0	0.0	8.3	0.0				20.2	0.0	16.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	1.9	0.0				45.8	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.5	0.0	0.0	10.8	0.0				14.9	0.0	2.4
LnGrp Delay(d),s/veh	0.0	6.8	0.0	0.0	10.2	0.0				66.1	0.0	16.5
LnGrp LOS		A			B					F		B
Approach Vol, veh/h		1189			1752						1298	
Approach Delay, s/veh		6.8			10.2						58.8	
Approach LOS		A			B						E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		38.1		20.0		38.1						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		36.0		16.0		36.0						
Max Q Clear Time (g_c+I1), s		13.3		19.6		23.6						
Green Ext Time (p_c), s		17.2		0.0		10.5						
Intersection Summary												
HCM 2010 Ctrl Delay			24.1									
HCM 2010 LOS			C									

JAA MPR Traffic Analysis
13: I-80 EB & Douglas Blvd
























Cumulative Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							 
Traffic Volume (vph)	288	1079	0	0	2547	527	0	0	1179	0	0	465
Future Volume (vph)	288	1079	0	0	2547	527	0	0	1179	0	0	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0			2.0	2.0			3.0			3.0
Lane Util. Factor	1.00	0.86			0.91	1.00			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			5085	1583			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			5085	1583			1611			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	313	1173	0	0	2768	573	0	0	1282	0	0	505
RTOR Reduction (vph)	0	0	0	0	0	161	0	0	0	0	0	431
Lane Group Flow (vph)	313	1173	0	0	2768	412	0	0	1282	0	0	74
Turn Type	Prot	NA			NA	Perm			Free			Perm
Protected Phases	5	2			6							
Permitted Phases						6			Free			4
Actuated Green, G (s)	18.6	79.7			58.1	58.1			97.9			8.2
Effective Green, g (s)	20.6	81.7			60.1	60.1			97.9			10.2
Actuated g/C Ratio	0.21	0.83			0.61	0.61			1.00			0.10
Clearance Time (s)	4.0	5.0			4.0	4.0						5.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	372	5347			3121	971			1611			290
v/s Ratio Prot	0.18	0.18			c0.54							
v/s Ratio Perm						0.26			c0.80			0.03
v/c Ratio	0.84	0.22			0.89	0.42			0.80			0.26
Uniform Delay, d1	37.1	1.6			16.0	9.9			0.0			40.4
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	15.7	0.0			3.4	0.3			4.2			0.5
Delay (s)	52.7	1.7			19.4	10.2			4.2			40.8
Level of Service	D	A			B	B			A			D
Approach Delay (s)		12.4			17.9			4.2			40.8	
Approach LOS		B			B			A			D	
Intersection Summary												
HCM 2000 Control Delay			15.7		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			97.9		Sum of lost time (s)					9.0		
Intersection Capacity Utilization			72.1%		ICU Level of Service					C		
Analysis Period (min)			15									

c Critical Lane Group

JAA MPR Traffic Analysis
 14: Sunrise Ave & Douglas Blvd

Cumulative Conditions
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	429	1599	188	212	2221	144	389	494	164	183	783	465
Future Volume (veh/h)	429	1599	188	212	2221	144	389	494	164	183	783	465
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	466	1738	204	230	2414	157	423	537	178	199	851	505
Adj No. of Lanes	2	3	1	2	4	0	2	2	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	499	2358	946	350	2605	169	499	797	348	318	878	494
Arrive On Green	0.14	0.46	0.45	0.10	0.42	0.42	0.14	0.23	0.22	0.09	0.17	0.17
Sat Flow, veh/h	3442	5085	1583	3442	6196	402	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	466	1738	204	230	1871	700	423	537	178	199	851	505
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1792	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	12.0	25.0	5.3	5.8	33.1	33.4	10.8	12.4	8.9	5.0	14.9	15.0
Cycle Q Clear(g_c), s	12.0	25.0	5.3	5.8	33.1	33.4	10.8	12.4	8.9	5.0	14.9	15.0
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	499	2358	946	350	2021	753	499	797	348	318	878	494
V/C Ratio(X)	0.93	0.74	0.22	0.66	0.93	0.93	0.85	0.67	0.51	0.63	0.97	1.02
Avail Cap(c_a), veh/h	499	2358	946	499	2035	759	499	797	348	499	878	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	19.6	8.3	38.8	24.7	24.7	37.4	31.7	30.8	39.2	36.9	30.9
Incr Delay (d2), s/veh	25.0	1.2	0.1	2.1	7.9	17.7	12.9	2.2	1.3	2.0	23.0	46.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	11.9	2.4	2.8	16.0	20.1	6.0	6.3	4.0	2.5	8.8	18.5
LnGrp Delay(d),s/veh	63.0	20.8	8.5	40.9	32.5	42.5	50.3	34.0	32.0	41.3	59.8	77.1
LnGrp LOS	E	C	A	D	C	D	D	C	C	D	E	F
Approach Vol, veh/h		2408			2801			1138			1555	
Approach Delay, s/veh		27.9			35.7			39.8			63.1	
Approach LOS		C			D			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	43.6	16.0	18.0	16.0	39.7	11.3	22.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	36.0	12.0	14.0	12.0	36.0	12.0	14.0				
Max Q Clear Time (g_c+I1), s	7.8	27.0	12.8	17.0	14.0	35.4	7.0	14.4				
Green Ext Time (p_c), s	0.4	9.0	0.0	0.0	0.0	0.4	0.3	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			39.3									
HCM 2010 LOS			D									

Appendix E

*Analysis Worksheets for
CIP Cumulative (2035) plus Proposed Project Conditions*

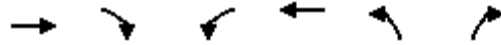
JAA MPR Traffic Analysis
1: Wills Road & Atlantic Street

Cumulative Plus Project Conditions
AM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓		
Traffic Volume (veh/h)	952	294	372	857	141	279		
Future Volume (veh/h)	952	294	372	857	141	279		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1788	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1035	320	404	932	153	303		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1324	617	505	2583	315	869		
Arrive On Green	0.39	0.37	0.28	0.73	0.18	0.18		
Sat Flow, veh/h	3487	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	1035	320	404	932	153	303		
Grp Sat Flow(s),veh/h/ln	1699	1583	1774	1770	1774	1583		
Q Serve(g_s), s	14.4	8.3	11.4	5.2	4.2	5.8		
Cycle Q Clear(g_c), s	14.4	8.3	11.4	5.2	4.2	5.8		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1324	617	505	2583	315	869		
V/C Ratio(X)	0.78	0.52	0.80	0.36	0.49	0.35		
Avail Cap(c_a), veh/h	1447	674	526	2753	427	969		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.5	12.6	17.9	2.7	20.0	6.8		
Incr Delay (d2), s/veh	2.6	0.7	8.3	0.1	1.2	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.2	3.8	6.7	2.5	2.1	4.5		
LnGrp Delay(d),s/veh	17.1	13.3	26.2	2.8	21.1	7.0		
LnGrp LOS	B	B	C	A	C	A		
Approach Vol, veh/h	1355			1336	456			
Approach Delay, s/veh	16.2			9.9	11.8			
Approach LOS	B			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	18.4	23.0		12.6		41.4		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	15.0	21.0		12.0		40.0		
Max Q Clear Time (g_c+I1), s	13.4	16.4		7.8		7.2		
Green Ext Time (p_c), s	1.0	2.6		0.8		6.8		
Intersection Summary								
HCM 2010 Ctrl Delay			12.9					
HCM 2010 LOS			B					

JAA MPR Traffic Analysis
2: I-80 WB & Atlantic Street

Cumulative Plus Project Conditions
AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑↓	↑↑		↑
Traffic Volume (vph)	962	282	592	1257	0	1139
Future Volume (vph)	962	282	592	1257	0	1139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	2.0		4.0
Lane Util. Factor	0.91	1.00	0.97	0.95		1.00
Frt	1.00	0.85	1.00	1.00		0.86
Flt Protected	1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)	5085	1583	3433	3539		1611
Flt Permitted	1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)	5085	1583	3433	3539		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1046	307	643	1366	0	1238
RTOR Reduction (vph)	0	235	0	0	0	328
Lane Group Flow (vph)	1046	72	643	1366	0	910
Turn Type	NA	Perm	Prot	NA		Perm
Protected Phases	2		1	6		
Permitted Phases		2				8
Actuated Green, G (s)	12.0	12.0	12.0	28.0		23.0
Effective Green, g (s)	14.0	14.0	13.0	30.0		24.0
Actuated g/C Ratio	0.23	0.23	0.22	0.50		0.40
Clearance Time (s)	4.0	4.0	4.0	4.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	1186	369	743	1769		644
v/s Ratio Prot	c0.21		0.19	c0.39		
v/s Ratio Perm		0.05				c0.57
v/c Ratio	0.88	0.19	0.87	0.77		1.41
Uniform Delay, d1	22.2	18.5	22.7	12.2		18.0
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	8.0	0.3	10.3	2.2		195.3
Delay (s)	30.2	18.7	33.0	14.4		213.3
Level of Service	C	B	C	B		F
Approach Delay (s)	27.6			20.3	213.3	
Approach LOS	C			C	F	





























Intersection Summary

HCM 2000 Control Delay	74.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
 3: I-80 EB/Taylor Road & Eureka Road/Atlantic Street

Cumulative Plus Project Conditions
 AM Peak Hour

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	 	 			  			 		 		
Traffic Volume (vph)	201	1665	234	0	717	1115	156	375	708	92	0	362
Future Volume (vph)	201	1665	234	0	717	1115	156	375	708	92	0	362
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0		2.5	2.5	2.5	2.5	3.0	2.5		2.5
Lane Util. Factor	0.97	0.95	1.00		0.86	1.00	1.00	0.95	1.00	0.97		1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3433	3539	1583		6408	1583	1770	3539	1583	3433		1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3433	3539	1583		6408	1583	1770	3539	1583	3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	1810	254	0	779	1212	170	408	770	100	0	393
RTOR Reduction (vph)	0	0	117	0	0	0	0	0	0	0	0	87
Lane Group Flow (vph)	218	1810	137	0	779	1212	170	408	770	100	0	306
Turn Type	Prot	NA	Perm		NA	Free	Prot	NA	Free	Prot		pt+ov
Protected Phases	5	2			6		3	8		7		4 5
Permitted Phases			2		6	Free		8	Free			
Actuated Green, G (s)	9.9	38.2	38.2		24.3	72.8	10.7	16.5	72.8	6.1		25.8
Effective Green, g (s)	11.4	39.7	39.2		25.8	72.8	12.2	18.0	72.8	7.6		27.3
Actuated g/C Ratio	0.16	0.55	0.54		0.35	1.00	0.17	0.25	1.00	0.10		0.38
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0		
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0		
Lane Grp Cap (vph)	537	1929	852		2270	1583	296	875	1583	358		593
v/s Ratio Prot	0.06	c0.51			0.12		0.10	0.12		0.03		0.19
v/s Ratio Perm			0.09			c0.77			0.49			
v/c Ratio	0.41	0.94	0.16		0.34	0.77	0.57	0.47	0.49	0.28		0.52
Uniform Delay, d1	27.7	15.4	8.5		17.3	0.0	27.9	23.3	0.0	30.1		17.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.5	9.4	0.1		0.1	3.6	2.7	0.4	1.1	0.4		0.8
Delay (s)	28.2	24.8	8.6		17.4	3.6	30.6	23.7	1.1	30.5		18.4
Level of Service	C	C	A		B	A	C	C	A	C		B
Approach Delay (s)		23.3			9.0			11.6			20.8	
Approach LOS		C			A			B			C	





































Intersection Summary

HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
4: N. Sunrise Ave & Eureka Road

Cumulative Plus Project Conditions
AM Peak Hour

























												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	 	  		 	  		  	  		 	  	
Traffic Volume (vph)	190	1958	324	71	1763	32	163	267	145	181	300	158
Future Volume (vph)	190	1958	324	71	1763	32	163	267	145	181	300	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.5	3.0	3.0	1.5	3.0	3.0	1.5	3.0	3.0	1.5	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.94	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	4990	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	4990	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	2128	352	77	1916	35	177	290	158	197	326	172
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	207	2128	352	77	1916	35	177	290	158	197	326	172
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases		4	Free			Free			Free		6	Free
Actuated Green, G (s)	9.5	31.9	72.3	5.7	28.1	72.3	9.0	9.4	72.3	9.3	9.7	72.3
Effective Green, g (s)	10.5	34.4	72.3	6.7	30.6	72.3	10.0	11.9	72.3	10.3	12.2	72.3
Actuated g/C Ratio	0.15	0.48	1.00	0.09	0.42	1.00	0.14	0.16	1.00	0.14	0.17	1.00
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	498	2419	1583	318	2712	1583	690	836	1583	489	858	1583
v/s Ratio Prot	c0.06	c0.42		0.02	0.30		0.04	c0.06		c0.06	0.06	
v/s Ratio Perm			c0.22			0.02			0.10			0.11
v/c Ratio	0.42	0.88	0.22	0.24	0.71	0.02	0.26	0.35	0.10	0.40	0.38	0.11
Uniform Delay, d1	28.1	17.1	0.0	30.4	17.2	0.0	27.8	26.8	0.0	28.2	26.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	4.0	0.3	0.4	0.9	0.0	0.2	0.3	0.1	0.5	0.3	0.1
Delay (s)	28.7	21.1	0.3	30.8	18.0	0.0	28.0	27.0	0.1	28.7	27.0	0.1
Level of Service	C	C	A	C	B	A	C	C	A	C	C	A
Approach Delay (s)		19.0			18.2			20.5			20.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group
























JAA MPR Traffic Analysis
5: Galleria Blvd & Roseville Pkwy

Cumulative Plus Project Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	304	1473	802	83	1566	392	906	538	51	940	803	285
Future Volume (veh/h)	304	1473	802	83	1566	392	906	538	51	940	803	285
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1788	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	330	1601	0	90	1702	0	985	585	0	1022	873	0
Adj No. of Lanes	2	4	1	2	4	1	2	3	1	3	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	472	2152	496	229	1662	375	970	1356	396	1289	858	357
Arrive On Green	0.14	0.34	0.00	0.07	0.26	0.00	0.28	0.27	0.00	0.26	0.24	0.00
Sat Flow, veh/h	3304	6408	1583	3442	6408	1583	3442	5085	1583	5003	3539	1583
Grp Volume(v), veh/h	330	1601	0	90	1702	0	985	585	0	1022	873	0
Grp Sat Flow(s),veh/h/ln	1652	1602	1583	1721	1602	1583	1721	1695	1583	1668	1770	1583
Q Serve(g_s), s	8.4	19.6	0.0	2.2	23.0	0.0	25.0	8.5	0.0	16.9	21.5	0.0
Cycle Q Clear(g_c), s	8.4	19.6	0.0	2.2	23.0	0.0	25.0	8.5	0.0	16.9	21.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	472	2152	496	229	1662	375	970	1356	396	1289	858	357
V/C Ratio(X)	0.70	0.74	0.00	0.39	1.02	0.00	1.02	0.43	0.00	0.79	1.02	0.00
Avail Cap(c_a), veh/h	522	2152	496	543	1662	375	970	1356	396	1411	858	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.2	26.1	0.0	39.7	32.8	0.0	31.8	26.9	0.0	30.7	33.6	0.0
Incr Delay (d2), s/veh	3.7	1.4	0.0	1.1	28.4	0.0	32.7	0.2	0.0	2.9	35.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	8.9	0.0	1.1	13.3	0.0	16.1	4.0	0.0	8.1	14.6	0.0
LnGrp Delay(d),s/veh	39.8	27.5	0.0	40.8	61.2	0.0	64.5	27.2	0.0	33.6	68.7	0.0
LnGrp LOS	D	C		D	F		F	C		C	F	
Approach Vol, veh/h		1931			1792			1570			1895	
Approach Delay, s/veh		29.6			60.2			50.6			49.8	
Approach LOS		C			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.8	25.2	7.9	30.8	27.0	23.0	14.7	24.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	23.0	19.0	12.0	20.0	23.0	19.0	12.0	20.0				
Max Q Clear Time (g_c+I1), s	18.9	10.5	4.2	21.6	27.0	23.5	10.4	25.0				
Green Ext Time (p_c), s	2.0	4.8	0.1	0.0	0.0	0.0	0.2	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			47.1									
HCM 2010 LOS			D									

JAA MPR Traffic Analysis
6: Harding Blvd & Wills Road

Cumulative Plus Project Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	313	0	390	3	0	18	118	1192	8	7	1401	329
Future Volume (vph)	313	0	390	3	0	18	118	1192	8	7	1401	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	1.5		3.0	1.5	1.5
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583		1770	1583	3433	3536		1770	3539	1583
Flt Permitted	0.95	0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1583		1770	1583	3433	3536		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	340	0	424	3	0	20	128	1296	9	8	1523	358
RTOR Reduction (vph)	0	0	190	0	0	19	0	0	0	0	0	97
Lane Group Flow (vph)	170	170	234	0	3	1	128	1305	0	8	1523	261
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)	11.0	11.0	19.5		2.1	2.1	8.5	47.3		1.2	40.0	40.0
Effective Green, g (s)	12.0	12.0	21.5		3.1	3.1	9.5	49.8		2.2	42.5	42.5
Actuated g/C Ratio	0.15	0.15	0.28		0.04	0.04	0.12	0.64		0.03	0.55	0.55
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	259	259	499		70	63	420	2269		50	1938	866
v/s Ratio Prot	c0.10	0.10	c0.06		c0.00		0.04	0.37		0.00	c0.43	
v/s Ratio Perm			0.09			0.00						0.16
v/c Ratio	0.66	0.66	0.47		0.04	0.01	0.30	0.57		0.16	0.79	0.30
Uniform Delay, d1	30.9	30.9	23.3		35.8	35.8	31.0	7.9		36.8	13.9	9.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.9	5.9	0.7		0.3	0.1	0.4	0.4		1.5	2.2	0.2
Delay (s)	36.7	36.7	24.0		36.1	35.9	31.5	8.2		38.3	16.1	9.7
Level of Service	D	D	C		D	D	C	A		D	B	A
Approach Delay (s)		29.7			35.9			10.3			15.0	
Approach LOS		C			D			B			B	

Intersection Summary

HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	10.5
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
7: Harding Blvd & Lead Hill Blvd

Cumulative Plus Project Conditions
AM Peak Hour



























Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	137	458	888	459	898	810
Future Volume (vph)	137	458	888	459	898	810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	1.7	1.7	1.7	3.0
Lane Util. Factor	0.97	0.91	0.95	1.00	0.97	0.95
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.91	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.98	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3214	1441	3539	1583	3433	3539
Flt Permitted	0.98	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3214	1441	3539	1583	3433	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	498	965	499	976	880
RTOR Reduction (vph)	205	199	0	306	0	0
Lane Group Flow (vph)	193	50	965	193	976	880
Confl. Peds. (#/hr)	484					
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	8.8	8.8	17.1	17.1	17.6	38.7
Effective Green, g (s)	9.8	11.1	19.4	19.4	19.9	39.7
Actuated g/C Ratio	0.18	0.20	0.35	0.35	0.36	0.72
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	567	288	1237	553	1230	2531
v/s Ratio Prot	c0.06		c0.27		c0.28	0.25
v/s Ratio Perm		0.03		0.12		
v/c Ratio	0.34	0.17	0.78	0.35	0.79	0.35
Uniform Delay, d1	20.0	18.4	16.1	13.4	16.0	3.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3	3.3	0.4	3.6	0.1
Delay (s)	20.4	18.7	19.4	13.8	19.6	3.1
Level of Service	C	B	B	B	B	A
Approach Delay (s)	19.7		17.5			11.7
Approach LOS	B		B			B

Intersection Summary

HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	6.4
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

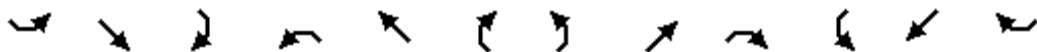
JAA MPR Traffic Analysis
8: N. Sunrise Ave & Lead Hill Blvd

Cumulative Plus Project Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	732	290	65	184	77	380	427	34	80	334	56
Future Volume (vph)	234	732	290	65	184	77	380	427	34	80	334	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.0	2.0	3.0	1.3	1.3	3.0	1.7	3.0	3.0	1.7	1.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	254	796	315	71	200	84	413	464	37	87	363	61
RTOR Reduction (vph)	0	0	217	0	0	66	0	0	25	0	0	51
Lane Group Flow (vph)	254	796	98	71	200	18	413	464	12	87	363	10
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.3	18.4	18.4	5.1	11.2	11.2	17.6	20.7	20.7	5.6	8.7	8.7
Effective Green, g (s)	13.3	20.4	20.4	6.1	13.9	13.9	18.6	23.0	21.7	6.6	11.0	11.0
Actuated g/C Ratio	0.20	0.31	0.31	0.09	0.21	0.21	0.28	0.35	0.33	0.10	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	357	1097	490	164	747	334	500	1777	522	356	879	273
v/s Ratio Prot	c0.14	c0.22		0.04	0.06		c0.23	0.09		0.02	c0.07	
v/s Ratio Perm			0.06			0.01			0.01			0.01
v/c Ratio	0.71	0.73	0.20	0.43	0.27	0.05	0.83	0.26	0.02	0.24	0.41	0.04
Uniform Delay, d1	24.5	20.2	16.7	28.2	21.7	20.7	22.1	15.3	14.9	27.3	24.5	23.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	2.4	0.2	1.8	0.2	0.1	10.7	0.1	0.0	0.4	0.3	0.1
Delay (s)	31.0	22.6	16.9	30.0	21.9	20.8	32.8	15.4	14.9	27.7	24.8	23.0
Level of Service	C	C	B	C	C	C	C	B	B	C	C	C
Approach Delay (s)		22.9			23.3			23.2			25.1	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			23.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			65.8				Sum of lost time (s)		9.7			
Intersection Capacity Utilization			64.7%				ICU Level of Service		C			
Analysis Period (min)			15									
c	Critical Lane Group											

JAA MPR Traffic Analysis
9: Harding Blvd & Estates Drive

Cumulative Plus Project Conditions
AM Peak Hour



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	329	12	18	36	20	45	12	1082	0	38	759	109
Future Volume (vph)	329	12	18	36	20	45	12	1082	0	38	759	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0	3.0	3.0	2.0		3.0	2.0	
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.98			1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1673			1805	1583	1770	3539		1770	3473	
Flt Permitted	0.95	0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1673			1805	1583	1770	3539		1770	3473	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	358	13	20	39	22	49	13	1176	0	41	825	118
RTOR Reduction (vph)	0	6	0	0	0	43	0	0	0	0	11	0
Lane Group Flow (vph)	197	188	0	0	61	6	13	1176	0	41	932	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	10.8	10.8			6.2	6.2	1.2	26.1		2.9	27.8	
Effective Green, g (s)	11.8	11.8			7.2	7.2	2.2	28.1		3.9	29.8	
Actuated g/C Ratio	0.19	0.19			0.12	0.12	0.04	0.45		0.06	0.48	
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	319	318			209	183	62	1603		111	1669	
v/s Ratio Prot	c0.12	0.11			c0.03		0.01	c0.33		c0.02	0.27	
v/s Ratio Perm						0.00						
v/c Ratio	0.62	0.59			0.29	0.03	0.21	0.73		0.37	0.56	
Uniform Delay, d1	23.0	22.9			25.1	24.3	29.1	13.9		27.9	11.4	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.5	2.9			0.8	0.1	1.7	1.8		2.1	0.4	
Delay (s)	26.6	25.8			25.8	24.4	30.7	15.7		29.9	11.8	
Level of Service	C	C			C	C	C	B		C	B	
Approach Delay (s)		26.2			25.2			15.8			12.6	
Approach LOS		C			C			B			B	
























Intersection Summary

HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
10: Harding Blvd & Roseville Square
























Cumulative Plus Project Conditions
AM Peak Hour

													
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR	
Lane Configurations													
Traffic Volume (vph)	76	10	27	25	1	7	41	1092	26	8	784	27	
Future Volume (vph)	76	10	27	25	1	7	41	1092	26	8	784	27	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.0		3.0	2.0		
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95		
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00		
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1784	1583		1777	1583	1770	3527		1770	3522		
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (perm)		1784	1583		1777	1583	1770	3527		1770	3522		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	83	11	29	27	1	8	45	1187	28	9	852	29	
RTOR Reduction (vph)	0	0	25	0	0	8	0	1	0	0	2	0	
Lane Group Flow (vph)	0	94	4	0	28	0	45	1214	0	9	879	0	
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA		
Protected Phases	4	4		3	3		5	2		1	6		
Permitted Phases			4			3							
Actuated Green, G (s)		7.0	7.0		2.4	2.4	2.8	33.6		1.1	31.9		
Effective Green, g (s)		8.0	8.0		3.4	3.4	3.8	35.6		2.1	33.9		
Actuated g/C Ratio		0.13	0.13		0.06	0.06	0.06	0.59		0.03	0.56		
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0		
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		237	210		100	89	111	2089		61	1986		
v/s Ratio Prot		c0.05			c0.02		c0.03	c0.34		0.01	0.25		
v/s Ratio Perm			0.00			0.00							
v/c Ratio		0.40	0.02		0.28	0.01	0.41	0.58		0.15	0.44		
Uniform Delay, d1		23.8	22.6		27.2	26.8	27.1	7.6		28.1	7.6		
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2		1.1	0.0		1.5	0.0	2.4	0.4		1.1	0.2		
Delay (s)		24.9	22.7		28.7	26.8	29.5	8.0		29.3	7.8		
Level of Service		C	C		C	C	C	A		C	A		
Approach Delay (s)		24.4			28.3			8.8			8.0		
Approach LOS		C			C			A			A		
Intersection Summary													
HCM 2000 Control Delay			9.6		HCM 2000 Level of Service						A		
HCM 2000 Volume to Capacity ratio			0.52										
Actuated Cycle Length (s)			60.1		Sum of lost time (s)						11.0		
Intersection Capacity Utilization			52.1%		ICU Level of Service						A		
Analysis Period (min)			15										

c Critical Lane Group

JAA MPR Traffic Analysis
11: Harding Blvd & Douglas Blvd













Cumulative Plus Project Conditions
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	226	1344	16	70	658	922	16	8	29	650	11	206	
Future Volume (vph)	226	1344	16	70	658	922	16	8	29	650	11	206	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	
Satd. Flow (prot)	1770	3533		1770	3539	1583	1770	1863	1583	1681	1688	1583	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	
Satd. Flow (perm)	1770	3533		1770	3539	1583	1770	1863	1583	1681	1688	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	246	1461	17	76	715	1002	17	9	32	707	12	224	
RTOR Reduction (vph)	0	1	0	0	0	452	0	0	30	0	0	175	
Lane Group Flow (vph)	246	1477	0	76	715	550	17	9	2	361	358	49	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm	
Protected Phases	5	2		1	6		3	3		4	4		
Permitted Phases						6			3			4	
Actuated Green, G (s)	12.1	38.6		7.5	34.0	34.0	4.0	4.0	4.0	17.1	17.1	17.1	
Effective Green, g (s)	13.1	39.6		8.5	35.0	35.0	5.0	5.0	5.0	18.1	18.1	18.1	
Actuated g/C Ratio	0.16	0.48		0.10	0.42	0.42	0.06	0.06	0.06	0.22	0.22	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	278	1681		180	1488	665	106	111	95	365	367	344	
v/s Ratio Prot	c0.14	c0.42		0.04	0.20		c0.01	0.00		c0.21	0.21		
v/s Ratio Perm						0.35			0.00			0.03	
v/c Ratio	0.88	0.88		0.42	0.48	0.83	0.16	0.08	0.02	0.99	0.98	0.14	
Uniform Delay, d1	34.3	19.6		35.0	17.5	21.4	37.1	36.9	36.8	32.5	32.3	26.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	26.6	5.6		1.6	0.2	8.3	0.7	0.3	0.1	43.7	40.1	0.2	
Delay (s)	60.9	25.2		36.6	17.7	29.7	37.8	37.2	36.9	76.1	72.4	26.5	
Level of Service	E	C		D	B	C	D	D	D	E	E	C	
Approach Delay (s)		30.3			25.2			37.2			62.9		
Approach LOS		C			C			D			E		
Intersection Summary													
HCM 2000 Control Delay			35.2									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.89										
Actuated Cycle Length (s)			83.2									Sum of lost time (s)	12.0
Intersection Capacity Utilization			82.9%									ICU Level of Service	E
Analysis Period (min)			15										

c Critical Lane Group

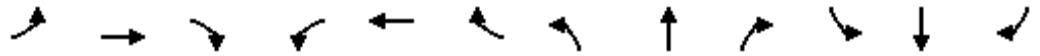
JAA MPR Traffic Analysis
12: Douglas Blvd & I-80 WB

Cumulative Plus Project Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↖↖		↗
Traffic Volume (veh/h)	0	1013	320	0	1482	1051	0	0	0	842	0	157
Future Volume (veh/h)	0	1013	320	0	1482	1051	0	0	0	842	0	157
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863				1863	0	1863
Adj Flow Rate, veh/h	0	1101	0	0	1611	0				915	0	171
Adj No. of Lanes	0	2	1	0	2	1				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	0	2
Cap, veh/h	0	2159	950	0	2183	950				1067	0	491
Arrive On Green	0.00	0.61	0.00	0.00	1.00	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	3632	1583	0	3632	1583				3442	0	1583
Grp Volume(v), veh/h	0	1101	0	0	1611	0				915	0	171
Grp Sat Flow(s),veh/h/ln	0	1770	1583	0	1770	1583				1721	0	1583
Q Serve(g_s), s	0.0	10.6	0.0	0.0	0.0	0.0				15.0	0.0	5.0
Cycle Q Clear(g_c), s	0.0	10.6	0.0	0.0	0.0	0.0				15.0	0.0	5.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2159	950	0	2183	950				1067	0	491
V/C Ratio(X)	0.00	0.51	0.00	0.00	0.74	0.00				0.86	0.00	0.35
Avail Cap(c_a), veh/h	0	2159	950	0	2183	950				1067	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.48	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.6	0.0	0.0	0.0	0.0				19.5	0.0	16.0
Incr Delay (d2), s/veh	0.0	0.9	0.0	0.0	1.1	0.0				7.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.3	0.0	0.0	0.3	0.0				8.2	0.0	2.2
LnGrp Delay(d),s/veh	0.0	7.5	0.0	0.0	1.1	0.0				26.6	0.0	16.4
LnGrp LOS		A			A					C		B
Approach Vol, veh/h		1101			1611						1086	
Approach Delay, s/veh		7.5			1.1						25.0	
Approach LOS		A			A						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		39.0		21.0		39.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		35.0		17.0		35.0						
Max Q Clear Time (g_c+I1), s		12.6		17.0		2.0						
Green Ext Time (p_c), s		15.8		0.0		20.5						
Intersection Summary												
HCM 2010 Ctrl Delay			9.8									
HCM 2010 LOS			A									

JAA MPR Traffic Analysis
13: I-80 EB & Douglas Blvd

Cumulative Plus Project Conditions
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑			↑↑↑	↗			↗			↗↗
Traffic Volume (vph)	205	1042	0	0	1546	271	0	0	1389	0	0	981
Future Volume (vph)	205	1042	0	0	1546	271	0	0	1389	0	0	981
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0			2.0	2.0			3.0			3.0
Lane Util. Factor	1.00	0.86			0.91	1.00			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			5085	1583			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			5085	1583			1611			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	1133	0	0	1680	295	0	0	1510	0	0	1066
RTOR Reduction (vph)	0	0	0	0	0	173	0	0	0	0	0	573
Lane Group Flow (vph)	223	1133	0	0	1680	122	0	0	1510	0	0	493
Turn Type	Prot	NA			NA	Perm			Free			Perm
Protected Phases	5	2			6							
Permitted Phases						6			Free			4
Actuated Green, G (s)	10.9	36.7			22.8	22.8			60.0			13.3
Effective Green, g (s)	12.9	38.7			24.8	24.8			60.0			15.3
Actuated g/C Ratio	0.22	0.65			0.41	0.41			1.00			0.26
Clearance Time (s)	4.0	5.0			4.0	4.0						5.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	380	4133			2101	654			1611			710
v/s Ratio Prot	0.13	0.18			0.33							
v/s Ratio Perm						0.08			c0.94			0.18
v/c Ratio	0.59	0.27			0.80	0.19			0.94			0.69
Uniform Delay, d1	21.2	4.6			15.4	11.2			0.0			20.2
Progression Factor	1.15	1.13			1.00	1.00			1.00			1.00
Incremental Delay, d2	1.7	0.0			3.3	0.6			11.8			3.0
Delay (s)	26.1	5.2			18.7	11.8			11.8			23.2
Level of Service	C	A			B	B			B			C
Approach Delay (s)		8.7			17.7			11.8			23.2	
Approach LOS		A			B			B			C	
























Intersection Summary

HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
14: Sunrise Ave & Douglas Blvd

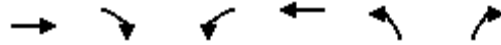
Cumulative Plus Project Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	1826	216	109	1336	66	316	562	74	56	169	165
Future Volume (veh/h)	390	1826	216	109	1336	66	316	562	74	56	169	165
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	424	1985	235	118	1452	72	343	611	80	61	184	179
Adj No. of Lanes	2	3	1	2	4	0	2	2	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	579	2553	1000	241	2546	126	491	847	368	176	750	490
Arrive On Green	0.17	0.50	0.49	0.07	0.40	0.40	0.14	0.24	0.23	0.05	0.15	0.14
Sat Flow, veh/h	3442	5085	1583	3442	6301	312	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	424	1985	235	118	1107	417	343	611	80	61	184	179
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1808	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	8.9	24.4	4.9	2.5	13.6	13.7	7.3	12.1	3.1	1.3	2.4	6.7
Cycle Q Clear(g_c), s	8.9	24.4	4.9	2.5	13.6	13.7	7.3	12.1	3.1	1.3	2.4	6.7
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	579	2553	1000	241	1942	730	491	847	368	176	750	490
V/C Ratio(X)	0.73	0.78	0.23	0.49	0.57	0.57	0.70	0.72	0.22	0.35	0.25	0.37
Avail Cap(c_a), veh/h	766	2553	1000	585	2075	781	676	847	368	585	965	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	15.5	6.1	34.2	17.6	17.6	31.2	26.7	23.7	35.0	28.8	20.6
Incr Delay (d2), s/veh	2.5	1.6	0.1	1.5	0.3	0.9	1.9	3.0	0.3	1.2	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	11.6	2.1	1.2	6.0	6.9	3.6	6.3	1.4	0.6	1.2	3.0
LnGrp Delay(d),s/veh	32.7	17.1	6.2	35.7	18.0	18.5	33.1	29.8	24.0	36.2	29.0	21.0
LnGrp LOS	C	B	A	D	B	B	C	C	C	D	C	C
Approach Vol, veh/h		2644			1642			1034			424	
Approach Delay, s/veh		18.6			19.4			30.4			26.7	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	40.4	13.9	13.8	15.9	32.9	6.9	20.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	35.0	14.0	13.0	16.0	31.0	12.0	15.0				
Max Q Clear Time (g_c+I1), s	4.5	26.4	9.3	8.7	10.9	15.7	3.3	14.1				
Green Ext Time (p_c), s	0.2	8.6	0.7	1.1	0.9	13.2	0.1	0.7				
Intersection Summary												
HCM 2010 Ctrl Delay			21.6									
HCM 2010 LOS			C									

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑		
Traffic Volume (veh/h)	704	255	177	1051	114	822		
Future Volume (veh/h)	704	255	177	1051	114	822		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1788	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	765	277	192	1142	124	893		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1091	508	435	2224	476	901		
Arrive On Green	0.32	0.30	0.25	0.63	0.27	0.27		
Sat Flow, veh/h	3487	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	765	277	192	1142	124	893		
Grp Sat Flow(s),veh/h/ln	1699	1583	1774	1770	1774	1583		
Q Serve(g_s), s	9.6	7.0	4.4	8.6	2.7	13.0		
Cycle Q Clear(g_c), s	9.6	7.0	4.4	8.6	2.7	13.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1091	508	435	2224	476	901		
V/C Ratio(X)	0.70	0.54	0.44	0.51	0.26	0.99		
Avail Cap(c_a), veh/h	1262	588	769	3068	476	901		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.4	13.5	15.5	4.9	13.9	7.3		
Incr Delay (d2), s/veh	1.5	0.9	0.7	0.2	0.3	27.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.7	3.2	2.2	4.2	1.3	18.6		
LnGrp Delay(d),s/veh	15.9	14.4	16.2	5.1	14.2	35.1		
LnGrp LOS	B	B	B	A	B	D		
Approach Vol, veh/h	1042			1334	1017			
Approach Delay, s/veh	15.5			6.7	32.6			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.9	17.6		16.0		32.4		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	20.0	16.0		12.0		40.0		
Max Q Clear Time (g_c+I1), s	6.4	11.6		15.0		10.6		
Green Ext Time (p_c), s	5.3	2.0		0.0		7.0		
Intersection Summary								
HCM 2010 Ctrl Delay				17.2				
HCM 2010 LOS				B				

JAA MPR Traffic Analysis
2: I-80 WB & Atlantic Street

Cumulative Plus Project Conditions
School PM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑↓	↑↑		↑
Traffic Volume (vph)	796	862	884	1208	0	1116
Future Volume (vph)	796	862	884	1208	0	1116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	2.0		4.0
Lane Util. Factor	0.91	1.00	0.97	0.95		1.00
Frt	1.00	0.85	1.00	1.00		0.86
Flt Protected	1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)	5085	1583	3433	3539		1611
Flt Permitted	1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)	5085	1583	3433	3539		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	865	937	961	1313	0	1213
RTOR Reduction (vph)	0	526	0	0	0	300
Lane Group Flow (vph)	865	411	961	1313	0	913
Turn Type	NA	Perm	Prot	NA		Perm
Protected Phases	2		1	6		
Permitted Phases		2				8
Actuated Green, G (s)	37.0	37.0	35.0	76.0		65.0
Effective Green, g (s)	39.0	39.0	36.0	78.0		66.0
Actuated g/C Ratio	0.26	0.26	0.24	0.52		0.44
Clearance Time (s)	4.0	4.0	4.0	4.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	1322	411	823	1840		708
v/s Ratio Prot	0.17		c0.28	0.37		
v/s Ratio Perm		c0.26				c0.57
v/c Ratio	0.65	1.00	1.17	0.71		1.29
Uniform Delay, d1	49.5	55.5	57.0	27.5		42.0
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	1.2	44.0	88.4	1.3		140.7
Delay (s)	50.7	99.4	145.4	28.8		182.7
Level of Service	D	F	F	C		F
Approach Delay (s)	76.0			78.1	182.7	
Approach LOS	E			E	F	

Intersection Summary

HCM 2000 Control Delay	101.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
 3: I-80 EB/Taylor Road & Eureka Road/Atlantic Street

Cumulative Plus Project Conditions
 School PM Peak



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	163	1419	341	0	1306	1053	179	410	578	340	0	459
Future Volume (vph)	163	1419	341	0	1306	1053	179	410	578	340	0	459
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0		2.5	2.5	2.5	2.5	3.0	2.5		2.5
Lane Util. Factor	0.97	0.95	1.00		0.86	1.00	1.00	0.95	1.00	0.97		1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3433	3539	1583		6408	1583	1770	3539	1583	3433		1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3433	3539	1583		6408	1583	1770	3539	1583	3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	1542	371	0	1420	1145	195	446	628	370	0	499
RTOR Reduction (vph)	0	0	180	0	0	0	0	0	0	0	0	58
Lane Group Flow (vph)	177	1542	191	0	1420	1145	195	446	628	370	0	441
Turn Type	Prot	NA	Perm		NA	Free	Prot	NA	Free	Prot		pt+ov
Protected Phases	5	2			6		3	8		7		4 5
Permitted Phases			2		6	Free		8	Free			
Actuated Green, G (s)	9.9	35.7	35.7		21.8	71.4	11.0	12.5	71.4	11.2		26.6
Effective Green, g (s)	11.4	37.2	36.7		23.3	71.4	12.5	14.0	71.4	12.7		28.1
Actuated g/C Ratio	0.16	0.52	0.51		0.33	1.00	0.18	0.20	1.00	0.18		0.39
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0		
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0		
Lane Grp Cap (vph)	548	1843	813		2091	1583	309	693	1583	610		623
v/s Ratio Prot	0.05	c0.44			0.22		0.11	0.13		0.11		0.28
v/s Ratio Perm			0.12			c0.72			0.40			
v/c Ratio	0.32	0.84	0.23		0.68	0.72	0.63	0.64	0.40	0.61		0.71
Uniform Delay, d1	26.6	14.5	9.6		20.8	0.0	27.3	26.4	0.0	27.0		18.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.3	3.5	0.1		0.9	2.9	4.2	2.1	0.7	1.7		3.7
Delay (s)	26.9	18.0	9.7		21.7	2.9	31.5	28.5	0.7	28.8		21.9
Level of Service	C	B	A		C	A	C	C	A	C		C
Approach Delay (s)		17.3			13.3			15.2				24.8
Approach LOS		B			B			B				C

Intersection Summary

HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
4: N. Sunrise Ave & Eureka Road

Cumulative Plus Project Conditions
School PM Peak



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	251	1527	409	170	1775	59	455	453	219	145	558	159
Future Volume (vph)	251	1527	409	170	1775	59	455	453	219	145	558	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.5	3.0	3.0	1.5	3.0	3.0	1.5	3.0	3.0	1.5	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.94	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	4990	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	4990	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	1660	445	185	1929	64	495	492	238	158	607	173
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	273	1660	445	185	1929	64	495	492	238	158	607	173
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases		4	Free			Free			Free		6	Free
Actuated Green, G (s)	10.5	24.5	72.4	9.1	23.1	72.4	11.2	14.3	72.4	8.5	11.6	72.4
Effective Green, g (s)	11.5	27.0	72.4	10.1	25.6	72.4	12.2	16.8	72.4	9.5	14.1	72.4
Actuated g/C Ratio	0.16	0.37	1.00	0.14	0.35	1.00	0.17	0.23	1.00	0.13	0.19	1.00
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	545	1896	1583	478	2265	1583	840	1179	1583	450	990	1583
v/s Ratio Prot	c0.08	c0.33		0.05	0.30		c0.10	0.10		0.05	c0.12	
v/s Ratio Perm			c0.28			0.04			0.15			0.11
v/c Ratio	0.50	0.88	0.28	0.39	0.85	0.04	0.59	0.42	0.15	0.35	0.61	0.11
Uniform Delay, d1	27.8	21.1	0.0	28.3	21.6	0.0	27.8	23.6	0.0	28.6	26.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	4.9	0.4	0.5	3.3	0.0	1.1	0.2	0.2	0.5	1.1	0.1
Delay (s)	28.6	26.0	0.4	28.9	24.9	0.0	28.9	23.9	0.2	29.1	27.8	0.1
Level of Service	C	C	A	C	C	A	C	C	A	C	C	A
Approach Delay (s)		21.5			24.5			21.3			22.9	
Approach LOS		C			C			C			C	

























Intersection Summary

HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group























JAA MPR Traffic Analysis
5: Galleria Blvd & Roseville Pkwy

Cumulative Plus Project Conditions
School PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	1254	891	322	1438	601	538	612	79	790	1071	409
Future Volume (veh/h)	328	1254	891	322	1438	601	538	612	79	790	1071	409
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1788	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	357	1363	0	350	1563	0	585	665	0	859	1164	0
Adj No. of Lanes	2	4	1	2	4	1	2	3	1	3	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	493	1683	380	496	1650	372	616	1533	451	1096	1208	514
Arrive On Green	0.15	0.26	0.00	0.14	0.26	0.00	0.18	0.30	0.00	0.22	0.34	0.00
Sat Flow, veh/h	3304	6408	1583	3442	6408	1583	3442	5085	1583	5003	3539	1583
Grp Volume(v), veh/h	357	1363	0	350	1563	0	585	665	0	859	1164	0
Grp Sat Flow(s),veh/h/ln	1652	1602	1583	1721	1602	1583	1721	1695	1583	1668	1770	1583
Q Serve(g_s), s	9.2	17.8	0.0	8.7	21.4	0.0	15.0	9.4	0.0	14.5	28.8	0.0
Cycle Q Clear(g_c), s	9.2	17.8	0.0	8.7	21.4	0.0	15.0	9.4	0.0	14.5	28.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	493	1683	380	496	1650	372	616	1533	451	1096	1208	514
V/C Ratio(X)	0.72	0.81	0.00	0.71	0.95	0.00	0.95	0.43	0.00	0.78	0.96	0.00
Avail Cap(c_a), veh/h	518	1683	380	539	1650	372	616	1533	451	1176	1208	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.2	30.8	0.0	36.4	32.6	0.0	36.3	25.1	0.0	32.9	28.9	0.0
Incr Delay (d2), s/veh	4.7	3.1	0.0	3.8	12.0	0.0	24.3	0.2	0.0	3.3	17.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	8.2	0.0	4.4	10.8	0.0	9.2	4.4	0.0	7.0	17.0	0.0
LnGrp Delay(d),s/veh	41.0	33.9	0.0	40.2	44.6	0.0	60.6	25.3	0.0	36.2	46.6	0.0
LnGrp LOS	D	C		D	D		E	C		D	D	
Approach Vol, veh/h		1720			1913			1250			2023	
Approach Delay, s/veh		35.4			43.8			41.8			42.2	
Approach LOS		D			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.6	28.4	14.9	24.5	18.0	32.0	15.3	24.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	19.0	23.0	12.0	20.0	14.0	28.0	12.0	20.0				
Max Q Clear Time (g_c+I1), s	16.5	11.4	10.7	19.8	17.0	30.8	11.2	23.4				
Green Ext Time (p_c), s	1.1	4.6	0.2	0.2	0.0	0.0	0.1	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			40.9									
HCM 2010 LOS			D									

JAA MPR Traffic Analysis
6: Harding Blvd & Wills Road

Cumulative Plus Project Conditions
School PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	5	204	23	23	50	304	1197	3	5	1687	549
Future Volume (vph)	210	5	204	23	23	50	304	1197	3	5	1687	549
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	1.5		3.0	1.5	1.5
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1817	1583	3433	3538		1770	3539	1583
Flt Permitted	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1689	1583		1817	1583	3433	3538		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	5	222	25	25	54	330	1301	3	5	1834	597
RTOR Reduction (vph)	0	0	81	0	0	51	0	0	0	0	0	95
Lane Group Flow (vph)	116	117	141	0	50	3	330	1304	0	5	1834	502
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	3	3		5	2		1		6
Permitted Phases			4			3						6
Actuated Green, G (s)	13.2	13.2	29.8		7.2	7.2	16.6	96.0		1.2	80.6	80.6
Effective Green, g (s)	14.2	14.2	31.8		8.2	8.2	17.6	98.5		2.2	83.1	83.1
Actuated g/C Ratio	0.11	0.11	0.24		0.06	0.06	0.13	0.74		0.02	0.62	0.62
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	178	179	412		111	97	452	2608		29	2201	984
v/s Ratio Prot	0.07	c0.07	0.05		c0.03		c0.10	0.37		0.00	c0.52	
v/s Ratio Perm			0.04			0.00						0.32
v/c Ratio	0.65	0.65	0.34		0.45	0.03	0.73	0.50		0.17	0.83	0.51
Uniform Delay, d1	57.3	57.3	42.2		60.5	59.0	55.7	7.3		64.8	19.8	14.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.3	8.3	0.5		2.9	0.1	6.0	0.2		2.8	2.9	0.4
Delay (s)	65.6	65.6	42.7		63.4	59.1	61.7	7.5		67.6	22.7	14.4
Level of Service	E	E	D		E	E	E	A		E	C	B
Approach Delay (s)		54.4			61.2			18.4			20.8	
Approach LOS		D			E			B			C	

Intersection Summary

HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	133.6	Sum of lost time (s)	10.5
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
7: Harding Blvd & Lead Hill Blvd

Cumulative Plus Project Conditions
School PM Peak





































Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	647	527	837	466	1080	816
Future Volume (vph)	647	527	837	466	1080	816
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	1.7	1.7	1.7	3.0
Lane Util. Factor	0.97	0.91	0.95	1.00	0.97	0.95
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.97	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.96	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3372	1441	3539	1583	3433	3539
Flt Permitted	0.96	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3372	1441	3539	1583	3433	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	703	573	910	507	1174	887
RTOR Reduction (vph)	30	282	0	359	0	0
Lane Group Flow (vph)	845	119	910	148	1174	887
Confl. Peds. (#/hr)	484					
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	20.0	20.0	18.0	18.0	25.0	47.0
Effective Green, g (s)	21.0	22.3	20.3	20.3	27.3	48.0
Actuated g/C Ratio	0.28	0.30	0.27	0.27	0.36	0.64
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	944	428	957	428	1249	2264
v/s Ratio Prot	c0.25		c0.26		c0.34	0.25
v/s Ratio Perm		0.08		0.09		
v/c Ratio	0.90	0.28	0.95	0.35	0.94	0.39
Uniform Delay, d1	25.9	20.2	26.9	22.0	23.1	6.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.9	0.4	18.3	0.5	13.4	0.1
Delay (s)	36.9	20.5	45.2	22.5	36.5	6.6
Level of Service	D	C	D	C	D	A
Approach Delay (s)	31.7		37.1			23.6
Approach LOS	C		D			C

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.4
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

JAA MPR Traffic Analysis
8: N. Sunrise Ave & Lead Hill Blvd

Cumulative Plus Project Conditions
School PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  		  	  	  
Traffic Volume (vph)	153	544	478	86	585	162	324	406	62	169	628	349
Future Volume (vph)	153	544	478	86	585	162	324	406	62	169	628	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.0	2.0	3.0	1.3	1.3	3.0	1.7	3.0	3.0	1.7	1.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	166	591	520	93	636	176	352	441	67	184	683	379
RTOR Reduction (vph)	0	0	370	0	0	131	0	0	48	0	0	305
Lane Group Flow (vph)	166	591	150	93	636	45	352	441	19	184	683	74
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	10.4	18.1	18.1	7.4	15.1	15.1	16.9	19.2	19.2	9.0	11.3	11.3
Effective Green, g (s)	11.4	20.1	20.1	8.4	17.8	17.8	17.9	21.5	20.2	10.0	13.6	13.6
Actuated g/C Ratio	0.16	0.29	0.29	0.12	0.26	0.26	0.26	0.31	0.29	0.14	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	289	1020	456	213	903	404	454	1568	458	509	1026	319
v/s Ratio Prot	c0.09	c0.17		0.05	c0.18		c0.20	0.09		0.05	c0.13	
v/s Ratio Perm			0.09			0.03			0.01			0.05
v/c Ratio	0.57	0.58	0.33	0.44	0.70	0.11	0.78	0.28	0.04	0.36	0.67	0.23
Uniform Delay, d1	26.9	21.2	19.5	28.5	23.6	19.9	24.0	18.2	17.8	27.0	25.9	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.8	0.4	1.4	2.5	0.1	8.1	0.1	0.0	0.4	1.6	0.4
Delay (s)	29.7	22.0	19.9	29.9	26.1	20.0	32.1	18.3	17.8	27.4	27.6	24.0
Level of Service	C	C	B	C	C	C	C	B	B	C	C	C
Approach Delay (s)		22.1			25.3			23.9			26.5	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			24.4									C
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			69.7						9.7			
Intersection Capacity Utilization			68.1%									C
ICU Level of Service												
Analysis Period (min)			15									
c Critical Lane Group												

JAA MPR Traffic Analysis
9: Harding Blvd & Estates Drive

Cumulative Plus Project Conditions
School PM Peak



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	323	16	28	27	13	57	42	962	0	81	1202	159
Future Volume (vph)	323	16	28	27	13	57	42	962	0	81	1202	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0	3.0	3.0	2.0		3.0	2.0	
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.98			1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1666			1802	1583	1770	3539		1770	3477	
Flt Permitted	0.95	0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1666			1802	1583	1770	3539		1770	3477	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	351	17	30	29	14	62	46	1046	0	88	1307	173
RTOR Reduction (vph)	0	4	0	0	0	58	0	0	0	0	7	0
Lane Group Flow (vph)	200	194	0	0	43	4	46	1046	0	88	1473	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	19.6	19.6			6.4	6.4	6.5	52.6		8.4	54.5	
Effective Green, g (s)	20.6	20.6			7.4	7.4	7.5	54.6		9.4	56.5	
Actuated g/C Ratio	0.20	0.20			0.07	0.07	0.07	0.53		0.09	0.55	
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	336	333			129	113	128	1876		161	1907	
v/s Ratio Prot	c0.12	0.12			c0.02		0.03	0.30		c0.05	c0.42	
v/s Ratio Perm						0.00						
v/c Ratio	0.60	0.58			0.33	0.04	0.36	0.56		0.55	0.77	
Uniform Delay, d1	37.4	37.3			45.5	44.5	45.5	16.1		44.8	18.2	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.8	2.6			1.5	0.1	1.7	0.4		3.8	2.0	
Delay (s)	40.2	39.9			47.0	44.6	47.2	16.5		48.5	20.2	
Level of Service	D	D			D	D	D	B		D	C	
Approach Delay (s)		40.1			45.6			17.8			21.8	
Approach LOS		D			D			B			C	

Intersection Summary

HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	103.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
10: Harding Blvd & Roseville Square

Cumulative Plus Project Conditions
School PM Peak



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕	↗		↕	↗	↖	↕↗		↖	↕↗	
Traffic Volume (vph)	149	19	177	144	8	53	129	820	28	28	1134	35
Future Volume (vph)	149	19	177	144	8	53	129	820	28	28	1134	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.0		3.0	2.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1779	1583	1770	3522		1770	3523	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1779	1583	1770	3522		1770	3523	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	21	192	157	9	58	140	891	30	30	1233	38
RTOR Reduction (vph)	0	0	162	0	0	49	0	1	0	0	2	0
Lane Group Flow (vph)	0	183	30	0	166	9	140	920	0	30	1269	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		17.6	17.6		16.4	16.4	14.7	62.8		4.7	52.8	
Effective Green, g (s)		18.6	18.6		17.4	17.4	15.7	64.8		5.7	54.8	
Actuated g/C Ratio		0.16	0.16		0.15	0.15	0.13	0.55		0.05	0.47	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		282	250		263	234	236	1942		85	1643	
v/s Ratio Prot		c0.10			c0.09		c0.08	0.26		0.02	c0.36	
v/s Ratio Perm			0.02			0.01						
v/c Ratio		0.65	0.12		0.63	0.04	0.59	0.47		0.35	0.77	
Uniform Delay, d1		46.4	42.4		47.0	42.9	47.9	16.0		54.1	26.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.1	0.2		4.9	0.1	4.0	0.2		2.5	2.3	
Delay (s)		51.5	42.7		51.9	42.9	51.9	16.2		56.6	28.5	
Level of Service		D	D		D	D	D	B		E	C	
Approach Delay (s)		47.0			49.6			20.9			29.1	
Approach LOS		D			D			C			C	

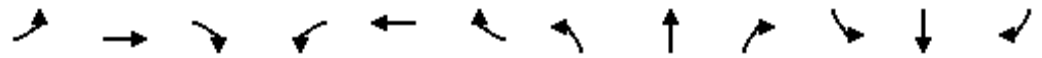
Intersection Summary

HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
11: Harding Blvd & Douglas Blvd

Cumulative Plus Project Conditions
School PM Peak















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	366	1356	16	90	875	683	29	30	91	1060	12	316
Future Volume (vph)	366	1356	16	90	875	683	29	30	91	1060	12	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3533		1770	3539	1583	1770	1863	1583	1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3533		1770	3539	1583	1770	1863	1583	1681	1687	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	398	1474	17	98	951	742	32	33	99	1152	13	343
RTOR Reduction (vph)	0	1	0	0	0	239	0	0	93	0	0	158
Lane Group Flow (vph)	398	1490	0	98	951	503	32	33	6	588	577	185
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4		4
Permitted Phases						6			3			4
Actuated Green, G (s)	31.0	62.8		11.2	43.0	43.0	8.2	8.2	8.2	48.0	48.0	48.0
Effective Green, g (s)	32.0	63.8		12.2	44.0	44.0	9.2	9.2	9.2	49.0	49.0	49.0
Actuated g/C Ratio	0.22	0.44		0.08	0.30	0.30	0.06	0.06	0.06	0.34	0.34	0.34
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	387	1541		147	1065	476	111	117	99	563	565	530
v/s Ratio Prot	c0.22	0.42		0.06	0.27		c0.02	0.02		c0.35	0.34	
v/s Ratio Perm						c0.32			0.00			0.12
v/c Ratio	1.03	0.97		0.67	0.89	1.06	0.29	0.28	0.06	1.04	1.02	0.35
Uniform Delay, d1	57.1	40.2		65.0	48.8	51.1	65.4	65.3	64.4	48.6	48.6	36.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.2	15.6		10.9	9.7	57.0	1.4	1.3	0.3	50.0	43.3	0.4
Delay (s)	110.3	55.8		75.9	58.5	108.1	66.8	66.7	64.7	98.6	91.9	37.0
Level of Service	F	E		E	E	F	E	E	E	F	F	D
Approach Delay (s)		67.3			80.0			65.5			82.0	
Approach LOS		E			F			E			F	

Intersection Summary

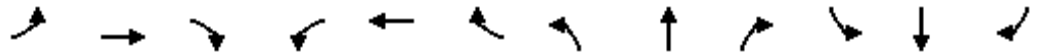
HCM 2000 Control Delay	75.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	146.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↖↖		↗
Traffic Volume (veh/h)	0	1145	802	0	1542	1129	0	0	0	892	0	154
Future Volume (veh/h)	0	1145	802	0	1542	1129	0	0	0	892	0	154
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863				1863	0	1863
Adj Flow Rate, veh/h	0	1245	0	0	1676	0				970	0	167
Adj No. of Lanes	0	2	1	0	2	1				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	0	2
Cap, veh/h	0	2112	928	0	2136	928				1103	0	508
Arrive On Green	0.00	0.60	0.00	0.00	0.60	0.00				0.32	0.00	0.32
Sat Flow, veh/h	0	3632	1583	0	3632	1583				3442	0	1583
Grp Volume(v), veh/h	0	1245	0	0	1676	0				970	0	167
Grp Sat Flow(s),veh/h/ln	0	1770	1583	0	1770	1583				1721	0	1583
Q Serve(g_s), s	0.0	12.7	0.0	0.0	20.7	0.0				15.5	0.0	4.6
Cycle Q Clear(g_c), s	0.0	12.7	0.0	0.0	20.7	0.0				15.5	0.0	4.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2112	928	0	2136	928				1103	0	508
V/C Ratio(X)	0.00	0.59	0.00	0.00	0.78	0.00				0.88	0.00	0.33
Avail Cap(c_a), veh/h	0	2232	982	0	2257	982				1103	0	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.3	0.0	0.0	8.7	0.0				18.7	0.0	15.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	1.8	0.0				8.4	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.2	0.0	0.0	10.3	0.0				8.6	0.0	2.1
LnGrp Delay(d),s/veh	0.0	7.7	0.0	0.0	10.5	0.0				27.0	0.0	15.3
LnGrp LOS		A			B					C		B
Approach Vol, veh/h		1245			1676						1137	
Approach Delay, s/veh		7.7			10.5						25.3	
Approach LOS		A			B						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		37.0		21.0		37.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		35.0		17.0		35.0						
Max Q Clear Time (g_c+I1), s		14.7		17.5		22.7						
Green Ext Time (p_c), s		15.7		0.0		10.3						
Intersection Summary												
HCM 2010 Ctrl Delay			13.8									
HCM 2010 LOS			B									

JAA MPR Traffic Analysis
13: I-80 EB & Douglas Blvd

Cumulative Plus Project Conditions
School PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	1008	0	0	2179	668	0	0	478	0	0	512
Future Volume (vph)	331	1008	0	0	2179	668	0	0	478	0	0	512
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0			2.0	2.0			3.0			3.0
Lane Util. Factor	1.00	0.86			0.91	1.00			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			5085	1583			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			5085	1583			1611			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	360	1096	0	0	2368	726	0	0	520	0	0	557
RTOR Reduction (vph)	0	0	0	0	0	161	0	0	0	0	0	519
Lane Group Flow (vph)	360	1096	0	0	2368	565	0	0	520	0	0	38
Turn Type	Prot	NA			NA	Perm			Free			Perm
Protected Phases	5	2			6							
Permitted Phases						6			Free			4
Actuated Green, G (s)	30.9	109.2			75.3	75.3			125.7			6.5
Effective Green, g (s)	32.9	111.2			77.3	77.3			125.7			8.5
Actuated g/C Ratio	0.26	0.88			0.61	0.61			1.00			0.07
Clearance Time (s)	4.0	5.0			4.0	4.0						5.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	463	5668			3127	973			1611			188
v/s Ratio Prot	c0.20	0.17			c0.47							
v/s Ratio Perm						0.36			c0.32			0.01
v/c Ratio	0.78	0.19			0.76	0.58			0.32			0.20
Uniform Delay, d1	43.0	1.0			17.4	14.5			0.0			55.4
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	8.0	0.0			1.1	0.9			0.5			0.5
Delay (s)	51.0	1.0			18.5	15.4			0.5			55.9
Level of Service	D	A			B	B			A			E
Approach Delay (s)		13.4			17.8			0.5			55.9	
Approach LOS		B			B			A			E	
























Intersection Summary

HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	125.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group







JAA MPR Traffic Analysis
 14: Sunrise Ave & Douglas Blvd

Cumulative Plus Project Conditions
 School PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	446	1598	188	244	2164	157	324	478	161	157	732	346
Future Volume (veh/h)	446	1598	188	244	2164	157	324	478	161	157	732	346
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	485	1737	204	265	2352	171	352	520	175	171	796	376
Adj No. of Lanes	2	3	1	2	4	0	2	2	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	548	2380	937	387	2588	188	465	764	333	290	839	504
Arrive On Green	0.16	0.47	0.46	0.11	0.42	0.42	0.14	0.22	0.21	0.08	0.16	0.16
Sat Flow, veh/h	3442	5085	1583	3442	6145	445	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	485	1737	204	265	1838	685	352	520	175	171	796	376
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1784	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	12.1	24.3	5.3	6.5	31.5	31.7	8.7	11.9	8.6	4.2	13.6	14.0
Cycle Q Clear(g_c), s	12.1	24.3	5.3	6.5	31.5	31.7	8.7	11.9	8.6	4.2	13.6	14.0
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	548	2380	937	387	2024	751	465	764	333	290	839	504
V/C Ratio(X)	0.88	0.73	0.22	0.69	0.91	0.91	0.76	0.68	0.53	0.59	0.95	0.75
Avail Cap(c_a), veh/h	548	2380	937	509	2077	771	509	764	333	509	839	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	18.9	8.4	37.5	23.9	23.9	36.6	31.7	30.8	38.8	36.3	26.8
Incr Delay (d2), s/veh	15.8	1.2	0.1	2.5	6.3	14.8	5.9	2.5	1.5	1.9	19.8	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	11.5	2.3	3.2	15.0	18.5	4.5	6.0	3.9	2.1	7.9	9.0
LnGrp Delay(d),s/veh	52.0	20.1	8.5	40.0	30.1	38.7	42.5	34.2	32.4	40.7	56.1	32.7
LnGrp LOS	D	C	A	D	C	D	D	C	C	D	E	C
Approach Vol, veh/h		2426			2788			1047			1343	
Approach Delay, s/veh		25.5			33.2			36.7			47.6	
Approach LOS		C			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.9	43.1	14.9	17.0	17.0	39.0	10.4	21.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	37.0	12.0	13.0	13.0	36.0	12.0	13.0				
Max Q Clear Time (g_c+I1), s	8.5	26.3	10.7	16.0	14.1	33.7	6.2	13.9				
Green Ext Time (p_c), s	0.4	10.7	0.2	0.0	0.0	1.3	0.3	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			33.7									
HCM 2010 LOS			C									

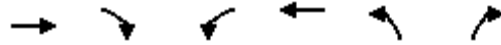
JAA MPR Traffic Analysis
1: Wills Road & Atlantic Street

Cumulative Plus Project Conditions
PM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑		
Traffic Volume (veh/h)	731	270	248	1640	117	650		
Future Volume (veh/h)	731	270	248	1640	117	650		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1788	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	795	293	270	1783	127	707		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1110	517	507	2364	425	868		
Arrive On Green	0.33	0.31	0.29	0.67	0.24	0.24		
Sat Flow, veh/h	3487	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	795	293	270	1783	127	707		
Grp Sat Flow(s),veh/h/ln	1699	1583	1774	1770	1774	1583		
Q Serve(g_s), s	11.2	8.3	6.9	18.3	3.2	13.0		
Cycle Q Clear(g_c), s	11.2	8.3	6.9	18.3	3.2	13.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1110	517	507	2364	425	868		
V/C Ratio(X)	0.72	0.57	0.53	0.75	0.30	0.81		
Avail Cap(c_a), veh/h	1316	613	589	2742	425	868		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.0	15.1	16.3	6.0	16.9	8.5		
Incr Delay (d2), s/veh	1.5	1.0	0.9	1.0	0.4	6.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.4	3.8	3.5	9.0	1.6	11.9		
LnGrp Delay(d),s/veh	17.6	16.1	17.2	7.1	17.3	14.5		
LnGrp LOS	B	B	B	A	B	B		
Approach Vol, veh/h	1088			2053	834			
Approach Delay, s/veh	17.2			8.4	14.9			
Approach LOS	B			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	18.5	19.7		16.0		38.2		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	17.0	19.0		12.0		40.0		
Max Q Clear Time (g_c+I1), s	8.9	13.2		15.0		20.3		
Green Ext Time (p_c), s	5.8	2.6		0.0		11.0		
Intersection Summary								
HCM 2010 Ctrl Delay			12.2					
HCM 2010 LOS			B					

JAA MPR Traffic Analysis
2: I-80 WB & Atlantic Street

Cumulative Plus Project Conditions
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↖↗	↑↑		↗
Traffic Volume (vph)	839	660	993	1889	0	1060
Future Volume (vph)	839	660	993	1889	0	1060
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0	3.0	2.0		4.0
Lane Util. Factor	0.91	1.00	0.97	0.95		1.00
Frt	1.00	0.85	1.00	1.00		0.86
Flt Protected	1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)	5085	1583	3433	3539		1611
Flt Permitted	1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)	5085	1583	3433	3539		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	912	717	1079	2053	0	1152
RTOR Reduction (vph)	0	478	0	0	0	405
Lane Group Flow (vph)	912	239	1079	2053	0	747
Turn Type	NA	Perm	Prot	NA		Perm
Protected Phases	2		1	6		
Permitted Phases		2				8
Actuated Green, G (s)	21.0	21.0	32.0	57.0		40.0
Effective Green, g (s)	23.0	23.0	33.0	59.0		41.0
Actuated g/C Ratio	0.22	0.22	0.31	0.56		0.39
Clearance Time (s)	4.0	4.0	4.0	4.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	1103	343	1068	1969		623
v/s Ratio Prot	0.18		0.31	c0.58		
v/s Ratio Perm		0.15				c0.46
v/c Ratio	0.83	0.70	1.01	1.04		1.20
Uniform Delay, d1	39.6	38.3	36.5	23.5		32.5
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	5.2	6.1	30.1	32.4		104.7
Delay (s)	44.8	44.4	66.6	55.9		137.2
Level of Service	D	D	E	E		F
Approach Delay (s)	44.6			59.6	137.2	
Approach LOS	D			E	F	

Intersection Summary

HCM 2000 Control Delay	70.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
 3: I-80 EB/Taylor Road & Eureka Road/Atlantic Street

Cumulative Plus Project Conditions
 PM Peak Hour

























Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	215	1365	320	0	1724	1456	243	452	556	376	0	472
Future Volume (vph)	215	1365	320	0	1724	1456	243	452	556	376	0	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	3.0		2.5	2.5	2.5	2.5	3.0	2.5		2.5
Lane Util. Factor	0.97	0.95	1.00		0.86	1.00	1.00	0.95	1.00	0.97		1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3433	3539	1583		6408	1583	1770	3539	1583	3433		1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3433	3539	1583		6408	1583	1770	3539	1583	3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	234	1484	348	0	1874	1583	264	491	604	409	0	513
RTOR Reduction (vph)	0	0	165	0	0	0	0	0	0	0	0	42
Lane Group Flow (vph)	234	1484	183	0	1874	1583	264	491	604	409	0	471
Turn Type	Prot	NA	Perm		NA	Free	Prot	NA	Free	Prot		pt+ov
Protected Phases	5	2			6		3	8		7		4 5
Permitted Phases			2		6	Free		8	Free			
Actuated Green, G (s)	11.0	49.0	49.0		34.0	101.0	18.0	23.9	101.0	16.1		37.0
Effective Green, g (s)	12.5	50.5	50.0		35.5	101.0	19.5	25.4	101.0	17.6		38.5
Actuated g/C Ratio	0.12	0.50	0.50		0.35	1.00	0.19	0.25	1.00	0.17		0.38
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0		
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0		
Lane Grp Cap (vph)	424	1769	783		2252	1583	341	890	1583	598		603
v/s Ratio Prot	0.07	0.42			0.29		0.15	0.14		0.12		0.30
v/s Ratio Perm			0.12			c1.00			0.38			
v/c Ratio	0.55	0.84	0.23		0.83	1.00	0.77	0.55	0.38	0.68		0.78
Uniform Delay, d1	41.6	21.7	14.6		30.0	50.5	38.7	32.9	0.0	39.1		27.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	1.6	3.7	0.2		2.8	22.6	10.5	0.7	0.7	3.2		6.5
Delay (s)	43.2	25.4	14.7		32.8	73.1	49.1	33.6	0.7	42.3		34.0
Level of Service	D	C	B		C	E	D	C	A	D		C
Approach Delay (s)		25.6			51.3			22.0			37.7	
Approach LOS		C			D			C			D	

Intersection Summary		
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio	1.11	
Actuated Cycle Length (s)	101.0	Sum of lost time (s) 10.0
Intersection Capacity Utilization	77.7%	ICU Level of Service D
Analysis Period (min)	15	

c Critical Lane Group

JAA MPR Traffic Analysis
4: N. Sunrise Ave & Eureka Road

Cumulative Plus Project Conditions
PM Peak Hour

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	217	1575	354	191	2423	92	536	526	205	162	479	258
Future Volume (vph)	217	1575	354	191	2423	92	536	526	205	162	479	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.5	3.0	3.0	1.5	3.0	3.0	1.5	3.0	3.0	1.5	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86	1.00	0.94	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	6408	1583	4990	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	6408	1583	4990	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	236	1712	385	208	2634	100	583	572	223	176	521	280
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	236	1712	385	208	2634	100	583	572	223	176	521	280
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases		4	Free			Free			Free		6	Free
Actuated Green, G (s)	11.2	49.1	104.1	10.8	48.7	104.1	15.4	18.0	104.1	10.2	12.8	104.1
Effective Green, g (s)	12.2	51.6	104.1	11.8	51.2	104.1	16.4	20.5	104.1	11.2	15.3	104.1
Actuated g/C Ratio	0.12	0.50	1.00	0.11	0.49	1.00	0.16	0.20	1.00	0.11	0.15	1.00
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	2520	1583	389	3151	1583	786	1001	1583	369	747	1583
v/s Ratio Prot	c0.07	0.34		0.06	c0.41		c0.12	0.11		0.05	c0.10	
v/s Ratio Perm			c0.24			0.06			0.14			0.18
v/c Ratio	0.59	0.68	0.24	0.53	0.84	0.06	0.74	0.57	0.14	0.48	0.70	0.18
Uniform Delay, d1	43.6	20.0	0.0	43.6	22.8	0.0	41.8	37.8	0.0	43.7	42.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.7	0.4	1.4	2.1	0.1	3.8	0.8	0.2	1.0	2.9	0.2
Delay (s)	45.8	20.7	0.4	45.0	24.9	0.1	45.6	38.6	0.2	44.7	45.1	0.2
Level of Service	D	C	A	D	C	A	D	D	A	D	D	A
Approach Delay (s)		19.9			25.5			35.4			32.1	
Approach LOS		B			C			D			C	

























Intersection Summary

HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	104.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group























JAA MPR Traffic Analysis
5: Galleria Blvd & Roseville Pkwy

Cumulative Plus Project Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	1457	794	309	1865	680	656	846	77	810	990	459
Future Volume (veh/h)	306	1457	794	309	1865	680	656	846	77	810	990	459
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1788	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	333	1584	0	336	2027	0	713	920	0	880	1076	0
Adj No. of Lanes	2	4	1	2	4	1	2	3	1	3	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	454	1945	449	464	1928	445	656	1418	418	1089	1083	461
Arrive On Green	0.14	0.30	0.00	0.13	0.30	0.00	0.19	0.28	0.00	0.22	0.31	0.00
Sat Flow, veh/h	3304	6408	1583	3442	6408	1583	3442	5085	1583	5003	3539	1583
Grp Volume(v), veh/h	333	1584	0	336	2027	0	713	920	0	880	1076	0
Grp Sat Flow(s),veh/h/ln	1652	1602	1583	1721	1602	1583	1721	1695	1583	1668	1770	1583
Q Serve(g_s), s	9.6	22.8	0.0	9.3	30.0	0.0	19.0	15.9	0.0	16.6	30.2	0.0
Cycle Q Clear(g_c), s	9.6	22.8	0.0	9.3	30.0	0.0	19.0	15.9	0.0	16.6	30.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	1945	449	464	1928	445	656	1418	418	1089	1083	461
V/C Ratio(X)	0.73	0.81	0.00	0.72	1.05	0.00	1.09	0.65	0.00	0.81	0.99	0.00
Avail Cap(c_a), veh/h	464	1945	449	483	1928	445	656	1418	418	1154	1083	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.3	32.1	0.0	41.4	34.8	0.0	40.3	31.7	0.0	37.0	34.5	0.0
Incr Delay (d2), s/veh	5.8	2.8	0.0	5.1	35.5	0.0	61.1	1.0	0.0	4.2	25.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	10.4	0.0	4.8	17.9	0.0	14.5	7.5	0.0	8.1	18.5	0.0
LnGrp Delay(d),s/veh	47.1	34.9	0.0	46.5	70.3	0.0	101.5	32.7	0.0	41.2	60.3	0.0
LnGrp LOS	D	C		D	F		F	C		D	E	
Approach Vol, veh/h		1917			2363			1633			1956	
Approach Delay, s/veh		37.0			66.9			62.7			51.7	
Approach LOS		D			E			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.7	29.3	15.4	31.3	21.0	32.0	15.7	31.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	21.0	24.0	12.0	27.0	17.0	28.0	12.0	27.0				
Max Q Clear Time (g_c+I1), s	18.6	17.9	11.3	24.8	21.0	32.2	11.6	32.0				
Green Ext Time (p_c), s	1.1	3.8	0.1	2.1	0.0	0.0	0.1	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			55.0									
HCM 2010 LOS			D									

JAA MPR Traffic Analysis
6: Harding Blvd & Wills Road

Cumulative Plus Project Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	304	7	198	16	16	40	222	1441	5	5	1544	613
Future Volume (vph)	304	7	198	16	16	40	222	1441	5	5	1544	613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0	3.0	1.5		3.0	1.5	1.5
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1817	1583	3433	3538		1770	3539	1583
Flt Permitted	0.95	0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1689	1583		1817	1583	3433	3538		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	330	8	215	17	17	43	241	1566	5	5	1678	666
RTOR Reduction (vph)	0	0	134	0	0	40	0	0	0	0	0	154
Lane Group Flow (vph)	168	170	81	0	34	3	241	1571	0	5	1678	512
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	3	3		5	2		1	6	
Permitted Phases			4			3						6
Actuated Green, G (s)	12.4	12.4	23.4		5.8	5.8	11.0	63.1		1.2	53.3	53.3
Effective Green, g (s)	13.4	13.4	25.4		6.8	6.8	12.0	65.6		2.2	55.8	55.8
Actuated g/C Ratio	0.14	0.14	0.26		0.07	0.07	0.12	0.67		0.02	0.57	0.57
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	228	229	456		125	109	418	2356		39	2004	896
v/s Ratio Prot	0.10	c0.10	0.02		c0.02		c0.07	0.44		0.00	c0.47	
v/s Ratio Perm			0.03			0.00						0.32
v/c Ratio	0.74	0.74	0.18		0.27	0.03	0.58	0.67		0.13	0.84	0.57
Uniform Delay, d1	40.9	40.9	28.4		43.5	42.8	40.9	9.9		47.2	17.6	13.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	11.7	12.2	0.2		1.2	0.1	1.9	0.7		1.5	3.2	0.9
Delay (s)	52.6	53.1	28.6		44.7	42.9	42.8	10.6		48.7	20.8	14.6
Level of Service	D	D	C		D	D	D	B		D	C	B
Approach Delay (s)		43.4			43.7			14.9			19.1	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM 2000 Control Delay			20.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			98.5			Sum of lost time (s)			10.5			
Intersection Capacity Utilization			74.3%			ICU Level of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

JAA MPR Traffic Analysis
7: Harding Blvd & Lead Hill Blvd

Cumulative Plus Project Conditions
PM Peak Hour



Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	793	745	820	444	1018	827
Future Volume (vph)	793	745	820	444	1018	827
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	1.7	1.7	1.7	1.7	3.0
Lane Util. Factor	0.97	0.91	0.95	1.00	0.97	0.95
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.96	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.96	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3353	1441	3539	1583	3433	3539
Flt Permitted	0.96	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3353	1441	3539	1583	3433	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	862	810	891	483	1107	899
RTOR Reduction (vph)	31	331	0	343	0	0
Lane Group Flow (vph)	1115	195	891	140	1107	899
Confl. Peds. (#/hr)	484					
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	6		8		7	4
Permitted Phases		6		8		
Actuated Green, G (s)	36.9	36.9	25.0	25.0	32.0	61.0
Effective Green, g (s)	37.9	39.2	27.3	27.3	34.3	62.0
Actuated g/C Ratio	0.36	0.37	0.26	0.26	0.32	0.59
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1199	533	912	408	1111	2071
v/s Ratio Prot	c0.33		c0.25		c0.32	0.25
v/s Ratio Perm		0.14		0.09		
v/c Ratio	0.93	0.37	0.98	0.34	1.00	0.43
Uniform Delay, d1	32.7	24.3	39.0	32.0	35.7	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.4	0.4	24.0	0.5	25.9	0.1
Delay (s)	45.1	24.7	63.0	32.5	61.7	12.3
Level of Service	D	C	E	C	E	B
Approach Delay (s)	38.7		52.3			39.6
Approach LOS	D		D			D

Intersection Summary

HCM 2000 Control Delay	42.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	105.9	Sum of lost time (s)	6.4
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			
























JAA MPR Traffic Analysis
8: N. Sunrise Ave & Lead Hill Blvd

Cumulative Plus Project Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	644	544	83	602	181	489	683	58	163	638	314
Future Volume (vph)	202	644	544	83	602	181	489	683	58	163	638	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			-7%	
Total Lost time (s)	3.0	2.0	2.0	3.0	1.3	1.3	3.0	1.7	3.0	3.0	1.7	1.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5085	1583	3553	5263	1639
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5085	1583	3553	5263	1639
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	700	591	90	654	197	532	742	63	177	693	341
RTOR Reduction (vph)	0	0	412	0	0	149	0	0	39	0	0	232
Lane Group Flow (vph)	220	700	179	90	654	48	532	742	24	177	693	109
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	14.8	27.7	27.7	8.1	21.0	21.0	32.6	36.2	36.2	10.1	13.7	13.7
Effective Green, g (s)	15.8	29.7	29.7	9.1	23.7	23.7	33.6	38.5	37.2	11.1	16.0	16.0
Actuated g/C Ratio	0.16	0.30	0.30	0.09	0.24	0.24	0.34	0.39	0.38	0.11	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	285	1071	479	164	854	382	606	1995	600	402	858	267
v/s Ratio Prot	c0.12	0.20		0.05	c0.18		c0.30	0.15		0.05	c0.13	
v/s Ratio Perm			0.11			0.03			0.02			0.07
v/c Ratio	0.77	0.65	0.37	0.55	0.77	0.12	0.88	0.37	0.04	0.44	0.81	0.41
Uniform Delay, d1	39.4	29.7	26.9	42.5	34.6	29.1	30.3	21.2	19.2	40.6	39.6	36.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.2	1.4	0.5	3.7	4.1	0.1	13.6	0.1	0.0	0.8	5.6	1.0
Delay (s)	51.6	31.2	27.4	46.3	38.8	29.2	43.9	21.3	19.2	41.4	45.2	37.8
Level of Service	D	C	C	D	D	C	D	C	B	D	D	D
Approach Delay (s)		32.7			37.5			30.2			42.6	
Approach LOS		C			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			35.3								HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			98.1								Sum of lost time (s)	9.7
Intersection Capacity Utilization			80.6%								ICU Level of Service	D
Analysis Period (min)			15									
c Critical Lane Group												

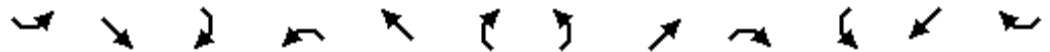
JAA MPR Traffic Analysis
9: Harding Blvd & Estates Drive

Cumulative Plus Project Conditions
PM Peak Hour

													
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR	
Lane Configurations													
Traffic Volume (vph)	302	14	27	25	12	53	47	909	0	71	1360	187	
Future Volume (vph)	302	14	27	25	12	53	47	909	0	71	1360	187	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.0	3.0			3.0	3.0	3.0	2.0		3.0	2.0		
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	0.95		1.00	0.95		
Frt	1.00	0.98			1.00	0.85	1.00	1.00		1.00	0.98		
Flt Protected	0.95	0.96			0.97	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1681	1665			1802	1583	1770	3539		1770	3475		
Flt Permitted	0.95	0.96			0.97	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (perm)	1681	1665			1802	1583	1770	3539		1770	3475		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	328	15	29	27	13	58	51	988	0	77	1478	203	
RTOR Reduction (vph)	0	6	0	0	0	54	0	0	0	0	9	0	
Lane Group Flow (vph)	187	179	0	0	40	4	51	988	0	77	1672	0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA		
Protected Phases	4	4		3	3		5	2		1	6		
Permitted Phases						3							
Actuated Green, G (s)	13.1	13.1			5.9	5.9	6.5	48.7		7.3	49.5		
Effective Green, g (s)	14.1	14.1			6.9	6.9	7.5	50.7		8.3	51.5		
Actuated g/C Ratio	0.15	0.15			0.08	0.08	0.08	0.56		0.09	0.57		
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0		
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	260	257			136	120	145	1971		161	1966		
v/s Ratio Prot	c0.11	0.11			c0.02		0.03	0.28		c0.04	c0.48		
v/s Ratio Perm						0.00							
v/c Ratio	0.72	0.70			0.29	0.04	0.35	0.50		0.48	0.85		
Uniform Delay, d1	36.6	36.4			39.7	39.0	39.5	12.4		39.3	16.5		
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2	9.2	8.0			1.2	0.1	1.5	0.2		2.2	3.7		
Delay (s)	45.7	44.4			41.0	39.1	40.9	12.6		41.5	20.3		
Level of Service	D	D			D	D	D	B		D	C		
Approach Delay (s)		45.1			39.9			14.0			21.2		
Approach LOS		D			D			B			C		
Intersection Summary													
HCM 2000 Control Delay			22.2									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.74										
Actuated Cycle Length (s)			91.0									Sum of lost time (s)	11.0
Intersection Capacity Utilization			73.1%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

JAA MPR Traffic Analysis
10: Harding Blvd & Roseville Square

Cumulative Plus Project Conditions
PM Peak Hour



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕	↕		↕	↕	↕	↕↔		↕	↕↔	
Traffic Volume (vph)	159	20	129	132	7	48	130	781	20	25	1181	39
Future Volume (vph)	159	20	129	132	7	48	130	781	20	25	1181	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0	3.0	2.0		3.0	2.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583		1779	1583	1770	3526		1770	3522	
Flt Permitted		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583		1779	1583	1770	3526		1770	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	173	22	140	143	8	52	141	849	22	27	1284	42
RTOR Reduction (vph)	0	0	118	0	0	45	0	1	0	0	2	0
Lane Group Flow (vph)	0	195	22	0	151	7	141	870	0	27	1324	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3						
Actuated Green, G (s)		14.0	14.0		11.6	11.6	11.4	50.8		4.4	43.8	
Effective Green, g (s)		15.0	15.0		12.6	12.6	12.4	52.8		5.4	45.8	
Actuated g/C Ratio		0.15	0.15		0.13	0.13	0.13	0.55		0.06	0.47	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		276	245		231	206	226	1923		98	1666	
v/s Ratio Prot		c0.11			c0.08		c0.08	0.25		0.02	c0.38	
v/s Ratio Perm			0.01			0.00						
v/c Ratio		0.71	0.09		0.65	0.03	0.62	0.45		0.28	0.79	
Uniform Delay, d1		38.8	35.0		40.0	36.8	40.0	13.3		43.8	21.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.0	0.2		6.5	0.1	5.3	0.2		1.5	2.7	
Delay (s)		46.8	35.2		46.5	36.8	45.3	13.4		45.4	24.2	
Level of Service		D	D		D	D	D	B		D	C	
Approach Delay (s)		42.0			44.0			17.9			24.7	
Approach LOS		D			D			B			C	
























Intersection Summary

HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group













JAA MPR Traffic Analysis
11: Harding Blvd & Douglas Blvd

Cumulative Plus Project Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	371	1307	18	109	1103	581	48	60	114	1014	12	337
Future Volume (vph)	371	1307	18	109	1103	581	48	60	114	1014	12	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	403	1421	20	118	1199	632	52	65	124	1102	13	366
RTOR Reduction (vph)	0	1	0	0	0	228	0	0	112	0	0	249
Lane Group Flow (vph)	403	1440	0	118	1199	404	52	65	12	562	553	117
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4		4
Permitted Phases						6			3			4
Actuated Green, G (s)	19.0	39.3		10.7	31.0	31.0	8.9	8.9	8.9	28.0	28.0	28.0
Effective Green, g (s)	20.0	40.3		11.7	32.0	32.0	9.9	9.9	9.9	29.0	29.0	29.0
Actuated g/C Ratio	0.19	0.39		0.11	0.31	0.31	0.10	0.10	0.10	0.28	0.28	0.28
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	344	1383		201	1100	492	170	179	152	473	475	446
v/s Ratio Prot	c0.23	c0.41		0.07	0.34		0.03	c0.03		c0.33		0.33
v/s Ratio Perm						0.26			0.01			0.07
v/c Ratio	1.17	1.04		0.59	1.09	0.82	0.31	0.36	0.08	1.19	1.16	0.26
Uniform Delay, d1	41.5	31.3		43.3	35.5	32.8	43.3	43.5	42.3	37.0	37.0	28.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	103.8	35.7		4.3	55.1	10.6	1.0	1.3	0.2	104.2	94.8	0.3
Delay (s)	145.2	67.0		47.6	90.5	43.4	44.3	44.8	42.6	141.1	131.8	29.0
Level of Service	F	E		D	F	D	D	D	D	F	F	C
Approach Delay (s)		84.1			72.6			43.5			109.9	
Approach LOS		F			E			D			F	
Intersection Summary												
HCM 2000 Control Delay			85.2									F
HCM 2000 Volume to Capacity ratio			1.07									
Actuated Cycle Length (s)			102.9								12.0	
Intersection Capacity Utilization			96.1%									F
Analysis Period (min)			15									
c Critical Lane Group												

JAA MPR Traffic Analysis
12: Douglas Blvd & I-80 WB

Cumulative Plus Project Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↑↑		↑
Traffic Volume (veh/h)	0	1094	769	0	1613	1402	0	0	0	1019	0	175
Future Volume (veh/h)	0	1094	769	0	1613	1402	0	0	0	1019	0	175
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863				1863	0	1863
Adj Flow Rate, veh/h	0	1189	0	0	1753	0				1108	0	190
Adj No. of Lanes	0	2	1	0	2	1				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	0	2
Cap, veh/h	0	2174	956	0	2198	956				1043	0	480
Arrive On Green	0.00	0.61	0.00	0.00	0.62	0.00				0.30	0.00	0.30
Sat Flow, veh/h	0	3632	1583	0	3632	1583				3442	0	1583
Grp Volume(v), veh/h	0	1189	0	0	1753	0				1108	0	190
Grp Sat Flow(s),veh/h/ln	0	1770	1583	0	1770	1583				1721	0	1583
Q Serve(g_s), s	0.0	11.3	0.0	0.0	21.6	0.0				17.6	0.0	5.5
Cycle Q Clear(g_c), s	0.0	11.3	0.0	0.0	21.6	0.0				17.6	0.0	5.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2174	956	0	2198	956				1043	0	480
V/C Ratio(X)	0.00	0.55	0.00	0.00	0.80	0.00				1.06	0.00	0.40
Avail Cap(c_a), veh/h	0	2292	1009	0	2316	1009				1043	0	480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.5	0.0	0.0	8.3	0.0				20.2	0.0	16.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	2.0	0.0				45.9	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.5	0.0	0.0	10.8	0.0				14.9	0.0	2.4
LnGrp Delay(d),s/veh	0.0	6.8	0.0	0.0	10.2	0.0				66.1	0.0	16.6
LnGrp LOS		A			B					F		B
Approach Vol, veh/h		1189			1753						1298	
Approach Delay, s/veh		6.8			10.2						58.9	
Approach LOS		A			B						E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		38.1		20.0		38.1						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		36.0		16.0		36.0						
Max Q Clear Time (g_c+I1), s		13.3		19.6		23.6						
Green Ext Time (p_c), s		17.2		0.0		10.5						
Intersection Summary												
HCM 2010 Ctrl Delay			24.1									
HCM 2010 LOS			C									

JAA MPR Traffic Analysis
13: I-80 EB & Douglas Blvd

Cumulative Plus Project Conditions
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	1079	0	0	2548	527	0	0	1180	0	0	465
Future Volume (vph)	288	1079	0	0	2548	527	0	0	1180	0	0	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	3.0			2.0	2.0			3.0			3.0
Lane Util. Factor	1.00	0.86			0.91	1.00			1.00			0.88
Frt	1.00	1.00			1.00	0.85			0.86			0.85
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	6408			5085	1583			1611			2787
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	6408			5085	1583			1611			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	313	1173	0	0	2770	573	0	0	1283	0	0	505
RTOR Reduction (vph)	0	0	0	0	0	160	0	0	0	0	0	431
Lane Group Flow (vph)	313	1173	0	0	2770	413	0	0	1283	0	0	74
Turn Type	Prot	NA			NA	Perm			Free			Perm
Protected Phases	5	2			6							
Permitted Phases						6			Free			4
Actuated Green, G (s)	18.6	79.7			58.1	58.1			97.9			8.2
Effective Green, g (s)	20.6	81.7			60.1	60.1			97.9			10.2
Actuated g/C Ratio	0.21	0.83			0.61	0.61			1.00			0.10
Clearance Time (s)	4.0	5.0			4.0	4.0						5.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	372	5347			3121	971			1611			290
v/s Ratio Prot	0.18	0.18			c0.54							
v/s Ratio Perm						0.26			c0.80			0.03
v/c Ratio	0.84	0.22			0.89	0.43			0.80			0.26
Uniform Delay, d1	37.1	1.6			16.0	9.9			0.0			40.4
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	15.7	0.0			3.4	0.3			4.2			0.5
Delay (s)	52.7	1.7			19.5	10.2			4.2			40.8
Level of Service	D	A			B	B			A			D
Approach Delay (s)		12.4			17.9			4.2			40.8	
Approach LOS		B			B			A			D	
























Intersection Summary

HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	97.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
14: Sunrise Ave & Douglas Blvd

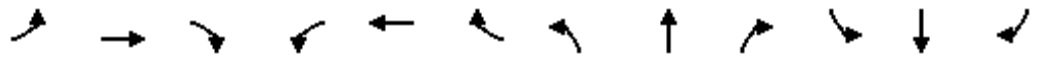
Cumulative Plus Project Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	1599	188	212	2221	145	389	494	164	184	783	466
Future Volume (veh/h)	430	1599	188	212	2221	145	389	494	164	184	783	466
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	467	1738	204	230	2414	158	423	537	178	200	851	507
Adj No. of Lanes	2	3	1	2	4	0	2	2	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	499	2359	946	350	2605	170	499	796	347	319	878	494
Arrive On Green	0.14	0.46	0.45	0.10	0.42	0.42	0.14	0.22	0.22	0.09	0.17	0.17
Sat Flow, veh/h	3442	5085	1583	3442	6193	404	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	467	1738	204	230	1872	700	423	537	178	200	851	507
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1791	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	12.0	25.0	5.3	5.8	33.2	33.4	10.8	12.4	8.9	5.0	14.9	15.0
Cycle Q Clear(g_c), s	12.0	25.0	5.3	5.8	33.2	33.4	10.8	12.4	8.9	5.0	14.9	15.0
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	499	2359	946	350	2021	753	499	796	347	319	878	494
V/C Ratio(X)	0.94	0.74	0.22	0.66	0.93	0.93	0.85	0.67	0.51	0.63	0.97	1.03
Avail Cap(c_a), veh/h	499	2359	946	499	2035	759	499	796	347	499	878	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	19.6	8.3	38.8	24.7	24.7	37.4	31.8	30.8	39.2	36.9	30.9
Incr Delay (d2), s/veh	25.4	1.2	0.1	2.1	7.9	17.8	12.9	2.3	1.3	2.0	23.0	47.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	11.9	2.4	2.8	16.0	20.1	6.0	6.3	4.0	2.5	8.8	18.7
LnGrp Delay(d),s/veh	63.4	20.8	8.5	40.9	32.6	42.5	50.4	34.0	32.1	41.3	59.9	78.2
LnGrp LOS	E	C	A	D	C	D	D	C	C	D	E	F
Approach Vol, veh/h		2409			2802			1138			1558	
Approach Delay, s/veh		28.0			35.7			39.8			63.4	
Approach LOS		C			D			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	43.6	16.0	18.0	16.0	39.7	11.3	22.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	36.0	12.0	14.0	12.0	36.0	12.0	14.0				
Max Q Clear Time (g_c+I1), s	7.8	27.0	12.8	17.0	14.0	35.4	7.0	14.4				
Green Ext Time (p_c), s	0.4	9.0	0.0	0.0	0.0	0.4	0.3	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			39.4									
HCM 2010 LOS			D									

JAA MPR Traffic Analysis
11: Harding Blvd & Douglas Blvd

Cumulative Plus Project Conditions - Mitigated

AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	1344	16	70	658	922	16	8	29	650	11	206
Future Volume (vph)	226	1344	16	70	658	922	16	8	29	650	11	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3533		1770	3539	1583	1770	1863	1583	1681	1688	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3533		1770	3539	1583	1770	1863	1583	1681	1688	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	246	1461	17	76	715	1002	17	9	32	707	12	224
RTOR Reduction (vph)	0	1	0	0	0	216	0	0	30	0	0	171
Lane Group Flow (vph)	246	1477	0	76	715	786	17	9	2	361	358	53
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6	4	3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	12.3	33.7		7.2	28.6	46.0	3.8	3.8	3.8	17.4	17.4	17.4
Effective Green, g (s)	13.3	34.7		8.2	29.6	48.0	4.8	4.8	4.8	18.4	18.4	18.4
Actuated g/C Ratio	0.17	0.44		0.10	0.38	0.61	0.06	0.06	0.06	0.24	0.24	0.24
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	301	1569		185	1341	972	108	114	97	396	397	372
v/s Ratio Prot	c0.14	c0.42		0.04	0.20	0.19	c0.01	0.00		c0.21	0.21	
v/s Ratio Perm						0.31			0.00			0.03
v/c Ratio	0.82	0.94		0.41	0.53	0.81	0.16	0.08	0.02	0.91	0.90	0.14
Uniform Delay, d1	31.2	20.7		32.7	18.9	11.5	34.7	34.6	34.4	29.1	29.0	23.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.6	11.6		1.5	0.4	5.0	0.7	0.3	0.1	24.7	23.0	0.2
Delay (s)	46.9	32.3		34.2	19.3	16.5	35.4	34.9	34.5	53.8	52.0	23.8
Level of Service	D	C		C	B	B	D	C	C	D	D	C
Approach Delay (s)		34.4			18.4			34.8			46.0	
Approach LOS		C			B			C			D	

Intersection Summary

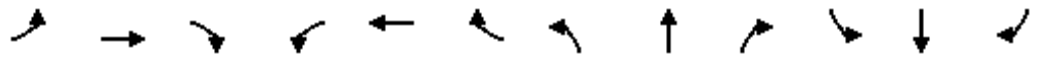
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
11: Harding Blvd & Douglas Blvd

Cumulative Plus Project Conditions - Mitigated

School PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	366	1356	16	90	875	683	29	30	91	1060	12	316
Future Volume (vph)	366	1356	16	90	875	683	29	30	91	1060	12	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3533		1770	3539	1583	1770	1863	1583	1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3533		1770	3539	1583	1770	1863	1583	1681	1687	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	398	1474	17	98	951	742	32	33	99	1152	13	343
RTOR Reduction (vph)	0	1	0	0	0	98	0	0	93	0	0	158
Lane Group Flow (vph)	398	1490	0	98	951	644	32	33	6	588	577	185
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6	4	3	3		4		4
Permitted Phases						6			3			4
Actuated Green, G (s)	31.0	62.8		11.2	43.0	91.0	8.2	8.2	8.2	48.0	48.0	48.0
Effective Green, g (s)	32.0	63.8		12.2	44.0	93.0	9.2	9.2	9.2	49.0	49.0	49.0
Actuated g/C Ratio	0.22	0.44		0.08	0.30	0.64	0.06	0.06	0.06	0.34	0.34	0.34
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	387	1541		147	1065	1006	111	117	99	563	565	530
v/s Ratio Prot	c0.22	c0.42		0.06	0.27	0.21	c0.02	0.02		c0.35	0.34	
v/s Ratio Perm						0.19			0.00			0.12
v/c Ratio	1.03	0.97		0.67	0.89	0.64	0.29	0.28	0.06	1.04	1.02	0.35
Uniform Delay, d1	57.1	40.2		65.0	48.8	16.3	65.4	65.3	64.4	48.6	48.6	36.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.2	15.6		10.9	9.7	1.4	1.4	1.3	0.3	50.0	43.3	0.4
Delay (s)	110.3	55.8		75.9	58.5	17.7	66.8	66.7	64.7	98.6	91.9	37.0
Level of Service	F	E		E	E	B	E	E	E	F	F	D
Approach Delay (s)		67.3			42.6			65.5			82.0	
Approach LOS		E			D			E			F	

Intersection Summary
























HCM 2000 Control Delay	63.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	146.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

JAA MPR Traffic Analysis
11: Harding Blvd & Douglas Blvd

Cumulative Plus Project Conditions - Mitigated

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	371	1307	18	109	1103	581	48	60	114	1014	12	337
Future Volume (vph)	371	1307	18	109	1103	581	48	60	114	1014	12	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3532		1770	3539	1583	1770	1863	1583	1681	1687	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	403	1421	20	118	1199	632	52	65	124	1102	13	366
RTOR Reduction (vph)	0	1	0	0	0	114	0	0	112	0	0	249
Lane Group Flow (vph)	403	1440	0	118	1199	518	52	65	12	562	553	117
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6	4	3	3		4	4	
Permitted Phases						6			3			4
Actuated Green, G (s)	19.0	39.3		10.7	31.0	59.0	8.9	8.9	8.9	28.0	28.0	28.0
Effective Green, g (s)	20.0	40.3		11.7	32.0	61.0	9.9	9.9	9.9	29.0	29.0	29.0
Actuated g/C Ratio	0.19	0.39		0.11	0.31	0.59	0.10	0.10	0.10	0.28	0.28	0.28
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	344	1383		201	1100	938	170	179	152	473	475	446
v/s Ratio Prot	c0.23	c0.41		0.07	0.34	0.16	0.03	c0.03		c0.33	0.33	
v/s Ratio Perm						0.17			0.01			0.07
v/c Ratio	1.17	1.04		0.59	1.09	0.55	0.31	0.36	0.08	1.19	1.16	0.26
Uniform Delay, d1	41.5	31.3		43.3	35.5	12.7	43.3	43.5	42.3	37.0	37.0	28.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	103.8	35.7		4.3	55.1	0.7	1.0	1.3	0.2	104.2	94.8	0.3
Delay (s)	145.2	67.0		47.6	90.5	13.4	44.3	44.8	42.6	141.1	131.8	29.0
Level of Service	F	E		D	F	B	D	D	D	F	F	C
Approach Delay (s)		84.1			62.9			43.5			109.9	
Approach LOS		F			E			D			F	
Intersection Summary												
HCM 2000 Control Delay			81.8									F
HCM 2000 Volume to Capacity ratio			1.07									
Actuated Cycle Length (s)			102.9								12.0	
Intersection Capacity Utilization			96.1%									F
ICU Level of Service												
Analysis Period (min)			15									
c	Critical Lane Group											